

Purposeful Assessment Design: Aligning Course-Embedded Assessment with Program-Level Learning Goals

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ABSTRACT

This paper describes the development and testing of two course-embedded instruments to assess written communication skills of undergraduate business majors at a large public university. This assessment was an integral part of a college-wide Assurance of Learning (AOL) system to ensure that students possess the desired level of competency upon the completion of business core courses.

Based on Gerretson and Golson's (2004) model for course-embedded assessments, two different assignments adaptive to the specific course contents in marketing and management were developed and tested in two different courses, using a common scoring rubric with specific criteria and standards of performance. A total of 143 students participated in the assessment. Based on the results, faculty identified areas of improvement and made changes to the curriculum to strengthen students' writing competencies. The insights from the design and implementation of the course-embedded assessment will benefit future innovative outcomes-based assessment practices in higher education.

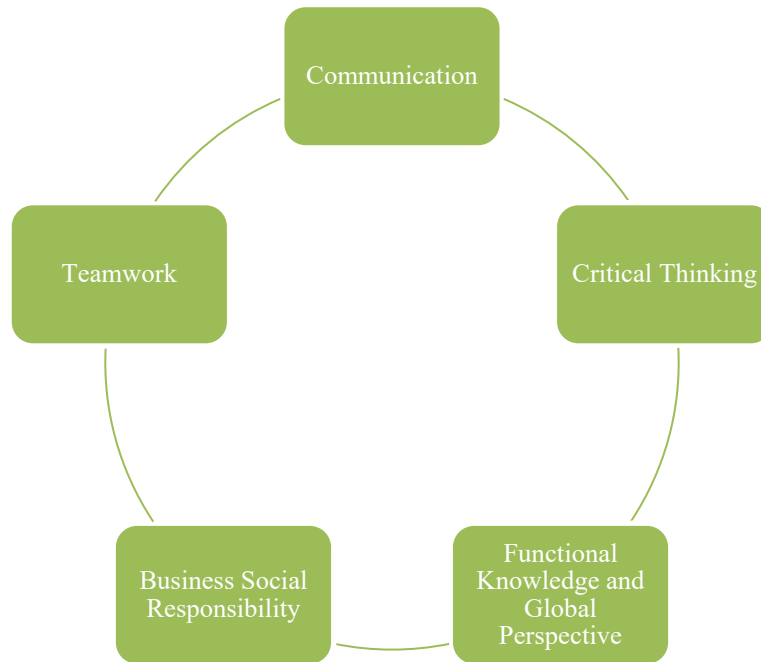
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INTRODUCTION

Assurance of learning is an important aspect of the educational experience, especially as it relates to satisfying accreditation requirements such as for AACSB – The Association to Advance Collegiate Schools of Business (AACSB, 2017). One of the challenges is developing assessment instruments for program-level learning goals that can be effectively embedded into undergraduate business core courses while aligning the assessment with the course learning objectives (Hutchings, 2016). Such embedded approaches not only offer a systematic methodology of assessment, but also are nonintrusive (Gerretson and Golson, 2004) and can help mitigate faculty resistance to program-level assessment initiatives which they may lack necessary knowledge of, and perceive as demanding significant time commitment (Kelley et al, 2010).

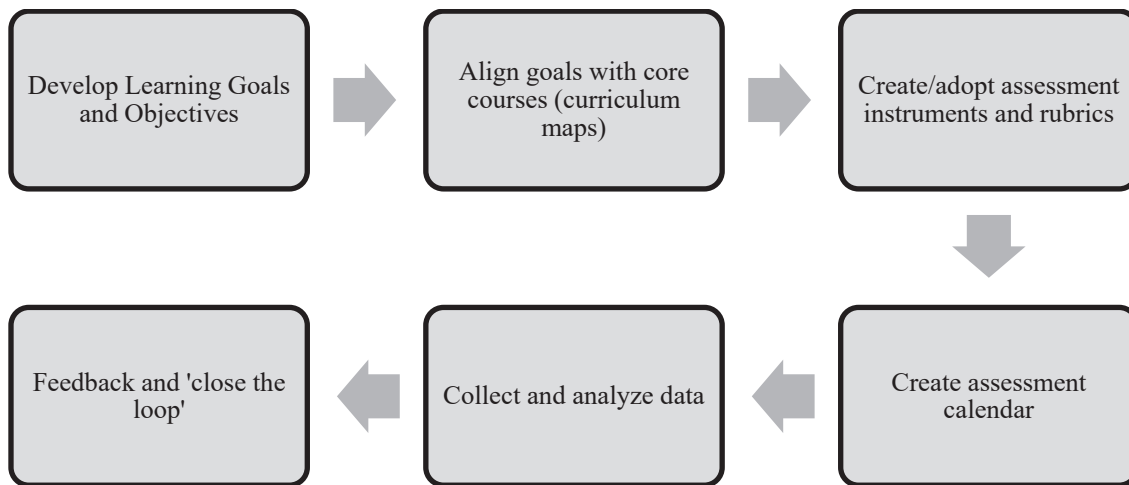
This paper describes the development and testing of two course-embedded instruments to assess written communication skills of undergraduate business majors at a large public university. Communications skills is one of five learning goals for the Bachelor of Science in Business Administration (BSBA) degree program offered in the College of Business Administration. Figure 1 shows the program-level learning goals for the BSBA. Communication skills include both written and oral communication.

Figure 1: Program-Level Learning Goals for the BSBA



The assessment described in this paper was an integral part of a college-wide Assurance of Learning (AOL) system to ensure that students possess the desired level of competency upon the completion of business core courses. The faculty-driven process is overseen by a committee comprising of faculty representatives from each department in the College, and an Associate Dean. A faculty coordinator for undergraduate assessment has responsibility for facilitating the process and preparing assessment reports. Figure 2 shows the AOL process.

Figure 2: Assurance of Learning Process



ASSESSMENT OF WRITTEN COMMUNICATION SKILLS IN HIGHER EDUCATION

Communication competence is one of the most important factors necessary for professional and managerial success (Brink and Costigan, 2015); and it is a crucial skill for business graduates, as evidenced by surveys of employers as well as academics (cf. Brown, 2015; Hult Labs, 2014; National Association of Colleges and Employers, 2015). There is widespread agreement on the critical need to include them in the business curriculum (Conrad and Newberry, 2012). It is also one of the most popular program-level learning goals adopted by AACSB accredited business schools (AACSB white paper, 2013). This is reinforced by the fact that a recent survey of Deans at AACSB accredited business schools found that communication was the most assessed skill in business schools' Assurance of Learning (AOL) process (Wheeling et al, 2015). In light of the ubiquity of assessing communication skills for assurance of business program learning goals, a course-embedded approach is adopted in an attempt to develop and test a set of adaptive assessment instruments for written communication competency of undergraduate business majors at a large public university.

Course-embedded assessment practices aligned to program-level objectives allow for flexibility in course content and delivery while ensuring consistency in evaluating student learning across the program's curriculum (Gerretson and Golson, 2005). Course-embedded assessment (CEA) is defined as "... a classroom-based process that uses instructor grading to answer questions about student learning outcomes in a non-intrusive, systematic manner." (p. 4, Gerretson and Golson, 2004). In addition to being more meaningful, less intrusive and less time consuming, CEA can promote well-informed conversations among faculty on expectations for student learning, standards of performance at the program level and best practices for enhancing student learning across the curriculum. Ammons and Mills (2005) also posit that assurance of learning results at the course level can be used to support program level assessment and can provide evidence regarding the contribution made by a course to a related learning goal and a measurable objective of the program. Furthermore, AACSB specifically identifies course-embedded measures as one of the approaches available for assessment (AACSB white paper, 2013). Steps involved in implementing course-embedded assessments are detailed in the literature (e.g., Ingols and Shapiro 2014, McConnell et al, 2008, and Gerretson and Golson, 2004). In general, the CEA process engages faculty in defining learning objectives for the course, developing a rubric to measure the degree to which the objective is being met by the student, using the rubric to grade student work, record and analyze data, and determine future changes to the curriculum, pedagogy, or assessment methods (Gerretson and Golson, 2004). Various studies have reported on experiences with course-embedded measures, for example, with multiple choice questions to assess quantitative skills in a finance course (Santos et al, 2014) and for evaluating cross-functional integration in an accounting course (Ammons and Mills, 2005).

With respect to written communication competency, different approaches have been used to incorporate written communication in the curriculum and course content. Writing-across-the-curriculum programs have met with mixed success (Plutsky and Wilson, 2001). The use of writing workshops as an additional resource to enhance written communication skills is described in Docherty et al (2010). In a similar vein, communication modules designed to be taken concurrently with the core courses is described in Young and Murphy (2003).

METHODOLOGY

In this research, we followed Gerretson and Golson's (2004) model for the development and evaluation of course-embedded assessment. Aligning both program-level learning goals and course-level learning objectives, two different written communication assignments were designed and implemented in two required undergraduate business core courses – a Principles of Management course, and a Principles of Marketing Management course. Both courses include written communication in the context of the subject areas in business, which provides strong rationale for them to be identified as the courses to assess written communication competency. Both classes follow the University and the College's "meaningful writing requirement". Under this requirement, students complete writing assignments for the course during the term (which counts for at least 10% of the course learning components) and receive feedback before the term is over. The format of such writing assignments can range from exams, quizzes, reflection papers, research papers, or essays. Faculty have the authority to select the most appropriate writing assignments for the course to meet the "meaningful writing requirement" as well as specific

course objectives.

Students enrolled in these courses were not required to take any prerequisites. However, in general, students with sophomore and junior standing make up the majority of these classes; and they tend to have various experiences in writing in both general and discipline specific areas.

Principles of Management course-embedded assignment

Principles of Management is an introductory-level management course for all BSBA students in the College. It provides students with an overview of the major concepts, models, and theories in the field of management. The course covers significant management literature, practical applications of management theories to problems in planning, organizing and controlling business activities, analysis of external and internal organizational environments, organizational culture and structure, and managerial decision making and control activities.

The Principles of Management course has five course Student Learning Outcomes (SLOs): 1) students will become familiar with the fundamental management concepts and the main principles of effective management; 2) students will demonstrate practical applications of management theories in a variety of organizational settings; 3) students will describe the mechanisms via which the managers can affect the level of organizational performance; 4) students will practice analyzing the internal and external environment of an organization and describe their effects on the performance of the organization; and 5) students will apply problem solving methodology and the standards of ethical behavior to real-life organizational issues, and will produce practical managerial recommendations to address them.

In line with these course SLOs, class coverage and discussions focus on developing students' managerial skills, particularly their communication competence, as it is a vital aspect of managerial success (cf. Bambakas and Patrickson, 2009). Consequently, Principles of Management class is an appropriate context to measure the program learning outcomes in written communication. Also, throughout this course, students are exposed to models and examples of managerial traits, skills, and behaviors. In relation to these concepts, a writing assignment titled "Manager who Rocks!" was designed with two objectives:

1. To stimulate individual reflection and critical thinking about effective managerial characteristics, behaviors, and activities, as a basis for the upcoming class coverage on management functions.
2. To assess students' current level of written communication skills, determine their competency level with respect to written communication competency criteria specified at the program level, and identify potential areas for improvement.

Students were required to write a 2-page essay about individual characteristics, behaviors, and activities of an outstanding manager. They were asked to support their arguments using examples from real life, individual experience, or other published sources.

Principles of Marketing Management course-embedded assignment

Principles of Marketing Management is an introductory course in marketing management for all BSBA students in the College. It introduces students to basic principles, concepts, and institutions involved in facilitating the exchange of goods and services. The course also introduces students to the process and skills in analyzing the markets, the marketing environment, and the "marketing mix" variables, to facilitate strategic marketing planning and implementation and control of marketing strategies to gain competitive advantage.

Principles of Marketing Management course has six course SLOs: 1) students will recognize the nature, scope and role of marketing and apply the marketing concepts in the context of modern day businesses; 2) students will recognize the nature and importance of marketing research, and apply basic marketing research skills in developing and evaluating marketing problems, 3) students will identify and examine marketing mix strategies within the context of controllable and uncontrollable (specifically, legal, competitive, and demographic) environments, 4) students will identify the major growth areas in marketing, 5) students will analyze and evaluate the ethical issues involved in developing and implementing marketing strategies, 6) students will research and write critical marketing problem paper on some aspects of marketing.

In line with the course SLOs, writing in the context of marketing offers a good fit to measure the program learning outcomes in written communication. Among the course topics, “strategic planning in marketing” is one of the early modules in this course to offer students an overview of the structure and the key components of strategic marketing planning, such as the organization’s strategic mission, goals, core values and situation analysis. In order to select a topic in the “strategic marketing planning” module that is relatable to all students in the class for this writing assignment, the University’s “core values” was selected as a prompt for the development of the assignment. All students enrolled, regardless of their academic standing should have some personal experience with the University’s “core values” and how those were experienced from their day-to-day life on campus. The university’s core values include “polytechnic identity”, “academic quality”, “learn by doing”, “teacher-scholars”, “environmental sustainability”, and “celebration of diversity”. The resultant assignment in the Principles of Management course involves two objectives:

1. To have students reflect on their educational experience at the university and how it relates to the university’s core values. This would influence the discussion of strategic planning in marketing.
2. To assess students’ written communication skills and identify potential areas for improvement (identical to the second objective for the Principles of Management assignment identified above).

Students were asked to review the university’s core values and write a two page narrative discussing how their educational experience (e.g., in a class or through an extra-curricular activity on campus or in the community) reflects one or more core values of the university. More specifically, they had to describe the context of their university experience and provide rationale as to how this experience exemplifies the university’s core values.

Scoring of student outputs

For both courses, a common rubric was used to score the submissions on three criteria – basic grammar, structure, and content. Each criterion was scored on a scale from 1 (poor) to 4 (excellent). A score of at least 3 was required to demonstrate competency in each criterion, and an overall score (average of the scores for the three criteria) of at least 3 was required to demonstrate competency in the written communications learning goal. This rubric (presented in Appendix 1) had been previously adopted at the college level, and was provided to the students in advance. The assessment assignments were implemented as Blackboard assignments, where students could upload their essays directly to Blackboard, and get graded for course credit. Each essay was scored by two raters – the course instructor, and a second rater.

An analysis of rater agreement was undertaken to check for consistency in ratings across the two raters. The rater agreement is expressed as a percentage, showing the extent to which the two raters agreed on the classification of each essay along each criterion as well as overall (the classification being whether the student had demonstrated competency, i.e., whether the score was at least 3). Table 1 exhibits the rater agreement percentages for both courses. As seen in the table, there was more than 80% agreement on the overall score, indicating a high level of consistency between the raters. The two raters’ scores were averaged to determine the final score for each essay.

Table 1: Rater Agreement Summary

	Basic Grammar	Structure	Content	Overall Score
Principles of Management	78.67%	94.67%	90.67%	86.67%
Principles of Marketing Management	73.53%	79.41%	85.29%	80.88%

RESULTS

A total of 143 students participated in the assessment. The college's benchmark is that at least 70% of students should receive a score of at least 3 (on a 4 point scale), using the established rubric. The results for each course, as well as the overall results are presented below.

Principles of Management writing assignment:

Seventy-five students were assessed in the Principles of Management course. Table 2 shows the summary of results based on the average scores (across both raters) for each essay. The mean and median scores across all students are reported, along with the percentage of students meeting or exceeding a score of 3.

Table 2: Summary of Results – Principles of Management Course-Embedded Assessment

Average ratings: # of students = 75

	Basic Grammar	Structure	Content	Overall score
Mean score (across students)	3.37	3.65	3.41	3.48
Median score (across students)	3.5	3.5	3.5	3.5
% of students scoring '3' or higher	82.7%	97.3%	89.3%	94.7%

Table 2 shows that the mean and median scores for each criterion, as well as the overall mean and median scores were at least 3. Further, at least 70% of the students received a score of 3 or higher. Students scored highest on structure and lowest on basic grammar.

Principles of Marketing Management writing assignment:

Sixty-eight students were assessed in the Principles of Marketing Management course. Table 3 shows the summary of results based on the average scores (across both raters) for each essay.

Table 3: Summary of Results – Principles of Marketing Management Course-Embedded Assessment

Average ratings: # of students = 68

	Basic Grammar	Structure	Content	Overall score
Mean score (across students)	3.03	3.17	3.33	3.18
Median score (across students)	3	3	3.5	3.17
% of students scoring '3' or higher	69.1%	73.5%	86.8%	73.5%

Table 3 shows that the mean and median scores for each criterion, as well as the overall mean and median scores were at least 3. However, while at least 70% of the students met the college’s threshold for structure and content, the benchmark was not met for basic grammar.

Finally, Table 4 shows the aggregate results for both courses.

Table 4: Summary of Results – Aggregate Data

Average ratings: # of students = 143

	Basic Grammar	Structure	Content	Overall score
Mean score (across students)	3.21	3.42	3.37	3.33
Median score (across students)	3.25	3.5	3.5	3.33
% of students scoring '3' or higher	76.2%	86.0%	88.1%	84.6%

Table 4 shows that when considered at the program level across both courses, the college’s benchmark of at least 70% of students earning a score of at least 3, is met for each criterion, as well as overall.

CONCLUSIONS

Both instruments implemented in the study appear to be well received by the instructors and students. Neither the instructors nor students expressed any concerns about the assessment instruments being a hindrance or distraction to the learning activities in their respective courses. On the contrary, these assignments that were designed in relation to the course SLOs became beneficial tools not only to measure written communication skills, but also to enhance the student learning and understanding of the related course concepts and to provide an opportunity for the students to practice self reflection and critical thinking as well. The assessment results appear to reflect students’ writing competency based on the pre-established rubrics, and hold promise to be further implemented in the subsequent AOL cycles in core business courses. However, an interesting observation is that scores were higher in the Principles of Management course. This may be due to the fact that the assignment was directly related to the course content and students were allowed to use external sources. On the other hand, in the Principles of Marketing Management course, students were required to reflect on their own experiences and couldn’t rely on external sources. In addition, several students were new to the university (transfer students), and may not have had enough experience with the university to frame it in the context of the university’s core values. These factors may have made the assignment more challenging.

As mentioned above, one of the objectives of this assessment procedure was to identify potential areas for improvement. As part of the college’s efforts in continuous improvement and ‘closing the loop’, a new core course, “Applied Business Communication” has been introduced in the curriculum, and will be offered for the first time in Fall 2018. In addition to ongoing assessment in existing core courses, this new course will further facilitate program-level assessment of written communication skills. Another ‘closing the loop’ action resultant from the study was to include an English Composition class from either English or Integrated General Education areas as a prerequisite to Principles of Marketing Management, to ensure that all students receive systematic training in writing prior to taking this course.

Additional insights can be gleaned from the development and implementation of the course-embedded assessment process to evaluate written communication competency across the business curriculum. The insights may be

categorized along the following dimensions, as depicted in Table 5: course design, assignment design, faculty, students, technology, and the culture of assessment.

Table 5: Summary of Insights

Dimension	Insight
Course design	<ul style="list-style-type: none"> Aligning program-level objectives with course-level student learning outcomes
Assignment design	<ul style="list-style-type: none"> Adapting the mechanics of the assignment design to students' expected competency level in the program
Faculty	<ul style="list-style-type: none"> Leveraging the course-embedded assessment process to balance faculty time spent on assessment with usefulness and relevance of assessment evidence to inform teaching and learning practices at the course and program levels
Students	<ul style="list-style-type: none"> Sharing the assessment rubric with students prior to assigning the assignment; this ensures common understanding of expectations on how student work will be evaluated and at what levels of performance
Technology	<ul style="list-style-type: none"> Leveraging Learning Management System (e.g., Blackboard) to embed assignment and rubrics in student course experience
Culture of Assessment	<ul style="list-style-type: none"> Utilizing course-embedded assessment to turn intermittent assessment efforts into a continuous and systematic process Promoting course-embedded assessment as an innovative pedagogy that demonstrates program quality and integrity Framing course-embedded assessment as a strategy for quality assurance, organizational learning and improvement Utilizing evidence from course-embedded assessment in annual assessment reports to the university and in discipline-based accreditation reports for external accreditors Developing a culture of assessment through broad faculty participation and communication of assessment results to internal and external stakeholders on a regular basis

These insights may contribute to peer AACSB member schools' further explorations toward a more innovative, intentional, adaptive, and sustainable assurance of learning (AOL) practice in assessing program-level learning goals.

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Appendix 1: Written Communication Skills Rubric

Scoring Base	Rating = 4	Rating = 3	Rating = 2	Rating = 1
Basic Grammar	The writing has no major errors in word selection and use, sentence structure, spelling, punctuation, and capitalization	The writing is adequately free of errors in word selection and use, sentence structure, spelling, punctuation, and capitalization	The writing has several major errors in word selection and use, sentence structure, spelling, punctuation, and capitalization.	The writing has serious and persistent errors in word selection and use, sentence structure, spelling, punctuation, and capitalization.
Structure	The writing has clear and appropriate beginning, development, and conclusion. Paragraphing and transitions are also clear and appropriate.	The writing has adequate beginning, development, and conclusion. Paragraphing and transitions are also adequate.	The writing has weak beginning, development, and conclusion. Paragraphing and transitions are also deficient.	The organizational structure and paragraphing of the writing have serious and persistent errors.
Content	The writing provides in-depth coverage of the assigned topic, and assertions are clearly supported by evidence.	The writing provides sufficient coverage of the assigned topic, and assertions are supported by evidence.	The writing provides weak coverage of the assigned topic, and assertions are weakly supported by evidence.	The writing provides very poor coverage of the assigned topic, and assertions are very poorly supported by evidence.

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