



Continuous Development Model

Part I of II

Douglas N. Ross and Douglas M. Sanford, Jr.

This is a two part article that presents a continuous development model that uses both results from a nationally normed test of substantive business knowledge and a survey of student attitudes towards the test. The model enables Towson University's College of Business and Economics (an AACSB internationally accredited undergraduate business college) to improve curriculum, re-focus teaching and enhance student motivation for deep learning. The findings suggest that the survey of student attitudes greatly refines recommendations for improving the program and instruction. In addition, the test itself can be an instrument for improving student motivation for learning throughout the program.

This article describes an assessment process that uses as one component a nationally-normed test of substantive business knowledge to inform curriculum changes and improve student performance. The test is one part of a larger assessment and development process of an undergraduate program created at Towson University's College of Business and Economics (CBE). The article reports on CBE's results from both the test and a survey of student attitudes towards the test. The analysis indicates that both test and survey results independently contribute to the assessment process with implications for curriculum, teaching and methods to improve student motivation throughout the program.

Assessment has proved a cornerstone in the accreditation process. Now re-named The Association to Advance Collegiate Schools of Business (AACSB), AACSB international accreditation is the most prestigious international certification for colleges of business. Of the approximately 1200 colleges and schools of business in the United States, 387

are accredited. Most, about 85%—349—are accredited at both graduate and undergraduate levels, 7% at graduate only and 8% or 33 schools are, like CBE, accredited solely as undergraduate colleges. While not all the schools using the Major Fields Test are accredited, nearly all have graduate business programs.

Ideally, the learning environment will facilitate student motivation to learn, which is a function of both an appreciation of the value of learning and the creation of a community of people committed to learning.

Part one of this article outlines the CBE program continuous development model, which was developed to meet AACSB international and university requirements. Part two presents survey results, and discusses a framework for using the test and survey results to improve curriculum, re-focus teaching emphasis and enhance student motivation to learn.

The CBE Continuous Development Model
The continuous development model draws on program assessment and business planning models. For academic programs, assessment includes needs assessment, establishment of objectives, evaluation selection, curriculum development, instructional method selection and instruction and program evaluation (Mundrake, 2000). Assessment aims to improve program quality, so that evaluation feeds back to the other steps, ideally leading to a virtual cycle that leads to better evaluations (Motwani, 1995). Research on program assessment has shown that planned, systematic



assessment with feedback loops may be effective in directing efforts to improve academic programs (AAHE, 1997; Chaffee, 1997; Maki, 2002; Rucker, 2000).

Evaluations of students provide feedback that enables them to understand their strengths and weaknesses, and motivates them to focus their efforts towards improvement.

Business planning models usually include creation of vision mission statements, development of organizational objectives, evaluation of internal and external environments, assessment of strategic options, selection of a strategy, implementation and evaluation. The evaluation step involves comparing organizational performance to stated goals, in light of environmental conditions. Managers then are held responsible for improving overall performance. Business researchers have documented cases where systematic planning improves organizational performance (Hunger and Whelan, 2002; Thompson and Strickland, 2001; Hitt, Ireland, Hoskisson, 2001).

CBE's efforts also drew upon deep learning research to anchor its framework in a learning centered context (Chaffee, 1997; Huba and Freed, 2000; Marchese, 1997; Suskie, 2001). Three critical aspects—constant feedback, reflection on the feedback and using the feedback in the next cycle of activity—were incorporated. Application of these concepts to a model is discussed below.

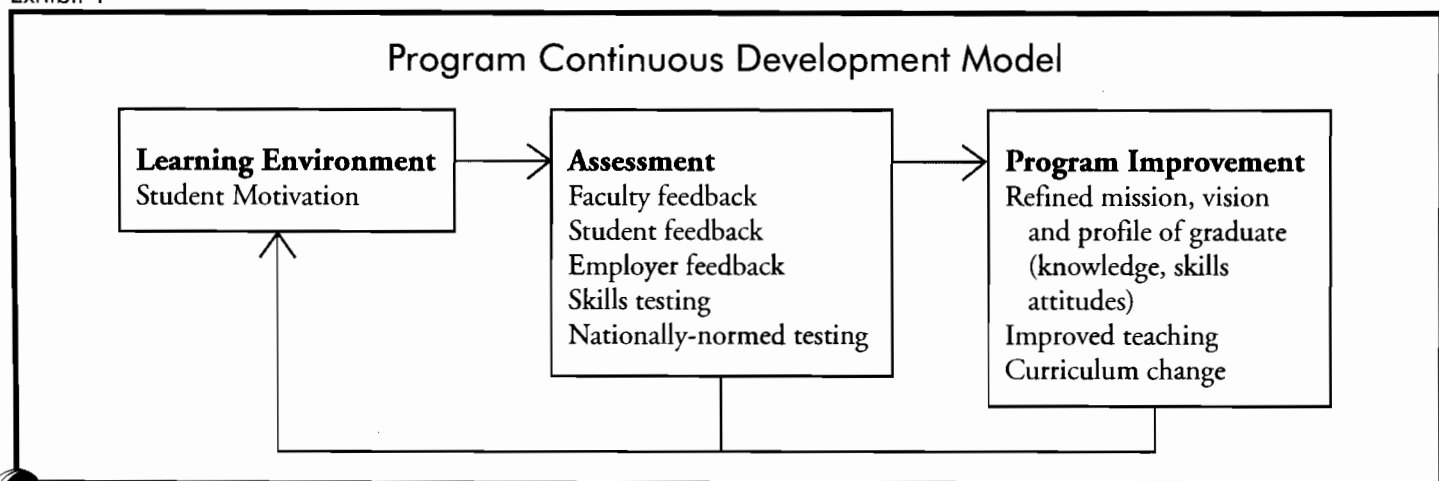
Exhibit 1 summarizes the flow of activities in the assessment process. As indicated by the far right box in Exhibit 1, program improvement is the primary outcome. It includes the goals contained in the CBE vision, mission and profile of a graduate, improved teaching and curriculum change. The mission, vision and profile represent the goals that determine the content taught in courses, the direction of program development, including certificate programs, and the workload agreements negotiated between faculty and administration. Teaching may be improved for better student retention of core material and appropriate focus. Curriculum change involves new degree requirements including required courses, projects and exit exam.

The middle box in Exhibit 1 indicates the assessments, or data collection procedures that indicate current program performance. Faculty complete surveys that provide feedback on satisfaction with the work environment. Students complete surveys that provide feedback on satisfaction with their education and administration. Employers who hire students as interns complete surveys indicating their satisfaction with the students. Embedded in the curriculum are two required courses. In one, students are tested for business skills. As part of the other, students take the Major Field Test of Business.

The left box of Exhibit 1 indicates the student learning environment including the physical infrastructure, activities in and out of class, access to library and internet resources, and interpersonal interactions. Ideally, the learning environment will facilitate student motivation to learn, which is a function of both an appreciation of the value of learning and the creation of a community of people committed to learning.

CBE's assessment process incorporates a system for collecting assessment

Exhibit 1



Profile of a CBE Graduate

The KSAs

The College of Business and Economics (CBE) understands the need for its graduates to be broad-based and ready to perform immediately upon entering the job market, both as individuals and in teams. Therefore, its curriculum contains concrete, measurable and attainable objectives throughout. As a result, each CBE graduate is expected to perform successfully, as both an individual and a team member, in the following areas of Knowledge, Skills and Attitudes (KSAs):

Communication—(written, spoken, graphic and electronic)

- Write articulate, persuasive and influential business reports, proposals, letters;
- Make articulate, persuasive and influential individual and team presentations;
- Develop graphic, spreadsheet and financial analysis support for position taken;
- Display presentation skills;
- Generate appropriate visual aids;
- Use correct written structures, spelling, grammar and organization; and
- Negotiate effectively.

Thinking—(critical, creative and integrated)

- Use problem-solving techniques;
- Use adaptable, flexible thinking;
- Use critical thinking to produce comprehensive, supported, integrated conclusions;
- Use creative thinking to produce ideas;
- Distinguish (1) fact from opinion and (2) critical from noncritical information;

- Develop several workable solutions to problems;
- Show common sense; and
- Demonstrate continuous learning (learning to learn).

Technology

- Use software for writing, spreadsheets, databases, presentation and decision support;
- Demonstrate self-taught use of a second software package; and
- Use e-mail, World Wide Web, Internet and other contemporary electronic services.

Ethics and Values

- Consistently accept responsibility for one's own actions;
- Display ethical conduct and honor-system behavior;
- Apply ethics in reaching business recommendations;
- Promote benefits of good ethical behavior while recognizing practical ethical challenges; and
- Display a win-win attitude.

Accredited Business Content

- Know, apply and integrate the content in one's major;
- Apply and integrate accumulated cross-discipline concepts; and
- Value the relevance of each business discipline in today's business custom.

Diversity—(international and demographic)

- Apply international concepts and contemporary issues to business situations;
- Apply domestic diversity concepts and contemporary issues to business situations;
- Show sensitivity to other's views, values and business customs;
- Discuss relevant global business developments; and

- Interact as a business professional with people of other cultures and sub-cultures.

Practical Excellence

- Demonstrate effective team skills;
- Display professional business behavior and appearance;
- Network with professionals;
- Manage time and tasks;
- Use estimates, analogies and examples; and
- Demonstrate development of one's self-esteem and can-do attitude.

Leadership, Entrepreneurship and Community Service

- Demonstrate group leadership;
- Describe one's own risk-taking-profile;

- Differentiate between a leader, a manager and an entrepreneur;
- Perform community service; and
- Foster leadership potential in self and others.

Job Experience and Career Development

- Show evidence of a quality, mentored, reflective professional experience;
- Organize a persuasive, informative resume;
- Create a portfolio that shows evidence of employability;
- Demonstrate effective job search and interview skills; and
- Assume responsibility for one's own career goal-setting and life-long learning.

data and incorporating it into programs and the student-learning environment. This article focuses only on the logical flows between the boxes of Exhibit 1. To ensure that assessment data collected in the middle box is used by key decision makers, and therefore becomes incorporated in programs, the college dean, the college council and influential college-level curriculum committees are involved in data collection and interpretation. The data are also shared widely among all faculty and depart-

ments, each of which may use the data to support program offerings and other initiatives. One recent development in response to student feedback has been the creation of a CBE Student Advising Center.

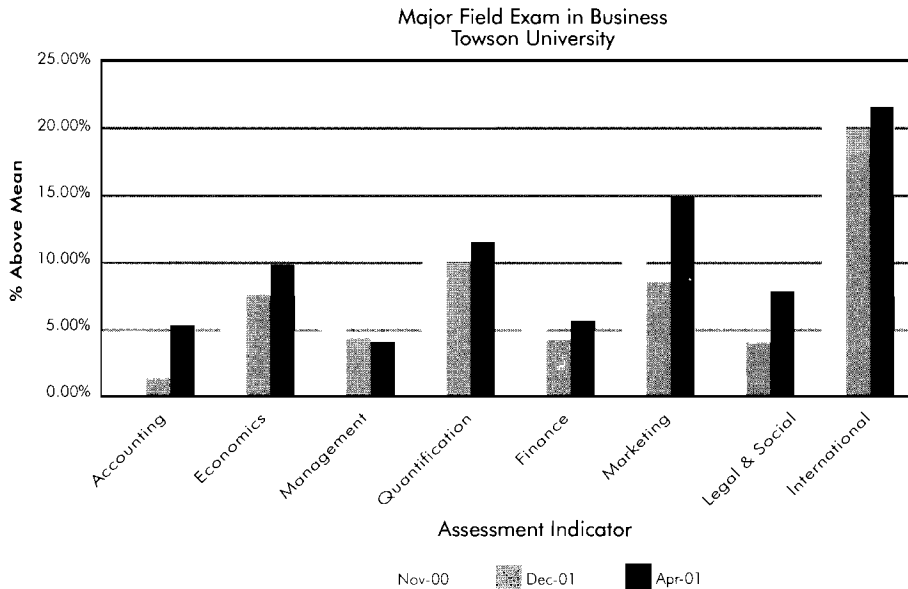
The assessment process itself also improves learning in a number of ways. It signals CBE's commitment to understanding and improving the students' experience. Evaluations of students provide feedback that enables them to understand their strengths and weaknesses, and motivates them

to focus their efforts towards improvement.

The process has led to a number of recent innovations. Input from the Board of Advisors as well as faculty concern over lack of basic communication skills led to the development of cornerstone and internship courses. In the cornerstone course, students conduct a skills self-assessment. Faculty then assess students' general skills in such areas as proficiency in business writing and communi-

Exhibit 3

ETS Achievement Exam Results



cations and technology. The internship includes skills self-assessment by students and employer evaluations of students' knowledge, skills and attitudes. As part of the internship, students complete a course activity guide and seminars that relate to elements in the Profile of a Graduate (Exhibit 2).

Department-level efforts focus on curriculum change, KSA (Knowledge, Skills and Attitudes) development, course consistency among various sections, and preparing an annual majors assessment report to the University Assessment Council. These efforts require identifying priority learning outcomes, assessment methods, stakeholder involvement and the use of assessment results.

CBE and the Major Fields Test
To facilitate assessment, CBE adopted a learning outcomes test for substantive knowledge. Guides set by the CBE were that the test should not

pose an unreasonable barrier to graduation and that faculty should not have to teach to the test. The aim is threefold: first, break down the silos of the disciplines and stress the interconnectivity of knowledge; second, encourage student retention and deep learning of material and concepts so as to build problem solving skills; and third, enhance the range of skills as set out in the Profile of a Graduate. The test was instituted in the fall 2000 semester.

Assessment aims to improve program quality, so that evaluation feeds back to the other steps, ideally leading to a virtual cycle that leads to better performance.

The test was designed by the Educational Testing Service (ETS). The Business II Major Fields Test is currently used by about 388 business schools across the U.S. and Canada, which provides comparabil-

ity to many colleges, fulfills AACSB international requirements relating to continuous reporting of learning outcomes, and is relatively straightforward to administer. The test consists of 120 multiple-choice questions that cover a range of business disciplines. It covers general knowledge that any undergraduate business student should know, but that is too broad in scope to be covered in one course.

The Management Department administers the Major Fields Test as a part of the capstone business policy course Business Strategy and Policy. A 10% portion of a student's grade is accounted for by the test. To overcome students' resistance to the test, incoming students are told upon entering the business concentration that they will be taking the test in the capstone course. About 250 seniors take the test each semester. Reports for concentrations and majors provide quantitative data for department assessment and curriculum change.

Scores for three semesters of the test are summarized in Exhibit 3. On a comparative basis, in no area does CBE drop below the mean score for all 388 schools whose students take the same test. In fact, Towson's overall score is significantly greater than the mean for the sample of schools taking the test ($p < .01$). CBE/Towson ranks from 105th to 168th of 388 schools. Scores for each discipline area vary from about 1% to over 20% over the mean. From November 2000 to April 2001, scores have remained fairly consistent. CBE students have a relatively higher score in the international area, perhaps reflecting a core course requirement.

It is possible to conclude that the above results mark a reasonable mea-

sure of student performance; however, student participation extended beyond their taking the test. The test experience encouraged them to review a broad array of material learned in core courses and see how their performance compared with others in the CBE and nationally. To understand how students view the test and how CBE can best use it, we solicited their attitudes towards test.

In the next issue of *AAF*, Part II of this article will discuss a framework for using the test and survey results to improve curriculum, re-focus teaching emphasis and enhance student motivation to learn.

A bibliography is available by emailing the authors.

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Cutting Edge Continued from page 11

best interests of our students. About six years ago, we were forced to take a closer look, and began asking the student—and potential student—what they wanted, what was in their best interests, as the students, the customers, saw them. And they told us. And we began then to tailor our programs to meet the wishes of our students. We've improved student services tremendously and, along with that, our bottom line. This is one thing—a most important factor—insuring our survival.

When Excelsior started out we had the best interests of our students, our customers, at heart, and built programs to serve those interests. The only problem was, we staff members determined what the customer's best interests were, and built accordingly.

So I have mentioned a number of features I believe that have created

or contributed to our survival, initial support of the Board of Regents, the continuing support of a well credentialed and nationally recognized and supportive faculty, the support and assistance of accrediting bodies in the main, and the care and support of our staff, our customers, and our faculty, along with the close monitoring of our finances. I should mention finally I believe that Excelsior College thrives in a spirit of innovation and change. One should not work at Excelsior College if you are troubled by ambiguity or by threatened change. We have had tremendous changes over the years and do so on a day to day, month by month basis. The college's support, success and indeed its longevity, that is, its survival, depends on the creativity of the staff and the recognition among us all—of staff, faculty, and trustees alike—that change is a necessary part of any successful equation.

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Continuous Development Model

Part II of II

Douglas N. Ross and Douglas M. Sanford, Jr.

This two part article discusses a continuous development model at Towson University that uses results from a nationally normed test of substantive business knowledge and a survey of student attitudes towards the test. Part I (AAF v12, n1) discussed the assessment process as part of the Continuous Development Model. Part II discusses the survey and its impact on the program and on students.—Ed

tudents' feedback regarding the College of Business and Economics (CBE) vision and the Educational Testing Services (ETS) test process were formally solicited in a survey that contained both quantitatively scaled and open-ended questions. The data show that students do care about having a degree from the "premier undergraduate applied business school in the mid-Atlantic region" (4.39 out of 5); that is, their school's reputation matters to them. To a lesser extent, there were many who thought that benchmarking against peer institutions could lead to

program improvement (3.70 out of 5). Exhibit 3 shows the quantitatively scaled questions. Exhibit 4 summarizes results of the survey for two class sections in fall 2001.

Not all students took the test seriously, nor did they consistently see any need to study differently or change their study habits from earlier years. While the mean study time spent preparing for the test was 2.84 hours, it ranged widely with a mode of zero hours. The study habits may reflect acceptance of the nature of the test, as students are told that the test measures what every graduate should know about business and that last minute study is therefore not likely to have much effect on their scores.

From the correlation matrix on Exhibit 4, questions 2 and 4 were positively correlated, and questions 2 and 6 and 4 and 6 were negatively correlated (all $p < .05$). This suggests that the more students thought that the test could improve the CBE program, the more they took the test seriously

Exhibit 3

Items from the CBE Student Satisfaction Survey	
Circle one number on the scale or fill in the blank	
1. I agree with the Towson/CBE vision to be "the premier undergraduate applied business school in the mid-Atlantic region."	no...1 2 3 4 5...yes
2. I think that benchmarking CBE students—that is comparing my performance on the Major Fields Test with other U. S. business schools' students—could lead to improvements in the CBE program.	no...1 2 3 4 5...yes
3. I think that graduating from an AACSB accredited business school is important.	no...1 2 3 4 5...yes
4. I took the test seriously.	no...1 2 3 4 5...yes
5. I would have studied differently in my core business classes had I known a comprehensive test was coming.	no...1 2 3 4 5...yes
6. I could have studied/prepared more for the test.	no...1 2 3 4 5...yes
7. I think that the Major Fields Test helped add insights to my own estimation of my knowledge that I might not have gotten otherwise.	no...1 2 3 4 5...yes
8. I spent _____ hours preparing/studying for this test.	

Exhibit 4

CBE Student Satisfaction Survey Result

Mean Standard Correlation Matrix

Question	Deviation									
1. Agree with vision	4.39	0.77	1.00							
2. Benchmarking leads to improvements in the CBE program	3.70	1.16	-0.10	1.00						
3. Importance of accreditation	4.26	1.01	-0.02	-0.12	1.00					
4. Took test seriously	3.55	1.27	-0.13	0.31	0.13	1.00				
5. Would have studied differently had I known test was comin	3.26	1.58	0.13	0.08	-0.19	-0.02	1.00			
6. Could have studied more	3.17	1.43	0.08	-0.35	-0.06	-0.30	0.19	1.00		
7. Test added insights	2.66	1.29	0.00	0.24	-0.08	0.10	0.21	0.01	1.00	
8. Time spent preparing for test	2.84	2.91	0.06	0.14	0.16	0.15	0.20	0.08	-0.26	1.00

sample n=46

and the more they studied. In addition, the less that students took the test seriously, the less they studied.

This pattern suggests that motivated students will value the test as a benchmark, take the test seriously and prepare as much as possible. The challenge to CBE is therefore to communicate to students the importance of the test. If they realize the test's value, they prepare more for it, perhaps even to the extent of retaining material learned throughout the program.

The survey also posed three open-ended questions: 1) the most beneficial aspects of the Major Fields Test; 2) the most troublesome aspects of the Major Fields Test; and 3) advice you would give to underclass students who will take this test in the future. Exhibit 5 summarizes student responses to the most beneficial aspects of the test. Most students indicated an appreciation for measuring their level of knowledge; however, some responses suggest a need for

more serious evaluation of programs and faculty performance, particularly in the core courses.

Open ended responses in Exhibit 6, the most troublesome aspect of the test, tended to cluster around a few themes. First, that material on the test was not covered; this may

imply a need for more attention to transfer students. Second, the time lag between the core courses and the test; this suggests a need for review/ refresher courses for returning students. Third, the material covered on the test was not in the students' major, and therefore not a fair assess-

Exhibit 5

The most beneficial aspects of the Major Fields Test are:

Society-College Level

- To see where you and the college stand on your education.
- Tests the general knowledge you should attain from a college education in business.
- Comparison to students from other schools around the U.S.; it raises the bar.
- Lets me compare my progress to everyone else taking the exam.
- Helps me evaluate whether I understand the business world.

Department-Faculty Level

- Realizing how poor of a job my professor did.
- Made students realize they didn't learn anything.
- Gives large overview of what has been taught.
- It allowed me the opportunity to see what I know and whether or not I retained information.
- Makes me want to work harder to become more knowledgeable.
- Shows what you have/have not learned.
- A broad overview of everything you learned in four years of college.
- Shows some of the basics that you need to know.
- Summarizes the basic issues.

Exhibit 6

The most troublesome aspects of the Major Fields Test are:

Test not Linked with Teaching/Learning in Core Courses

- It does not take into account returning students, who took a particular course several years ago.
- It does not take into account that a course may not have been taught properly in accordance with the Major Fields curriculum.
- Some of the topics were never covered in Towson.
- Make sure these specific topics are part of CORE...exams in TU.
- Didn't learn some of the information on the test.
- I did not take all the required classes before taking the test, some stuff I did not learn in class.

Time Lag Between Course and Test/Non-Major Related to Topics

- Most questions were about classes that I had taken years ago.
- Needs to have a better preparation.
- Accounting/Finance—areas I haven't studied in 3 years. Very detailed exam for covering 3 years study. The fact that most of us didn't know we had to take it and therefore didn't keep our study materials from three to four years ago and couldn't study properly.
- Impossible to remember 3 years of business education for one test.

Test Content Too Specific for Non-Majors in a Field

- I believe that it should focus more on our concentration.
- Being a management major I was not prepared for so many accounting problems.
- Accounting, Finance and Computer questions. This seemed like half the test and I am not a Finance or C.S. major. I am a management major. I've only taken one finance and one computer class.
- Questions were too specific for 4 years of education. It should be based more concepts and theory. It really doesn't represent our abilities as Business Professionals.
- It needs to be shortened, I'm not sure being accredited really makes a difference to employers, but maybe to grad school.

sment of their abilities; this observation also suggests a need for refresher courses so that all students retain the fundamentals of a business education. Fourth, a few students mentioned that they had yet to take all the required courses before taking the test; this suggests a procedural lapse and the need to monitor special permits more closely.

Exhibit 7 shows advice to underclassmen who will take the test. The most common student observation is the need to commit material learned in the core courses to long-term memory. There appeared to be a division of opinion between the "studying may help a little" comments and "tell the sophomores to prepare and take all your classes seriously".

Not all students took the test seriously, nor did they consistently see any need to study differently or change their study habits from earlier years.

The Validity of the Nationally-Normed Test

Some students and researchers argue that the tests cover material that was taught too long ago, lacks relevance to their major or is not a true measure of their business knowledge. Therefore, test performance would be due to factors such as ability to recall old, irrelevant knowledge and guess well on test items, which are not associated with true measures of academic performance and student learning. To explore these claims, we analyzed student performance in three capstone

course sections in fall 2001. The results suggest that this criticism is incorrect.

The validity of the ETS test as an indicator of student knowledge, at least for large samples of students, is demonstrated by the significantly positive correlation with student performance on other components of the capstone course. In these sections, students had the same professor, syllabus, and text, and were graded on the ETS test, two written case analyses, two essay exams, a midterm, a final and participation in class. Students demonstrated the patterns of achievement shown in Exhibit 8.

Overall, the test is significantly correlated with the non-test portion of the raw score for student performance in the course ($r=.35$, $p<.01$). Interestingly, the correlation between the test and the first case assignment was insignificant, but was highly significant for Case 2, even though the assignments have similar structure and require similar skills. (Case 1 was a group assignment, which may explain this pattern.) Similarly, the correlation between the test score and the midterm was lower than the correlation with the final. The overall pattern suggests that the test correlates more strongly with later elements of the course than with elements that occur earlier.

Conclusions: Framework for Improving Curriculum, Teaching and Student Motivation

As a component of a comprehensive development and assessment process, the College of Business and Economics administers a standardized test of basic business knowledge and, in addition to the test results, surveys student attitudes towards the test. Analysis of data from both sources

carries implications for curriculum development, teaching and student learning. These implications, which may profitably be viewed in the dynamic context of a continuous improvement cycle, are set forth as benchmarking, feedback, and the importance of motivation for long-term student learning.

Benchmarking

In CBE's continuous development process, a nationally-normed test provides valuable feedback that compares student learning across institutions. The test enables the tracking of

both the effectiveness of curriculum changes over time and student performance in eight areas of business knowledge. One possible measure of teaching effectiveness could be by the change in performance by area. In any event, students appreciated the reality check. While CBE's student performance is above average across the board, it still is not top tier or even outstanding, so there is room for improvement.

Role of Feedback

Student feedback from the survey yields insights beyond the test results.

We use a model for deep learning (Entwistle, 2001; Marchese, 1997; Maki, 2002), which suggests that three steps are critical for both individuals and academic communities in a cycle of learning. They are constant feedback, reflection on the feedback, and incorporation of the feedback in the next cycle of activity (Marchese, 1997).

Constant feedback refers to communications from audiences that are concrete, usable, credible and trustworthy. The survey results suggest concrete changes in curriculum and teaching including upgrading course content, teaching to improve deep learning and motivating students through sharing survey data with underclassmen. Especially for transfer students, efforts are needed to ensure coverage of topics included on the test.

In addition, teaching in core courses might be enhanced to encourage long-term learning. Teaching may include analyzing the derivation of new terms, emphasizing principles and concepts rather than disconnected facts, and evoking emotional responses that allow students to see the relevance of their learning to their own lives (Biggs, 1999; Entwistle, 2001). The test and survey results demonstrate that students were not satisfied with the way they were taught in the core courses.

The survey indicates that students would appreciate being notified about the test early in the program. Such notification can include information about the test, CBE's past performance on the test, and comments by other students about the test, all with the aim of increasing motivation to learn.

Exhibit 7

What advice would you give to a student taking this test?

Prepare Better by Committing Course Content to Long-Term Memory

- I would tell them to try and retain all of the info they learned.
- I would study for this test my junior year and would tell my fellow students who start the business school to think about this test while taking all their business courses.
- Too late come spring. I would like to tell the sophomores to prepare.
- If you took your classes seriously, the test should be no problem. You will not know every question, but the questions are representative of the general knowledge that you should have attained in college.
- There is no true way to study for the exam. Reviewing courses in which you struggled, or have not dealt with in some time is the best strategy.
- Take classes seriously.
- Tell the students about it from the beginning. Save all material.

Study for the Test

- Cover basic knowledge of all subjects. Review all your previous classes.
- Find your old class material. Pull out your descriptive notes from two years ago.
- Start studying now.
- Students taking the test, perhaps in the future as an exit exam should keep their old books and go back and skim through them for relevant information.
- Study finance and accounting. Look at law. Look over the review test more than a couple of times.

Do Not Cram, But Keep Positive

- It is a good idea, but it is not likely that you will remember the detailed questions asked. Not really a way to study for it.
- Studying helps a little, but it may stress you out more than it helps. I think I worried too much because it was 10% of my grade. You don't really have enough time to try to study all the things you learned over the past four years.
- Hope for the best.
- Study over some things, but not stress over it because it's too much information to reacquaint yourself with.

Test Taking Advice

- Eat something before hand, don't stress over it, and try to relax.
- Get plenty of rest.
- Keep guessing.

Reflection on feedback refers to serious engagement and reflection on the feedback, not either dismissing it or agreeing with it. Reflection involves interpreting the best implications of the data for improvement. At the curriculum level, reflection on feedback may cover “essential functions of meaning-making, action, and commitment to improve” (Marchese, 1997). For teachers, reflection involves a common problem of making sense of student evaluations, looking for patterns and feasible areas of improvement. For students, reflection involves understanding what feedback means. Marchese’s research (1997) suggests that reflection broadens wisdom, sharpens judgment and enhances commitment.

Survey responses show that some students do appreciate being measured against their peers both within the institution and in the nation. Students also appear to appreciate foreknowledge of the test and the need to approach core courses more seriously. Therefore, a major challenge is to increase underclass students’ awareness of the test in order to improve motivation to learn in the core courses. The need for students’ long-term learning may challenge some traditional teaching approaches. Thus, for teachers of core courses, enhanced

instructional methods may be needed to enable deep learning.

Incorporating the feedback in the next cycle of activity refers to changes in behavior and attitudes that result from the feedback cycle. At the curriculum level, curriculum should be improved as a result of the cycle. For teachers, feedback may result in teaching in earlier courses that is retained longer by students and improves their performance on the test. For students, better study habits and, increasingly, improved classroom behavior may result from the feedback.

Faculty can change curriculum requirements to ensure coverage of topics on the test for transfer students and students of all majors. Faculty may change classroom methods to facilitate deep learning by adopting active learning pedagogies. Course content may change.

Motivation for Long-term Learning

Peers talking to peers may be more effective than faculty lectures, especially if the peers doing the talking have already completed the test. Motivation for long-term learning may be enhanced by direct peer-to-peer interaction, through reports, announcements, panel discussions

and honor societies and other clubs. This interaction can take place over a period of months or years, which may deeply affect the way students approach their studies in core courses.

Two bits of advice from students to students particularly attractive to our faculty ears are:

- “If you took your classes seriously, the test should be no problem. You will not know every question, but the questions are representative of the general knowledge that you should have attained in college.”
- “I would study for this test my junior year and would tell my fellow students who start the business school to think about this test while taking all their business courses.”

CBE’s assessment remains a work in progress. Analyses of the data suggest areas for continuous development that, if implemented, should improve program performance and student learning. Future challenges include refining the program, sustaining the organizational commitment to implement compelling recommendations and demonstrating improvement in student learning.

A bibliography is available by emailing the authors.

Exhibit 8

	Test	Case 1	Midterm	Case 2	Participation	Final	Non-test raw score
Test	1.00						
Case 1	-0.02	1.00					
Midterm	0.18	0.13	1.00				
Case 2	0.35	0.21	0.29	1.00			
Participation	0.11	0.22	0.15	0.21	1.00		
Final	0.45	0.18	0.29	0.45	0.23	1.00	
Non-test raw score	0.35	0.48	0.56	0.69	0.67	0.69	1.00

sample n=65

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