

Fall 2004 Embedded Assessment Report

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Introduction

This report shows how the College is directly assessing the learning goals of two degree programs –the B.S. in Business Administration and the B.S. in Accountancy - in the fall 2004 semester. The B.S. in Information Systems and the Master of Business Administration have developed learning goals for their degree programs and will begin collecting course embedded measures in the spring 2005 semester.

Program learning goals are directly assessed with embedded measures in six different courses where students have an opportunity to demonstrate proficiency in the learning goals. The linkage between program learning goals and embedded measures in specific courses is shown in Tables 1 and 2 for the B.S. in Business Administration (BSBA) and the B.S. in Accountancy respectively.

For example, Table 1 indicates that FIN 303 (Financial Management), SOM 306 (Operations Management), and SOM 307 (Data Analysis and Modeling) are courses where data is collected to measure students' problem solving skills (i.e., BSBA general learning goal 2). The material in these three courses provides students with an opportunity to improve their problem solving skills and their performance is measured with exam questions or case analysis.

The Gateway course (BUS 302) provides students with important lessons in building teams and working cooperatively (i.e., BSBA general learning goal 6 in Table 1). However, the Gateway course is not currently collecting data on teamwork activities so the "courses" column is left blank. The College is committed to expanding our embedded assessment program to cover each of the program learning goals extensively. This report documents our efforts during the fall 2004 semester.

Table 3 indicates the type of assignments that faculty selected to measure student achievement in the learning goals. For example, BUS 302, FIN 303, and SOM 306 instructors all used multiple choice exam questions to assess how well students were meeting the course learning goals.

Table 1. Linkage between BSBA Program Learning Goals and Course Embedded Measures

	BSBA Degree Learning Goals	Courses with Corresponding Embedded Measures
General Learning Goals	1. Our graduates have strong written and oral communication skills.	BUS 302, SOM 306, and SOM 307
	2. Our graduates have strong problem solving skills.	FIN 303, SOM 306, and SOM 307
	3. Our graduates have strong critical thinking skills.	BUS 302
	4. Our graduates have an understanding of ethics and social responsibility.	FIN 303
	5. Our graduates have strong information technology skills.	SOM 306 and SOM 307
	6. Our graduates can work effectively in teams.	
Management Specific Learning Goals	1. Our graduates understand the global context of business.	
	2. Our graduates understand the cross-functional and interdisciplinary nature of business problems.	BUS 302
	3. Our graduates understand and can apply basic business concepts.	FIN 303, SOM 306, and SOM 307

Table 2. Linkage between B.S. in Accountancy Program Learning Goals and Course Embedded Measures

	B.S. in Accountancy Degree Learning Goals	Courses with Corresponding Embedded Measures
General Learning Goals	1. Each student shall be able to recognize and analyze ethical problems in practical accounting situations and to select and defend a course of action.	
	2. Each student shall be able to effectively communicate complex accounting concepts both orally and in writing.	ACCT 351 (COM)
	3. Each student shall be able to apply critical thinking skills when analyzing and solving problems.	ACCT 351
Accounting Specific Learning Goals	1. Each student shall have a conceptual understanding of accounting for:	
	• External financial reporting	ACCT 351
	• Managerial applications	
	• Tax planning and preparation	
	• The attest function	
	2. Each student shall be able to apply their conceptual understanding to both structured and unstructured problems in:	
	• External financial reporting	ACCT 351
	• Managerial accounting	
	• Tax planning and preparation	
	• Auditing	
	3. Each student shall be able to research accounting literature for both structured and unstructured problems in:	
	• External financial reporting	ACCT 351
	• Tax planning and preparation	
• Auditing		
4. Each student shall have the necessary knowledge and skills required to sit for a certifying examination (CPA, CMA, or CFM).		

Table 3. Types of Assignments used to Cover Learning Goals

Assignments	Courses with Embedded Measures
Multiple choice exam questions	BUS 302, FIN 303, SOM 306
Essay exam questions	SOM 306
Case analysis	BUS 302, SOM 306, SOM 307, ACCT 351, and ACCT 315 (COM)
Formal presentation	BUS 302

Business 302, Gateway Experience

Business 302 is our "Gateway" course that prepares students for upper-division coursework. It is a required course for all business and accounting majors and must be taken prior to, or concurrently with, the student's first upper-division business core classes. BUS 302 reviews and tests students' knowledge of the lower-division business core (financial and managerial accounting, micro and macroeconomics, business law, and statistics) by integrating and applying concepts from these courses to solve business problems. While the course does not introduce new material from the lower-division business core, it is designed to develop the ability of our students to apply these disciplines in a complex business environment. Students also learn to work in teams, to analyze business cases, to make class presentations, and to write short business memorandums and letters.

Table 4 shows course learning goals, alignment with program learning goals, SKA, and student performance on various course assignments in BUS 302. This data was collected from 11 sections containing 450 students enrolled in BUS 302 during the fall 2004 semester.

Table 4. Learning Goals for BUS 302

Course Learning Goals	Linkage to Program Learning Goals	SKA	Not Good Enough	Good Enough	Very Good
Oral Communication	-Effective Communication	Intro, platform skills, visual aids, clear comm., handling Q&A	2.9%	43.1%	54.0%
Written Communication	-Effective Communication	Focus & audience, organization & flow, clarity & correctness of style, and presentation	5.8%	64.2%	30.0%
Review and Integrate the Lower-division Core	-Critical thinking -Apply cross-functional and discipline-based knowledge	Understand & apply the top 10 concepts from 6 lower-division core classes	14.7%	70.0%	15.3%

The scale in Table 5 was used to classify student performance on each learning goal. The oral communication measure is derived from a formal case presentation in the class. Students work in teams to develop and present a Power Point presentation. Each student must present a portion of the team presentation and is graded individually on her performance. Students are provided with a *Presentation Evaluation Form*, which indicates how the total points are allocated to the various skills, knowledge, and abilities that are required for a formal presentation. This form (among others used in the Gateway course) is extremely important because it helps students understand exactly what is required to meet the course learning goals (e.g., to be a good presenter).

By examining the total points for the presentation, we see that only 2.9% of the students fall into the category “not good enough.” Without information on the allocation of these total points, we cannot determine which SKA are driving the poor performance of these students. However, a substantial number of Gateway students are successful in making formal, oral presentations as 54.0% fall into the category of “very good” while 43.1% are deemed “good enough.” These results may indicate that our students have largely mastered the skills required for formal oral presentations. Alternatively, working in teams may bolster the individual performance of weaker students who receive help from team members to create the Power Point slides (worth 30 points out of 100).

Table 5. Scale for All Measures in Table 4

Performance on SKA	Outcome
Less than 70%	Not good enough
More than 70% but less than 85%	Good enough
85% or more	Very good

The written communication measure in Table 4 comes from an individual writing grade on the case analysis. Each team submits five business cases that are designed to review and integrate the top ten concepts from the lower-division core. The teams receive a content grade and a writing grade for each case. The content grade is the same for all individual team members but the writing grade is specific to the principal writer for a particular case. Students are provided with a *Case Write Up Evaluation Form With Point Allocations*, which indicates how the total points are allocated to the various skills, knowledge, and abilities that are required for a writing assignment.

By examining the total points for the writing grade, we see that 5.8% of the students fall into the category “not good enough.” Without further information we cannot determine which SKA are driving the poor performance of these students. However, we can say that a substantial number of students are successful in creating clearly written case analysis as 30.0% fall into the category of “very good” while 64.2% are deemed “good enough.” These results may indicate that our students have largely mastered the skills required for producing clear written assignments. Alternatively, working in teams may hide the performance of weaker students. A principal author receives written work from team members and then assembles and edits their team’s answers to case questions. The Gateway instructors recognize that this is a problem and are working to create individual writing assignments that do not involve the work of other team members.

The learning goal entitled “review and integrate the lower-division core” comes from the content grade on the case analysis. Student performance in Table 4 is determined by the average content grade on the five cases. By examining the total points for the content grade, we see that 14.7% of the students fall into the category “not good enough.” Without further information we cannot determine which SKA are driving the poor performance of these students. However, we can say that a large number of students are successful in producing good case analysis as 15.3% fall into the category of “very good” while 70.0% are deemed “good enough.” These results may indicate that our students have largely mastered the skills required for good case analysis. Alternatively, working in teams could hide the performance of weaker students.

The one-unit lab associated with the Gateway course (i.e., BUS 302L) requires students to take a multiple-choice exam in each of the six lower-division core business subjects: financial accounting, managerial accounting, business law, microeconomics, macroeconomics, and statistics. Students must pass each of the six exams with a minimum score of 8 out of 16 correct answers. If students do not achieve the minimum required score on their first attempt, they are given two additional opportunities to pass each exam. The purpose of the LDC exams is to demonstrate minimal proficiency in all LDC areas. The exam results from all 582 students enrolled in BUS 302L during the fall 2004 semester are summarized in Table 6. The scale for the LDC exams is shown in Table 7.

Table 6. Lower-division Exam Results

Lower-division Exam	Not Good Enough	Good Enough	Very Good	Mean score
Financial Accounting	11.2%	73.8%	15.0%	9.5
Managerial Accounting	16.3%	72.3%	11.4%	9.2
Business Law	2.6%	49.0%	48.4%	11.3
Microeconomics	6.8%	68.9%	24.3%	10.1
Macroeconomics	7.2%	72.0%	20.8%	9.9
Statistics	15.9%	71.5%	12.4%	9.2

Table 7. Scale for the LDC Exams

Performance on LDC	Outcome
Below 8	Not good enough
8 to 11	Good enough
Above 11	Very good

The scores in Table 6 represent the *highest* exam score achieved by any given student on a particular exam. As mentioned previously, each student had three opportunities to take each of the six LDC exams. The mean scores are fairly similar across the LDC exams –between 9.2 in statistics and 11.3 in business law. However, there are some noteworthy differences when viewing the three performance categories. The findings suggest that students have largely mastered the topics covered in business law. Only 2.6% of the students earn scores that are “not good enough” while 48.4% are “very good.” By contrast, 16.3 (15.9) % of students do not pass the managerial accounting (statistics) exam after three takes and are categorized as “not good enough.” And only 11.4 (12.4) % are deemed “very good” in managerial accounting (statistics). This suggests that students are having a difficult time with these subject areas. Improvement strategies will be investigated to determine interventions that can improve the performance of these students. Examples of possible intervention strategies are altering topic coverage in the corresponding lower-division course and providing additional review materials to Gateway students.

Finance 303, Financial Management

This course is required of all students in the BSBA, ACCT, and IS-Business program. The course learning goals, their linkage to the program learning goals, the SKA and the results of embedded measures obtained from 290 students in two sections of Finance 303 are summarized in Table 8.

Table 8. Embedded Measures for FIN 303

Course Learning Goal	Linkage to Program Learning Goals	SKA	Not Good Enough	Good Enough	Very Good
Investment Decisions	-Theory and practice of business -Problem Solving	Time value of money concept			92%
		Risk and return concept		77%	
		Financial calculation			92%
Financing Decisions	-Theory and practice of business -Problem Solving	Financial Markets and Institutions		70%	
		Capital Structure		76%	
Using Financial Data	- Theory and practice of business -Problem Solving	Financial Statements			88%
Financial Ethics and Regulatory Requirements	-Ethics and Social Responsibility	Ethics			95%
		Regulatory Requirements			93%

The instrument used to produce the data is the final examination. One or more multiple choice questions on the final exam covered every skill, knowledge, and ability that is associated with a particular course learning goal. The percentage of correct answers on each question covering a given learning goal was computed. The scale in Table 9 was used to classify student performance on each SKA.

Table 9. Scale for All Measures in Table 8

Performance on SKA	Outcome
Less than 70%	Not good enough
More than 70% but less than 85%	Good enough
85% or more	Very good

The results represent the average percentage of correct answers on the questions covering each SKA associated with a particular learning goal. For example, on average, 92% of the students correctly answered the questions on “time value of money concept” and 77% of the students correctly answered the questions on “risk and return concept;” the two SKA associated with the course learning goal of being able to make “investment decisions.”

Note that it is possible to compute a weighted average score for all SKA associated with a particular learning goal, using different weights for each SKA that depend on its relative importance. The result would be an overall average score for the learning goal. For example, assuming that the three SKA associated with “investment decisions” are equally weighted in terms of their relative importance, the average score for this leaning goal is 87%, putting student achievement on this learning goal into the “very good” category.

Embedded measures are extremely helpful in flagging areas where a course is successful in helping students achieve the learning goals, and in highlighting problem areas where students are having difficulty. For example, only 70% of the students correctly answered the questions on “financial markets and institutions,” one of the two SKA associated with the learning goal of making “financing decisions.” Depending on the relative importance of this knowledge, overall performance on the learning goal may be somewhat compromised. These results will be used by the Finance Department to uncover underlying causes and take appropriate corrective action, which may involve changes in pedagogy (e.g., new assignments or use of the Socratic Method) or in the course (e.g., devote more time to covering the topic or cover it earlier in the course).

Systems and Operations Management 306, Operations Management

This course is required of all students in the BSBA and IS programs. The course learning goals, their linkage to program learning goals, the SKA, and the results of embedded measures obtained from 40 students in one section of SOM 306 are summarized in Table 10.

Table 10. Embedded Measures for SOM 306

Course Learning Goal	Linkage to Program Learning Goals	SKA	Not Good Enough	Good Enough	Very Good
Knowledge of the basic concepts of operations management	-Theory and practice of business	-Understand the role of operations management -OM Strategies -Quality management -Planning and control	7%	50%	43%
Analysis of operations management problems	-Problem solving -Information technology skills	-Forecasting -Control charts -Project management	10%	85%	5%
Presentation of results	-Problem solving -Effective written communication	-Demonstrate effective writing -Clear and concise interpretation of results	43%	30%	27%
<i>Weighted Mean</i>			15%	73%	12%

The instruments used to measure student performance in the three course learning goals (listed in Table 10) are the second midterm, the final exam, and a short, original case. An essay question on the second midterm was used to measure students' "knowledge of the basic concepts of operations management." Multiple choice questions on the final were used to measure students' "analysis of operations management problems." And a short, original case was used to measure their "presentation of results." The three page case assignment required students to interpret a problem in a real world setting; propose a solution; solve it using Excel; and present the results.

The "weighted mean," in row four above, is determined by taking a weighted average of each student's scores in the three course learning goals. The weights are based on a departmental consensus of the relative importance of each course goal; and are defined as 40% for "analysis of operations management problems" and 30% each for the other two goals.

Students demonstrated good "knowledge of the basic concepts" and were typically able to define terms and explain ideas. They were less strong but still capable of solving analytical problems (i.e., "analysis of operations management problems"). Students were weakest at applying operations management ideas and models to problems in the case assignment and presenting the results.

This is shown by the weak student performance in the learning goal “presentation of results.” Roughly 43% of the students fell into the category “not good enough” while only 57% were categorized as “good enough” or “very good.”

These assessment results were reviewed by the systems and operations management department. It was agreed that performance in the learning goal “presentation of results,” was weak and it was agreed that instructors should spend more time going over methods of reporting analytical results. The department will use embedded assessment measures in all sections of SOM 306 in the 2005 spring semester.

Table 11. Scale for All Measures in Table 10

Performance on SKA	Outcome
80 – 100 pts	Very good
50 - 79 pts	Good enough
Less than 50 pts	Not good enough

Systems and Operations Management 307, Data Analysis and Modeling

This course is an elective for several options in the BSBA. The course learning goals, their linkage to program learning goals, the SKA, and the results of embedded measures obtained from 36 students in one section of SOM 307 are shown in Table 12.

Table 12. Embedded Measures for SOM 307

Course Learning Goal	Linkage to Program Learning Goals	SKA	Not Good Enough	Good Enough	Very Good
Select the appropriate decision support and statistical model	-Theory and practice of business	Select appropriate statistical or stochastic model	8%	70%	22%
Students should be able to analyze data to support decision-making in organizations	-Theory and practice of business -Information technology skills	Use of software to perform analysis	8%	42%	50%
Interpret and explain results of analysis to management	Effective written communication	Clear written communication of results	8%	33%	58%
<i>Weighted Mean</i>			8%	64%	28%

The instrument used to produce the measures in Table 12 is a consultant's report with analysis and recommendations. Each student was provided with a case study that contained different data from that of other students. The purpose of this case assignment is to provide each student with an opportunity to demonstrate his/her knowledge of statistical and stochastic modeling concepts and to evaluate the student's ability to explain these concepts using simple terminology.

The data in columns 4 through 6 are the percentages of students who fell into each SKA performance category. To be classified in a given performance category, a student's score on the relevant SKA must fall within the intervals shown in Table13.

When evaluating students' ability to "select the appropriate model," 70% were considered "good enough" and 22% were "very good." In meeting the course goal "analyze data," 42% of the students were "good enough" and 50% were "very good." This probably illustrates that it is easier for students to learn solution techniques than it is for them to learn more conceptual material. Students had particular difficulty learning concepts in statistical hypothesis testing; i.e. choosing the appropriate model and probability distribution (Z, t, or p), determining the correct null versus alternative hypothesis, and understanding the concept of significance. The department has discussed this issue and is attempting to correct the problem.

Student performance was strongest in the course learning goal "interpret and explain results." This is probably the result of the instructor meeting with students and assisting them with their reports prior to final submission.

The weighted mean in the last row of Table 12 was used as an overall measure of student performance in the course learning goals. It was calculated by taking a weighted average of each student's scores in the three course learning goals. The weights are based on a departmental consensus of the relative importance of each course goal; and are defined as 40% each for "select the appropriate model" and "analyze data" and 20% for "interpret and explain results."

These assessment results were reviewed by the systems and operations management department. It was agreed that embedded assessment measures will be used in all sections of SOM 307 in the 2005 spring semester.

Table 13. Scale for All Measures in Table 12

Performance on SKA	Outcome
80 – 100 pts	Very good
50 – 79 pts	Good enough
Less than 50 pts	Not good enough

Accounting 351, Intermediate Financial Accounting II

In fall 2004, the accounting program continued to experiment with assessment methods in its 351, Intermediate Financial Accounting II class. There were 109 students enrolled in three sections of 351; taught by two different instructors, Professors Bell and Macklin. The classes shared a common syllabus.

The following three accounting specific program learning goals are covered in 351:

1. Each student has a conceptual understanding of external financial reporting.
2. Each student has the ability to apply their conceptual understanding of external financial reporting to real world problems.
3. Each student can research professional literature (i.e., the FARS database) in external financial reporting.

Additionally, the 351 class covers two general program learning goals:

1. Each student shall be able to apply critical thinking skills when analyzing and solving accounting problems.
2. Each student shall be able to effectively communicate complex accounting concepts both orally and in writing. (This goal is assessed in the ACCT 351 COM class.)

Case C3-3 in Spiceland, Sepe, and Tomassini's text was used as the assessment instrument. The case is about the Red Hen company, which produces and sells eggs and chickens. The case concerns the classification of hens on Red Hen's balance sheet. The controller and the CFO disagree about the classification. Specifically, one considers the hens to be inventory; the other considers them to be property, plant, and equipment. Students must research the issue and provide the suggested classification to the CFO in a letter. Although all 109 students completed this assignment (and were graded in both 351 and 351 COM), 32 student papers were randomly selected from the population for assessment.

Because of the difficulty in using a rubric with 11 skills, knowledge, and abilities (SKA) in prior semesters, the accounting faculty developed a shorter grading rubric with five SKAs to evaluate the learning goals of the class. That rubric is included in Table 14, and was used to evaluate each student's letter to the CFO. The explanation below the table indicates the course or program learning goal(s) that correspond to each SKA and provides the traits that students will exhibit if they master the SKA.

Eight faculty served as the assessment team. The faculty included:

1. Two who taught the 351 class in fall 2004.
2. One who taught the class in a prior semester.
3. Three who teach 400 level financial accounting classes.
4. Two faculty outside the accounting department, but who are familiar with assessment.

One of the team members served as a facilitator and led a norming process. The norming process used four of the papers selected in the sample. After agreement on evaluation of these four papers, the remaining 28 were evaluated by the team. Each person on the team evaluated approximately 4 papers.

Table 15 contains the assessment results for fall 2004. Roughly two thirds of the students demonstrate critical thinking skills and an ability to apply their conceptual understanding of financial accounting to real world problems at an acceptable level. About 79% are able to research the professional literature, and 93% understand financial accounting concepts. While these results are acceptable to the accounting faculty, the data suggest that two SKAs need additional work:

1. Determine relevant facts.
2. State and support a solution.

Only 28.6% of the students demonstrated an “acceptable” ability to “determine the relevant facts.” Such poor performance in this SKA may jeopardize students’ ability to “reason logically” and “think critically” –the course and program learning goals associated with this SKA. Similarly, only 35.7% of the students were able to “state and support a solution” at an acceptable level of performance, which may compromise students’ ability to “think critically” and to “apply conceptual understanding to real world problems.”

The finding that students are unable to ‘determine all relevant facts’ from a case was communicated to the Gateway coordinator. Gateway is the course where accounting students are first taught to analyze cases. These results suggest that Gateway instructors need to spend more class time on identifying all case facts in a systematic fashion. Additionally, the 351 instructors will continue to focus on this SKA during the 2005 spring semester.

To improve student performance on ‘stating and supporting a solution,’ more class time will be devoted to this SKA next semester. Additionally, students will be provided with the grading rubric shown in Table 14. Samples of papers that demonstrate acceptable performance will also be provided.

Table 14. Grading Rubric for Critical Thinking in ACCT 351 Cases

SKA of Critical Thinking	Not Relevant	Not Acceptable	Acceptable	Above Average
1. Determine the Relevant Facts				
2. Identify Accounting Issues				
3. Research Proper Literature				
4. Identify Solution (and alternatives if appropriate in circumstances)				
5. State and Support Solution (Making proper schedule, journal entries, as appropriate)				

- 1) Determine the Relevant Facts: (Critical thinking-reason logically)*
 - a) Student sorts relevant material from irrelevant material
 - b) Student separates opinions from facts
 - c) Student identifies need to collect data

- 2) Identify Accounting Issues (Critical thinking-reason logically and understanding conceptual material)
 - a) Student understands the transaction or events
 - b) Student recognizes items not stated: unperformed duties, hidden contingencies
 - c) Student classifies the issue into a broad category: revenue recognition, matching, etc.

- 3) Research Proper Literature (Research and Critical thinking –reason logically)
 - a) Student researches GAAP and doesn't discuss tax requirements
 - b) Student researches the issue identified in SKA 2
 - c) Student seems to understand the standards researched

- 4) Identify and State Solution (Critical thinking-understand multiple perspectives and applying conceptual understanding)
 - a) States a clear solution that a client can understand; or
 - b) Identifies alternative ways to treat if appropriate.
 - c) Provides supporting statement for conclusion or alternatives that summarizes logic.

- 5) Support Solution (Critical thinking-evaluate and apply conceptual understanding)
 - a) Uses material from case, compares to literature
 - b) Defends solution and/or plausible alternatives clearly with judgment that is based on accounting literature/concepts. (Analyzes deeply enough that each portion of the research is tested, e.g. if extraordinary event needs to be material, unusual, and infrequent, student tests items against all three.)
 - c) Develops necessary supporting schedules, recommends correct journal entry as appropriate.
 - d) Organizes thoughts in a logical order demonstrating deductive or inductive reasoning.

*Note: The corresponding course or program learning goal is in parentheses.

Table 15. Embedded Measures for ACCT 351

Course Learning Goal	Linkage to Program Learning Goals	SKA	Not Acceptable	Acceptable
1. Reason Logically	Critical Thinking	Determine the relevant facts	71.4%	28.6%
		Identify accounting issues	7.1%	92.9%
		Research proper literature	21.4%	78.6%
Mean for Course Goal 1			33.3%	66.7%
2. Understand Multiple Perspectives	Critical Thinking	Identify solution (and alternatives if in circumstances)	3.6%	96.4%
3. Evaluation	Critical Thinking	State and support solution (making proper schedule, journal entries, as appropriate)	64.3%	35.7%
Mean for Critical Thinking (using Goals 1-3)			33.6%	66.4%
4. Research Proper Literature	Ability to do Research in Financial Accounting	Research proper literature	21.4%	78.6%
5. Identify Accounting Issues	Understand Conceptual Material in Financial Accounting	Identify accounting issues	7.1%	92.9%
6. Apply Conceptual Understanding to Real World Problems	Apply Conceptual Understanding to Real World Problems in Financial Acct.	Identify solution (and alternatives if in circumstances)	3.6%	96.4%
		State and support solution (making proper schedule, journal entries, as appropriate)	64.3%	35.7%
Mean for Course Goal 6			33.9%	66.1%

ACCOUNTING 351 COM, Communications for Accountants

This two-unit course is required for the B.S. in Accountancy. Students must concurrently enroll into ACCT 351 (Intermediate Financial Accounting II). The two courses share common assignments so it is possible to assess multiple student skills (e.g., critical thinking, research skills, and written communication) in a single assignment. The 351 COM course learning goal is to develop a business style of writing letters, memos, and reports based on accounting situations.

The course embedded measures consist of (1) scores from a pre and post diagnostic exam that measures students' ability to properly apply conventions of English and organize information; and (2) scores from two writing assignments (i.e., pre and post assessment) in response to the assigned ACCT 351 cases.

The diagnostic exam comprises 50 sentences where students correct errors by inserting or deleting proper punctuation, capitalization, number style, abbreviations, plural and possessive forms, spelling, compound words, and grammar usage. In addition, two groups of five sentences each are organized for good paragraph flow. There are 60 possible points.

The pre diagnostic exam is given in the prior semester (i.e., spring 2004) in ACCT 350. Students who scored below 40 points were assigned the *Gregg Worksheets* that accompany the *Gregg Reference Manual*. Rules for the conventions of English are presented with 24 worksheets containing practice sentences. Answer keys are available in the Oviatt Library. Student worksheets were checked for completion during week 5 of the 351 COM course.

The post diagnostic exam is identical to the pre diagnostic exam and is given in 351 COM during week 12 of the fall 2004 semester. The pre and post diagnostic exam scores are not included in the students' final course grade.

There are also two written documents that are evaluated (i.e., pre and post assessment). The pre assessment does not count towards the students' grade the first time that it is graded. However, students consider the pre grade, feedback, and comments and write a revision of the pre assessment writing assignment, which counts 5%. The post assessment writing assignment counts 10%.

The pre assessment writing assignment is a diagnostic letter. Students are asked to write a business letter advising a client about making an investment decision based on the financial statements. Students are asked to discuss the financial statements in terms of reliance and reliability. Students are also told that very little credit will be given for quoting definitions or repeating the information provided in the facts. The client is not a sophisticated businessperson and, therefore, students are asked to communicate in terms that will be easily understood. Students are also provided with information about the format used to write a business letter.

The post assessment writing assignment is from Case C3-3 in the 351 accounting text. Students are asked that their case analysis is prepared in a 1 - 2 page memo and to present the required journal entry in an appendix.

The two written assignments –diagnostic letter and case analysis – are evaluated using the *Business Communication Evaluation Form for Written Documents*. Students are given this form prior to the assignments so they understand the skills, knowledge, and abilities that are required for excellent written assignments. Holistic grading is used based on the qualities listed in the evaluation form for the 4 categories of business writing—(1) audience, (2) organization, (3) clarity, and (4) presentation. A grade of 0 - 4 was given representing the letter grades F through A.

Table 16 shows the average scores for the pre (diagnostic letter) and post (case analysis) writing assessments; and the average pre and post diagnostic exams scores for 95 students enrolled in 3 sections of ACCT 351 COM during the fall 2004 semester.

Table 16. Embedded Measures for ACCT 351 COM

Instrument	Mean
Pre Writing Assessment	1.36
Post Writing Assessment	2.52
<i>% of students who score below 2.0 on the post writing</i>	7.4%
Pre Diagnostic Exam	33.8
Post Diagnostic Exam	44.4
<i>% of students who score below 40 on the post exam</i>	30.5%
Sample Size	95

A comparison of mean pre and post writing assessments indicates that student performance rises by a full grade point (i.e., 1.16). Additionally, the mean score on the post diagnostic exam is 10.6 points higher than on the pre diagnostic exam. Additionally, 80.0% of the students scored below 40 on the pre diagnostic exam compared with only 30.5% on the post diagnostic exam.

The 351 COM students may not be taking this exam seriously because the score does not affect their final course grade. The average pre (post) diagnostic exam score is below (above) 40 –which is the minimum satisfactory score. The pre exam scores range from 17 to 45 points (out of 60 possible points), while the post exam scores range from 27 to 59 points.

Since the diagnostic exam scores are not tied to the students' final course grade, a change was made to the course requirements. A score of 42 or above (rather than 40) will be required for passing the 351 COM course beginning in the spring 2005 semester. Furthermore, all students will be assigned the *Gregg Worksheets* by the ACCT 350 instructor. After two tries on the post exam during weeks 5 and 12 of the semester, students scoring below 42 will receive an Incomplete in 351 COM. Students will have to retake the diagnostic exam until they pass.