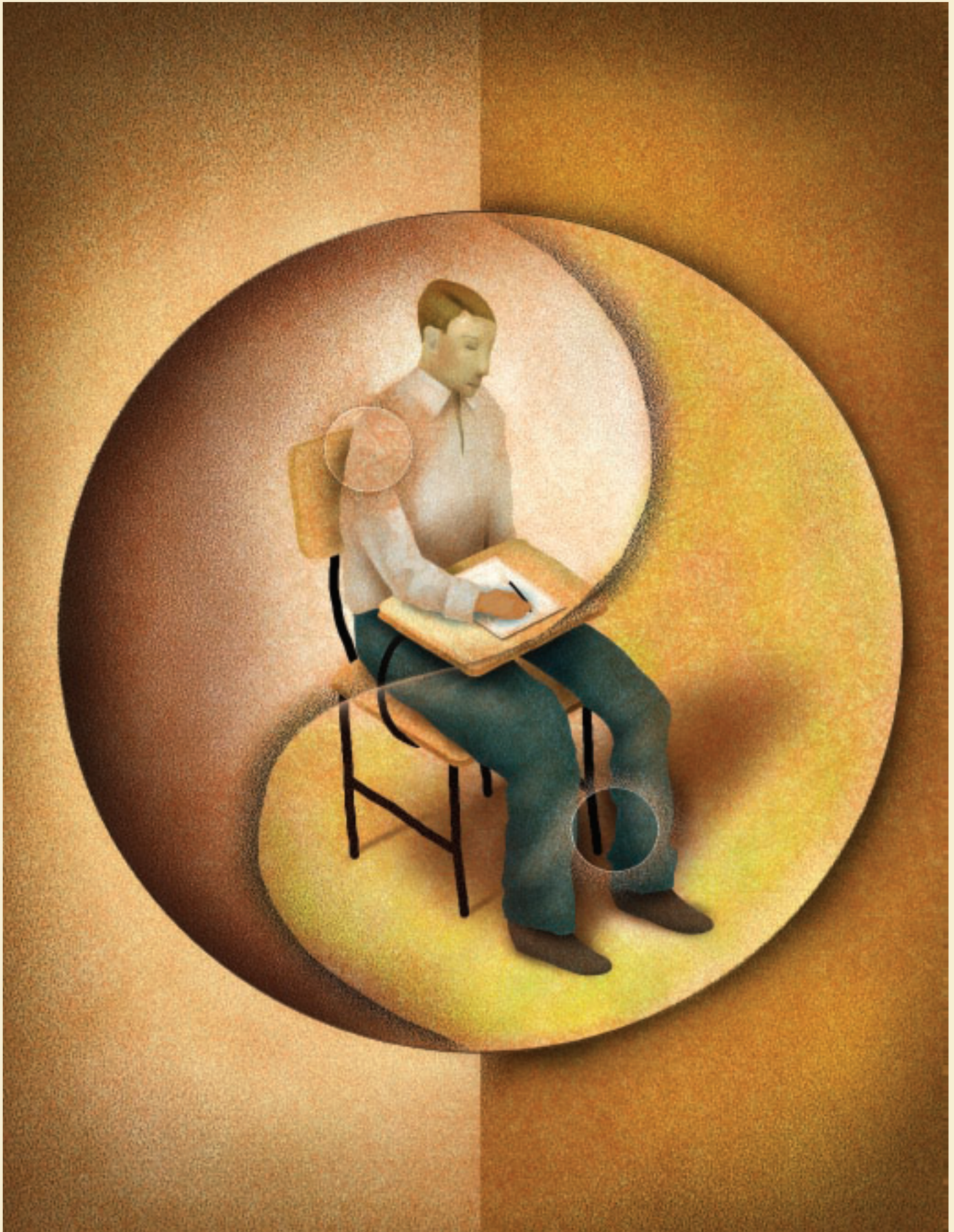


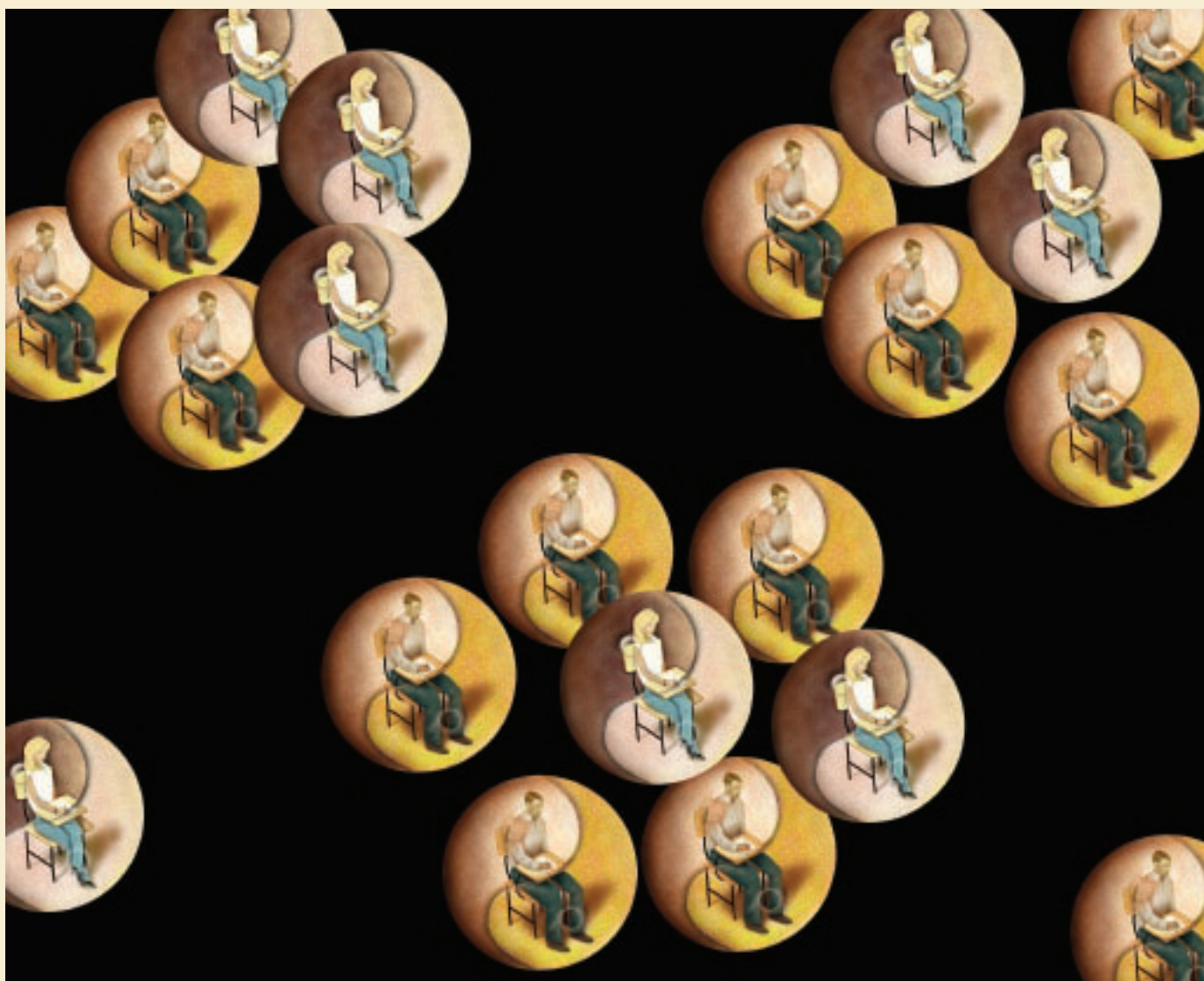
# Making Sense of Assessment

**B**usiness school administrators have so much on their plates already, with budgets, fund raising, curriculum revisions, accreditation, and more. Adding yet another significant task can seem overwhelming. Yet learning assessment could well be as important to a school's operations as the other activities combined. After all, learning assessment and assurance of learning represent a central tenet of a business school's mission: making certain that students have learned what they need to make valuable contributions to business.

In this issue of *BizEd*, we present a variety of perspectives on the planning, design, and implementation challenges a business school faces when designing an effective assessment plan. How can a school involve all of its faculty members in the process? What does it take to get a complete picture of student learning? In what ways can student learning be measured? How often should schools test their students, what tests should they use—and when is testing not enough? We hear views on these questions from Bryant University in Smithfield, Rhode Island; Indiana University Northwest in Gary; the International University of Monaco; Erasmus University in The Netherlands; and the Graduate Management Admission Council in McLean, Virginia.

Setting assessment policies and procedures might be among the most detailed tasks administrators will tackle. But the educators here emphasize that, once in place, effective assessment can enhance learning, enrich teaching, and actually save time and effort in the long run. In the following section, they share advice, experiences, and insights in an effort to ease the way for other schools currently planning, developing, or refining their own assessment plans.





# Assessment Investment

A five-point strategy helps schools overcome faculty resistance to assurance of learning programs and encourages professors to invest in the assessment process.

by Carol W. DeMoranville

**M**ention assessment to most faculty, and they suddenly become too busy to have even a three-minute chat. Their file cabinets need cleaning out, their class notes from 1999 need updating, they're on their way to an off-campus appointment. Assessment is an anathema to many professors, who consider it just another way for administrators to interfere with teaching. And yet,

business faculty must get on board with assessment practices, because AACSB International requires accredited schools to maintain faculty-driven assurance of learning programs.

I've been involved in a number of assessment programs, and I've concluded that faculty usually have three reasons to resist. First, they're already so busy with research, teaching, and service requirements that they have little time for additional activities, particularly ones they perceive as busy-work. Second, they question the value of assurance of learn-

ing activities because the benefits are abstract, while the costs are concrete. Furthermore, the benefits—better learning—accrue to the students, while the costs—additional work—accrue to the faculty.

Third, and this is paramount, they think these programs impinge on their academic freedom. They are adamant about maintaining complete authority to design and deliver their courses as they see fit.

But it *is* possible for schools to design assurance of learning programs that overcome these obstacles to faculty participation. At Bryant University's College of Business, we have adopted strategies that have resulted in more than half of our faculty participating in the assurance of learning process. Other areas of the university have also benefited, as many of our assessment practices have spilled over into the College of Arts & Sciences.

We believe there are five key factors in making faculty enthusiastic about assessment: a supportive administration, a faculty champion, an evolving development process, a well-defined structure, and an emphasis on excellent communication. In our case, two other factors helped us enlist faculty support when we needed it most: an impending AACSB Maintenance of Accreditation visit, and a growing program that appealed to new faculty, who might have been more receptive to assurance of learning than more entrenched professors. But while these last two components provided an extra push, we believe that the real keys to our success are the first five factors—and that any other school can employ them as well.

### **One: Top-Level Support**

For any program to succeed, the most senior-level members of the administration must be behind it. At Bryant, our most ardent supporter of faculty-led assurance of learning proved to be Jack Trifts, who became dean of the College of Business in 2005. Trifts immediately convened an Assessment Committee composed of one representative from each college department. He also served as an active participant on the committee.

In three ways, he signaled to faculty across the college that assurance of learning was critical. First, by serving on the assessment committee himself, he showed how important he thought it was, and he encouraged other faculty members to move quickly on assessment efforts. He also modeled behavior and provided insights about assessment practices, since he had served on AACSB reaccreditation teams for a number of schools.

Second, he made sure assessment was an agenda topic at all collegewide faculty meetings, which were held three

or four times a year. At those meetings, even faculty who weren't yet actively involved in assurance of learning were kept informed of the progress made by members of the Assessment Committee.

Finally, Trifts gave other members of the committee financial and strategic support. He made sure they were sent to AACSB assessment conferences, and he gave them copies of *Assessment of Student Learning in Business Schools: Best Practices Each Step of the Way*, edited by Kathryn Martell and Thomas Calderon.

### **Two: A Faculty Champion**

A school that wants a faculty-led assurance of learning process must have an outspoken proponent who is knowledgeable about the subject and will speak about it enthusiastically to anyone, anywhere, anytime. This assessment cheerleader should be a full-time faculty member with teaching, research, and service responsibilities who has credibility with the rest of the faculty and is respected by colleagues. He or she also should be an outgoing person who proactively connects with other faculty and actively shares information. Ideally, the champion can share positive outcomes from other assessment experiences to show that, indeed, assessment is a good thing!

At Bryant, I serve as our faculty champion. Although I was new to the college in 2005, I had assessment experience at my previous school, Northern Illinois University, and I staunchly believe the assessment process has benefits for both students and faculty. I first served as our department's representative to the Assessment Committee, and I became chair of the committee in 2006.

As faculty champion, I always listen to alternate opinions and suggestions, but I will not let problems or criticisms get in the way of progress. In fact, that attitude—that determination to move forward constantly despite setbacks—is essential for anyone involved in the assessment process.

### **Three: Continuous Development**

School administrators shouldn't wait to craft the perfect assessment plan before they start implementing it, or they will surely fail. They need to design an initial plan and then jump right in, making incremental improvements as they go along.

At Bryant, our goal was to develop and implement our assurance of learning process quickly, recognizing that it wouldn't be perfect but that we could improve upon it over time. We started out by identifying learning goals and objectives for the primary undergraduate program, the BSBA. We presented a draft of the learning goals to the faculty in spring 2006, and we were already planning how to assess them while

“For an assessment program to succeed, administrators must devise a system that encourages faculty to participate—and lets them know exactly what’s expected of them when they do.”

the College of Business faculty reviewed and discussed them. It took about three months before the faculty approved the goals. Then the hard work began.

The Assessment Committee developed a matrix that illustrated which required courses covered or evaluated the objectives of the six learning goals. The matrix also indicated where we might find student artifacts, such as class assignments or completed projects, that could be used for assessment.

We chose to assess each of the six goals every academic year. However, we developed a multiyear schedule for assessment because we decided to assess only one objective for each goal in any one year. We believed this was sufficient to give us information about student achievement while keeping the workload at a manageable level. Furthermore, most of the learning goals had between two and four objectives, so we thought that a rolling schedule of assessment would give us complete information about the goal approximately every two years.

We then determined—and this was crucial—that the committee members would conduct the initial assessments. That way, we could work out any problems with the process, develop and revise rubrics, and present the faculty with a system that worked. We were very deliberate about letting the rest of the faculty know that we were “protecting” them from assessment activities, but we shared and discussed the results of our findings with them at collegewide meetings.

This strategy proved to be highly successful. By the time we were ready to roll out the assurance of learning process to the rest of the faculty, they were already on board because they had seen positive results. For instance, we were able to show measurable improvements in the ETS Major Field Test for Business, which we use to assess our general business knowledge learning goal. The results of curriculum revisions and performance incentives for students had a significant impact on subject areas where previous performance had been below expectations.

We were also able to show faculty how student performance had improved in the learning objective for written communication. One of our early assessments showed that our students needed improvement in this area—no surprise there. We invited faculty to offer potential solutions, and they suggested instituting a business communications course, increasing written assignments, and providing more detailed feedback on papers.

We encouraged faculty, when considering solutions, to use the “fatal flaw policy” developed by Kathryn Martell and shared with us at an AACSB Assessment Conference. (See “No More Fatal Flaws,” page 30.) This policy states that stu-

dents’ written work must be professionally acceptable—i.e., free from errors—or it will be returned without grading for revisions and subsequent grade penalties.

The Assessment Committee spent three semesters conducting assurance of learning studies and reporting results. When we had made our final changes to the process, we rolled it out to the entire college.

#### **Four: A Well-Defined Structure**

For an assessment program to succeed, administrators must devise a system that encourages faculty to participate—and lets them know exactly what’s expected of them when they do.

At Bryant, our Assessment Committee initially consisted of seven people: the dean; five faculty members, one from each department; and an administrative assistant who had been involved in assurance of learning processes during accreditation efforts with both AACSB and the New England Association of Schools and Colleges.

When we were ready to roll out the process to the rest of the college, we added three members, recruiting them from the graduate school administration, the Graduate Faculty Advisory Committee, and the University Curriculum Committee. This helped us establish links between assessment and all aspects of curriculum management; it also ensured that the entire college would be aware of assurance of learning activities and results. At the same time, we changed the committee’s focus to strategic management of the assurance of learning process, and we renamed it the Assessment Steering Committee.

Next, we created Goal Assessment Teams (GATs), each accountable for the assessment of one learning goal. All members of the steering committee became GAT liaisons, responsible for guiding their teams’ assessment activities and reporting the results to the committee. Every GAT was composed of the liaison plus three to five faculty members.

To select potential GAT members, Dean Trifts and I met with the department chairs, who identified professors who might have an interest in a particular learning goal and professors who were too busy to participate at this time. This method resulted in a high degree of participation. Of about 35 faculty who were selected as potential GAT members, only one deferred. But five or six who were not originally chosen volunteered to participate on a team. Even some liberal arts faculty wanted to serve on GATs where they had some natural interest. For example, a math/statistics professor joined the GAT that assesses problem solving and critical thinking.



We announced the GAT structure at a collegewide faculty meeting dedicated to assurance of learning. At that time, the teams met and planned out their activities for the semester. Their directive was ambitious: to collect and report assessment data for their learning objectives within three months.

### **Five: Continuous Communication**

The last key to a successful assurance of learning program is communication. It should be widespread; it should happen at the college, department, and individual levels; and it should follow both formal and informal paths.

Since we have begun the assessment program, every one of Bryant's collegewide faculty meetings has included a session on assurance of learning. At first, these updates essentially consisted of status reports. After a few semesters, though, the assessment portions of the two-hour meetings had expanded to fill at least one hour. We had lively discussions about assessment results and how to "close the loop" between measuring results and improving outcomes. The

spring faculty meeting in May—which is solely dedicated to assurance of learning results—has become the College of Business's most highly attended meeting of the year.

Communication also happens at the department level. From the very beginning, members of the Assessment Committee, and now the Assessment Steering Committee, have instituted formal discussions to keep their own departments apprised of developments. There are also formal communication paths between the steering committee and other relevant groups, such as the Curriculum Committee, the Graduate Faculty Advisory Committee, and the school's departments.

Finally, on an ongoing basis, we promote communication at the individual level. When the GAT system was implemented, every faculty member in the College of Business received an Assessment Handbook, and every new hire also receives a copy. Professors have frequent discussions about assurance of learning, partly because so many of them are actively involved in performing assessment. Originally, discussions centered on efficient ways to accomplish assessment, but once results started coming in, talk turned to improving student performance. While many discussions may start within a GAT, they quickly spill over into other forums. For example, the faculty dining room is a prime location for exchanging information about pedagogical methods for closing the loop.

### **Overcoming Obstacles**

I want to revisit the three primary objections faculty have to assessment and explain how they can be overcome if schools follow Bryant's five keys to success.

- ***I don't have enough time.*** This objection is less convincing when the members of the assessment committees and teams are all faculty members who are also teaching, conducting research, and serving on other committees. If a professor's colleagues manage to incorporate assessment activities into their busy schedules, he or she probably can as well. Furthermore, a structure like the GAT reduces the amount of assessment work that any individual has to do. Most GAT members spend 12 hours or less a semester on assessment activities.

- ***I see the costs, but not the benefits.*** At Bryant, we made the benefits clear, while reducing the costs of time and energy. Early on, we protected faculty from the work of conducting assessment, while we shared with them the improvements we'd made when we were able to close the loop. For instance, we showed how instituting the "fatal flaw policy" can improve student performance *and* shorten the amount of time faculty spend grading written assignments.

We also stressed that the GAT structure reduced how



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## No More Fatal Flaws

Assessment expert Kathryn Martell suggests that student writing will improve if faculty institute a policy stating that student work will only be acceptable if it is free of “fatal flaws.” At Bryant University, Carol DeMoranville adapted Martell’s policy for written assignments and identified ten fatal spelling, grammar, punctuation, and format errors. These include misspelled words, sentence fragments, run-on sentences, erroneous capitalizations, incorrect punctuation, mistakes in verb tense or subject/verb agreement, improper citations, incorrect word usage or awkward writing, and lack of conformity with assignment format.

In DeMoranville’s class, papers are unacceptable if they contain more than three fatal flaws per page or ten per document. When either figure is exceeded, she will return the paper to the student without a grade. The student must correct it and return it by the next class, and the final grade will be reduced by 10 percent. A paper that still contains fatal flaws after it has been returned and resubmitted can receive a grade no higher than a D.

She tells students, “It is in your best interest to give yourself enough time to complete the assignment and carefully proofread and/or use available help before you submit the paper the first time.” She suggests that they use spelling and grammar checking software or seek advice from staff at the school’s writing center if they need help avoiding fatal flaws.

Having such a specific policy in place is useful for faculty, DeMoranville points out. It gives them a template for determining when a written assignment is acceptable—and, by extension, determining whether students are really achieving the learning goals set out by the assessment guidelines. Since instituting the policy, DeMoranville has seen a significant improvement in the quality of her students’ written assignments and a corresponding decrease in the amount of time it takes to grade those assignments.

much time and effort an individual had to spend performing assessment tasks. Ultimately, however, a few faculty were only motivated to get involved when we made it clear that substandard assurance of learning programs could cause us to lose AACSB accreditation.


- *I won’t give up my academic freedom.* Early in the process at Bryant, we spent time educating faculty about what assessment is and isn’t. We specifically stated that assessment would not result in the school dictating what faculty should or shouldn’t do in the classroom.

To date, the only mandate arising from the assessment process is that all faculty must have course objectives on their syllabi and those objectives should align with some of the program learning goals. We do not specify what the objectives should be nor which learning goals they should support. We also reiterate, at virtually every faculty meeting, that assurance of learning is about evaluating degree programs, not faculty or students.

Finally, we make sure that faculty drive the activities that close the loop. Suggestions about how to improve student performance, or maintain good performance, come from the faculty either in collegewide meetings or in smaller, informal groups. Individual professors are free to adopt suggestions or not, but the involvement and enthusiasm of their colleagues is contagious. Because of the way we have implemented assessment strategies, some of the faculty who were most concerned about academic freedom have become our strongest proponents of assurance of learning.

### All Aboard

There are many ways business schools can structure their assurance of learning programs. While we believe our system can work for other schools, every situation is unique and every school will need to find its own strategies. But we’re convinced that, no matter what system is implemented, faculty are more likely to get on board when they perceive that assurance of learning is beneficial to them and won’t cost them a lot of time or effort.

We believe that the five approaches we adopted can bolster any assurance of learning program that’s flagging for lack of participation. Top-level support, faculty champions, incremental improvements, precisely structured systems, and constant communication will spark enthusiasm for assurance of learning among faculty across the business school. 

Carol W. DeMoranville is professor of marketing and Director of College of Business Assessment and Accreditation at Bryant University in Smithfield, Rhode Island.



# Put Learning to the Test

Frequent testing leads to assurance of learning—but only if the tests are done right.

by Lawrence M. Rudner

College students have a hard time remembering what they've learned, and their poor retention rate has been well-documented. For example, in a 1980 study, 1,220 college students were re-tested seven years after they had taken a two-semester economics course. On average, when compared with a group that had not even taken the course, they scored only 9.8 percent higher on course content.

Even while students are still in school, many of them appear to do well all semester, then fail the final. Others cram for the exam, but don't retain enough of the material to move on to more advanced courses. The problem may not be that students aren't *studying* enough—it may be that they're not being *tested* enough.

That conclusion is drawn from early research in the science of learning, an emerging field that has come about as public policy and mandated high-stakes testing have focused attention on learning outcomes. In this field, scientists seek to identify instructional conditions that promote robust student learning—specifically, learning that is retained for long durations, transfers to novel situations, or serves as a foundation for future learning. Starting this year, the National Science Foundation plans to fund mul-

multiple large-scale, long-term centers focused on the science of learning.

So far, it appears that a somewhat counterintuitive take on a well-known phrase is re-emerging as a theme: *Practice makes perfect*. But not just any practice. Researchers have confirmed that testing—a form of practice—produces better recall than repeated study and simple review sessions.

This “testing effect” may seem to counter the conventional wisdom that repeated studying is what enhances learning, whereas tests are just necessary evils—they motivate students to spread out their studying and they allow teachers to assign grades. Yet, the testing effect has been documented in at least 40 years of research involving students at all levels.

## Examining the “Testing Effect”

Recent studies have highlighted the testing effect and elevated interest in the science of learning. Jeffrey Karpicke of Purdue University in West Lafayette, Indiana, and Henry Roediger of Washington University in St. Louis, Missouri, have produced testing research funded by the U.S. Department of Education. Their work has appeared in scholarly journals such as *Science*, *Psychological Science*, and the *Journal of Memory and Language*.

Faculty should avoid simple recall questions such as *what* or *when*; instead, they should pose thought-provoking questions built around *why*, *how*, and *what if*.

With different subjects and different content, Karpicke and Roediger conducted multiple studies investigating retention after different study and test sequences. These included study-test-restudy-retest, study-restudy-restudy-test, and study-test-retest-retest. They also altered what was studied. If students had demonstrated mastery of some content on an earlier test, they could exclude that content from further studying or subsequent testing.

If learning were solely a function of studying, then we would expect that study-study-study-test would yield the best results, while study-test-test-test would have a neutral or detrimental effect. Furthermore, if there were no need to study material after it had been mastered, the traditional paradigm of studying something and then moving on would yield the same results as intensive studying interspersed with testing, or intensive studying followed by multiple tests.

However, Karpicke and Roediger affirmed that testing is not a neutral event and that it is not a good idea to skip over mastered material when studying. Students who followed the study-test-test-test pattern had superior long-term recall of content when compared with students who had followed the study-study-study-test or study-test-study-test sequences. Furthermore, both study-test-study-test and study-test-test-test models yielded much better results than models where students studied and were tested, and then no longer had to study or be tested on content that already had been tested.

In short, practice made perfect: Students who were repeatedly tested on the full material did best of all.

### Testing Tips

So how do faculty create tests that truly assess what students are learning? Research in testing, learning, and assessment suggests these nine strategies for improving learning—before and after a test.

#### 1. Give frequent assignments.

Before they even issue the first test, professors should give students meaningful assignments that require them to work with the material that will be covered in an exam. When students have to outline, apply, and synthesize information, they learn better than they do when they simply read or re-read material. For instance, in a statistics class, students might present case studies involving various techniques and the class might discuss new scenarios where the techniques would apply.

#### 2. Emphasize practical applications.

It's easier for students to remember concepts when they're related to practical applications than when they're presented

as abstractions. Therefore, in most business courses, theory should be kept to a minimum, used only to help students understand key issues. Of course, this depends on the students' needs. In a terminal course for business students, such as statistics, much of the theory is irrelevant. But in a statistics class for math majors, students need to understand all the formulas and how to generalize from them.

Once students understand one application, they can more readily see how it applies in similar instances, which allows them to transfer what they've learned to novel situations. Such transfer of knowledge, from generalized principles to specific situations, is at the heart of all learning.

#### 3. Identify critical skills.

Faculty should make it clear at all levels—from course and syllabus to chapter and classroom—what crucial skills they expect students to learn. For example, at the chapter level in a statistics class, a goal might be for students to understand problems that are addressed in designated books. At the course level, a specific goal might be for them to be able to explain the logic of significance testing. A more general objective might be for them to become critical consumers of scientific studies.

#### 4. Carefully design the test.

Frequent testing isn't beneficial if tests aren't well-designed. Professors should make sure that questions are worded clearly and that one question does not give away the answer to another. Constructing a test takes advanced skill, patience, and more time than many professors expect. Faculty need to plan their test content and questions just as carefully as they plan the outlines or frameworks they use for teaching.

#### 5. Test relevant skills.

A test is only valid if its questions are built around knowledge the professor has communicated to students and expects them to have mastered. It's easy to develop a poor test that has numerous questions addressing relatively obscure points, especially if the professor is drawing questions from an item bank—but that doesn't help students with long-term retention of key concepts.

#### 6. Prepare the right tests.

Learning is enhanced when students must generate answers instead of simply recognizing answers that are provided. That's why essay tests with open-ended questions are better than most multiple-choice or true-false tests. Properly constructed multiple-choice questions can assess skills almost as

## Sample Questions

Good questions are clearly worded, test what students are supposed to be learning, and define what the answer should include. They also assess what the school or professor values. Here are two sample questions—one that works, and one that doesn't.

### Poor

*What is the name of the company saved by public relations activities after product tampering of Extra-Strength Tylenol with cyanide led to the deaths of seven people?*

A student doesn't need to know anything about the product tampering to give the correct answer; the test taker just might know who makes Tylenol. A teacher should expect students to do more than simply be able to recall the name of the company.

### Better

*Discuss the need for a clear business philosophy, using as examples at least four decisions made by Johnson & Johnson in response to Tylenol tampering in the early 1980s.*

This question taps skill of a higher order and clearly defines the expected response. To answer the question correctly, students must connect a concept with concrete examples—explaining the “why,” not just naming the “what.”

well, but those questions are harder to write and generally aren't found in abundance in test banks.

### 7. Ask the right questions.

Tests should require students to use their problem-solving and reasoning skills. Faculty should avoid simple recall questions such as *what* or *when*; instead, they should pose thought-provoking questions built around *why*, *how*, and *what if*. Such questions require students to work more actively with the material—which is a form of practice. As such, it leads to better retention.

### 8. Assess frequently.

Frequent testing enhances both short-term and long-term learning and encourages students to study continuously throughout the semester. Assessments come in many forms, including quizzes, class presentations, and critiques. As previously mentioned, cumulative content tests—exams that include what has been mastered along with new material—are more effective than non-overlapping assessments of separate content.

### 9. Provide timely feedback.

Frequent assessments not only measure *how much* students are learning, but also reveal precisely *what* they are learn-

ing. If testing shows that there are portions of the material that students haven't learned—or haven't learned well—those portions can be retaught, perhaps in a different way. Professors can correct misunderstood material before it has become ingrained in a student's mind. If repeated testing is used as feedback, it can lead to better teaching.


Sometimes “erroneous learning” is a side effect of the testing, since testing can lead to long-term retention of misconceptions. On open-ended questions, the constructed response that appears to be reasonable tends to be remembered. On a multiple-choice test, the incorrect answers can be learned instead of the correct ones. This side effect also can be reduced with timely, relevant feedback.

It's an enormous mistake to give students their corrected tests and allow them to glance at their results only briefly before turning the papers back in. Students should be able to keep these assessments so they can review their past errors—and retain the *right* answers over the long term.

### Use It, It's Yours

Dale Carnegie taught us that if we want to remember names, we can't simply hear them repeated; we must *say* them often. Mark Twain taught us how to expand our vocabularies: “Use a new word correctly three times, and it's yours.” Similarly, it's a generally held belief that people learn a language more easily if they immerse themselves in it and speak it daily, instead of just reading a textbook. Testing has the same effect—it encourages long-term retention of information.

Unfortunately, in many classroom situations, testing often is viewed as a nuisance to both faculty and students that takes away from instruction time. The typical college paradigm promotes minimal testing—usually just a midterm and a final—and students often put off studying until the last minute. They obtain better grades than they would have if they hadn't studied at all, and they feel confident that they've mastered the subject matter. However, these are superficial, short-term gains, and they come at the expense of long-term learning and retention.

For true learning, it's better for professors to test early, test often—and test everything. As the term progresses, faculty should treat each test like a practice final. For students, that kind of active practice will make them letter-perfect. 

Lawrence M. Rudner is vice president for research at the Graduate Management Admission Council in McLean, Virginia, and a visiting professor teaching statistics for EMBA students at the Goethe School of Business in Frankfurt, Germany.



# Testing, 1... 2....

By using two approaches to testing—a standardized test and a homegrown core concept test—business schools can draw a more complete picture of student learning.

by Subir Bandyopadhyay and Anna Rominger

When business schools develop their learning assessment plans, formal testing of students usually plays a significant role. But they face a common dilemma: Should they rely on a standardized test such as the Major Field Test in Business (MFT) developed by the Educational Testing Service, or a core concept test developed by their own faculty? Standardized tests offer ease of use and better external validity, but they offer limited benchmarking and customization options. Homegrown tests, on the other hand, are more

flexible and more in tune with each program's unique curriculum but require a significant allocation of money and faculty time.

At the School of Business and Economics at Indiana University Northwest (IUN), our faculty wanted to achieve the most cost-effective plan that would provide the most valuable insights into student learning. In 2007, our assessment committee began analyzing the relative merits of the MFT and the school's own core concept test. Our faculty discovered that they can achieve the best results by using both methods for assessment—and we believe other schools can learn from our experience.

### The MFT

**Pros:** *Easy to use, measures overall student performance*

**Cons:** *Doesn't offer comparable data, doesn't identify individual areas of weakness*

The MFT is designed to assess the knowledge of business students in core business areas such as accounting, economics, finance, international business, and business law. But while it helps faculty identify functional areas where students need more curricular development, the MFT also has three significant limitations.

First, the MFT is “normed”—that is, it compares students’ scores only to those of other test takers in that semester. For that reason, we cannot compare how well students performed this semester to how well they performed last semester. Second, the MFT reports scores in terms of percentiles, not in terms of questions answered correctly. For example, if students are in the 90th percentile, it does not mean that they answered 90 percent of the questions correctly, only that they performed better than 90 percent of that round’s group of test takers. Finally, the MFT does not report the functional area specific scores for each student, so it’s impossible to analyze their strengths and weaknesses in these areas.

### The Homegrown Test

**Pros:** *Makes comparisons possible, tests performance in any core concept*

**Cons:** *Expensive to implement, time-consuming*

A homegrown core concept test can overcome many of the limitations of the MFT. For example, the test that faculty designed for IUN is not normed, and it provides scores for each student in each functional area. For this reason, longitudinal comparisons of student scores can measure the reliability of the test itself. That is, if our faculty implement an intervention strategy in a functional area in a semester—say, for instance, they add a new simulation game to the core course in finance—they can measure its effectiveness by comparing the scores before and after the intervention.

Also, IUN’s test is flexible enough to test students on any core area. For instance, the MFT does not test students in ethics and operations management, two core areas we identify in our list of learning goals, but our own test does.

Despite the advantages of a homegrown test, schools may encounter faculty resistance to implementing one because it requires such a huge time commitment. Our faculty spend considerable time writing, editing, refining, piloting, and revising test questions. To win faculty over, administrators must clearly communicate how important the test is to the assurance of learning process. It helps to identify individuals who will be responsible for handling and maintaining the data, and even to appoint an “assessment captain” to champion the assessment process.

It also helps if schools encourage faculty who contribute to the design and implementation of the test by providing more opportunities for development. Providing a wider

## IMPLEMENTING THE IN-HOUSE TEST

<i>Date of test administration</i>	<b>Fall 2007</b>	<b>Summer 2008</b>	<b>Spring 2009</b>	<b>Summer 2009</b>
<i>Average percent of correct answers</i>	51.6	50.7	54.4	59.3
<i>Percentage of course grade in the capstone course</i>	0	0	10	20
<i>Type of pre-test intervention</i>	No pre-test intervention	Dean speaks with students about test’s importance	Instructor talks to students about the test, and sample questions are made available	Instructor talks to students about the test, and sample questions are made available

**Student performance on an in-house assessment test improved after faculty at the Indiana University Northwest’s School of Business and Economics implemented interventions to better inform students about and prepare them for the test.**

“With a hybrid approach, schools can capitalize on the merits of the MFT and a homegrown model, while mitigating their shortcomings.”

range of these opportunities might be difficult for schools with constrained finances, but even schools with tight budgets may find that the benefits a homegrown test brings to the teaching and learning process outweigh its cost.

### Adopting the Hybrid Approach

IUN's faculty have found that the best possible strategy, if time and budget allow, is to administer both tests. By keeping the following suggestions in mind, schools can capitalize on the merits of the MFT and a homegrown model, while mitigating their shortcomings:

**Don't overtest.** At IUN, we require all students to take one of the two tests, but no single student is asked to take both tests.

**Secure administrative support for a homegrown assessment tool.** At IUN, after our assessment committee introduced its proposal for the new core concept test, the entire faculty approved it. At that point, our dean sent a clear signal to faculty members about its importance to the assurance of learning program and urged all faculty members to help develop our test question bank.

**Secure faculty contributions from all functional areas.** Our faculty helped us develop a test bank of more than 700 questions for the BS program and more than 600 questions for the MBA program. In many instances, faculty members teaching the same course jointly developed a test bank of questions for that course.

Faculty members from different functional areas such as

## European Views on Assessment

No matter how culturally diverse their student bodies may be, most U.S. business schools can apply their assessment plans under two assumptions—primarily, that their language of choice is English and that their programs operate in a largely American context. That's not necessarily the case for schools in Europe, where assessment is complicated by the vast cultural, social, and behavioral dissimilarities among students and faculty.

For instance, multiple-choice questionnaires are common in the U.S., but they are not the norm for many students from outside the U.S. system, says Sandrine Ricard, vice president at the Monaco Business School at the International University of Monaco. “We have used the Educational Testing Service's Major Field

Test in Business for years. But given the cultural diversity of our student body, the test can't measure the whole set of learning outcomes for our students,” she says.

For that reason, IUM faculty rely on a variety of social and behavioral approaches to assessment. Ricard emphasizes that the final measure of student learning comes down to how graduates perform in the workplace. Through companies' updates on students' on-the-job performance, IUM faculty assess how well graduates have translated their educations to their careers.

Erasmus University's Rotterdam School of Management in The Netherlands also takes cultural diversity into account in its assessment activities. RSM's MBA program serves more than 120 students from 50 differ-

ent countries, which makes multiple and diverse avenues to assessment a must, says Diane Bevelander, associate dean of MBA programs.

In addition to traditional testing, RSM faculty rely on the following multifaceted strategies that are integrated throughout the MBA program:

**Self-assessment.** At the start of the MBA program, students complete an assignment that their professor grades and returns. Afterward, they are asked whether they think the professor's evaluation is fair. At semester's end, they are asked to re-evaluate their work on the same assignment.

“At first, students will say, ‘Why did the professor give me a seven out of ten? I should have gotten a nine,’” says Bevelander. “When they return to that assignment at the end of the

program, they realize how much they have learned.”

**Evaluation of feedback.** RSM students regularly give feedback to their peers, but throughout the program, students are critiqued on how helpful their feedback is and how much its quality improves over time, as a measure of their knowledge and communication skills.

**Evaluation of problem-solving skills.** RSM has been experimenting with “critical incident logs,” where students write about their responses to problems they have faced. “We compare their first logs to their last,” says Bevelander. “At first, we find that students often view the solution to a problem as someone else's responsibility. In their last, we evaluate how well they've learned to think of multiple solutions and under-

marketing, economics, and finance collaborated to prepare the test banks for multidisciplinary areas such as international business. Today, our core concept test comprises 120 questions—the same number as the MFT.

**Motivate students to do their best.** We have built these tests into our capstone course, the last course our students take. It's a time when students suffer from "test fatigue," and they often don't understand the importance of one more test that isn't related to any single course. To circumvent this problem, we used multiple strategies:

- Starting in summer 2008, our dean began to talk to undergraduates about the importance of the test to the school and the students.

- At the start of the fall 2008 semester, the instructor of

the capstone course announced the spring 2009 test date and informed students regularly about the test as the date approached.

- In spring 2009, the instructor provided sample questions to students to familiarize them with the test's focus and format.

- We increased the weight of the test in each student's total grade in the capstone course, from 0 percent in fall 2007 and summer 2008, to 10 percent in spring 2009, and finally to 20 percent in summer 2009.

- The instructor of our capstone course meets with every student who takes our core concept test to provide feedback on the test results. That feedback can serve as a strong motivator for students, who appreciate this attention to their

stand why others might think differently than they do."

**Evaluation of personal networks.** Several times a year, the school creates a computerized map of students' personal and professional networks. The map will show, for example, whether a Japanese student interacts only with other Japanese students. Once the student is aware of the gaps in his network, he can work to diversify it.

**Faculty and course evaluations.** On faculty evaluations, students are also asked to rate their own performance in their courses, including whether they completed all readings and assignments and how much they studied.

**Personal essays and presentations.** After RSM's MBA students complete major projects, such as case studies or international travel, they must write essays, develop

videos, or create PowerPoint presentations to demonstrate the knowledge they obtained or their understanding of a core issue.

**Customization.** RSM also makes assessment student-specific. For example, MBA students from countries where speaking out in class is discouraged must strengthen their class participation skills; they are evaluated at program's end on how well they've learned to add value to class discussion. Students are evaluated on other skills such as self-management, teamwork, critical thinking, and theoretical application, depending on their personal strengths and weaknesses.

**Simulations.** This year, as part of a sustainability course, RSM required students to take part in a three-hour simulation in which a company faces an environ-

mental problem. During the game, many students made short-term decisions that caused irreparable harm to the simulated environment. "Many were horrified at what they had done and wondered why they didn't think about long-term consequences," says Bevelander. The school plans to have students play the same game again next semester to measure how far their decision making has evolved.

**Internet feedback.** The school may soon have its professors provide feedback on student essays via Internet-based audio files. Three faculty members already are recording and uploading verbal feedback to students on Blackboard, and the school hopes other faculty will do the same, says Bevelander. Verbal responses take less time than written responses, and

students can listen to faculty speak as they go through a paper point by point. "Students appreciate the more personalized approach," Bevelander adds.

Integrating these assessment activities into the program would be more difficult if not for the relatively small size of the school's student body, Bevelander admits. But when these tools are integrated into courses, they do more than account for cultural differences, she says. They also supply faculty with information about students' functional knowledge, critical thinking, communication skills, and behavioral responses that no multiple-choice test can provide. That information, she adds, can help professors make their teaching more effective—and make their jobs easier in the long run.

“ The instructor meets with every student to provide feedback on test results. That feedback can serve as a strong motivator for students, who appreciate the attention to their learning process and development.

learning process and development.

After we took these steps, our undergraduates' performance in the core concept test improved over its last three administrations, as shown in the table on page 35. The school plans to continue these interventions for future tests as well. Interestingly, our faculty's core concept test remained unchanged in the last three administrations, which suggests that the improvements in scores are principally due to our interventions.

### Continuous Improvement


The School of Business and Economics also made changes to its curriculum in response to students' performance on the tests. Our faculty discovered that students traditionally do better in core areas such as marketing and management than in areas such as accounting, finance, international business, and information systems. The school has addressed this issue in several ways:

- The addition of an elective international course to the program. Faculty also are considering adding a required international business course to our core curriculum.
- The addition of preparatory classes and tutoring in accounting and finance.
- A requirement for all students to take preparatory classes in information systems from the computer sciences department.
- A test of all students' IT competence in the 300-level MIS course, which encourages students to maximize their learning in this area.

Our faculty also will continuously evaluate the validity and reliability of our testing procedure. In the coming months, they will examine test scores over multiple test-



ing periods, as well as analyze student responses on the test to check the validity and reliability of each question. They will compare scores between the MFT and the core concept test and re-evaluate the effectiveness of our intervention strategies.

The preliminary data our faculty have collected so far indicates that offering *either* the MFT *or* a test designed in-house provides an incomplete picture of student performance. A hybrid approach that strikes a strong balance between both options intensifies the strengths of each, mitigates their limitations, and maximizes the effectiveness of our overall assessment plan. 

Subir Bandyopadhyay is professor of marketing and chairman of the assurance of learning initiative and Anna Rominger is dean at the Indiana University Northwest's School of Business & Economics in Gary.

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