In Theory…

Course Surveys and Student Engagement Surveys: Indirect Measures of Gains in Learning Outcomes

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Abstract

The purpose of this study is to explore how indirect measures such as student surveys can be used to demonstrate gains in learning outcomes. Assessment of student learning outcomes, particularly via direct measures of class activities and assignments, is critical to enhancing students' academic growth. Indirect measures of learning outcomes can also be used to draw additional insights into student accomplishments, or at least their perceived gains in designated competencies. This study addresses the use of indirect measures of student learning at a multi-campus public college in North Carolina.

Keywords: Course surveys, Graduate surveys, Indirect assessment, Student engagement

Introduction

Student Learning Outcomes (SLOs) provide the essential components for academic assessment at the post-secondary level. While course grades provide a means of identifying students' grasp of the subject material, course grades may also reflect other variables such as attendance and participation which may be related to SLOs but not necessarily the best measures. Faculty use direct measures such as rubrics to evaluate students' knowledge and skills in various subjects. In addition to these direct measures, indirect measures such as self-reported assessments from students themselves may be useful. At one public institution, student surveys are used in addition to the direct measures. Some of the most useful surveys, which will be described in detail, include students' course evaluations, national student engagement surveys, and graduate exit surveys. The purpose of this study is to explore how indirect measures can be used to examine perceived gains related to student learning outcomes.

Background

Assessment of student learning outcomes, particularly via direct measures of class activities and assignments, is critical to enhancing students' academic growth (Banta, Jones & Black, 2009; Banta & Palomba, 2014; Suskie, 2009; Walvoord, 2010). While direct measures such as tests, portfolios, and presentations are used (Diamond, 2008; Walvoord & Anderson, 1998), there is a growing emphasis on indirect measures of learning outcomes to yield additional insights into student accomplishments, or at least students' perceived gains in designated competencies. Among the commonly used indirect measures are surveys and other self-reported instruments (Maki, 2004). In their four-tiered model of planning for general education assessment, McLawhon and Philips (2013) describe the need to

include indirect measures along with direct assessments. Surveys and national assessment instruments cannot replace the importance of carefully defined SLOs in an environment in which faculty own the assessment (Furman, 2013).

This study addresses the use of indirect measures of student learning at a multi-campus public college in North Carolina. The North Carolina system follows a common course library that defines transferable coursework and general education coursework. The college follows the state mandate as set forth by the State Board, that details the courses, credits, and content required for degree programs. General education courses are divided into the following subject categories: English/composition, humanities/fine arts, social/behavioral sciences, natural sciences, and mathematics. Requirements for all programs awarding associate degrees exceed the minimum 15 semester hours of core general education courses, and include at least one course in humanities/fine arts, social/behavioral sciences, natural sciences, and mathematics. The required general education coursework for each degree program appears in each program's curriculum guide located on the college's website and in the catalog.

Beyond these state requirements for specific general education courses, the college has defined a set of five core competencies that better reflect the holistic view of intended student outcomes. These core competencies were identified by the General Education Committee, and the faculty measure student attainment of these college-level competencies via rubric assessments. The student learning outcomes for general education core competencies and their descriptions are as follows:

- *Written Communication:* Students will write effective documents that are unified, coherent, well developed, and which adhere to standard grammar and mechanics.
- *Oral Communication:* Students will deliver oral presentations that are unified, coherent, well developed, and which adhere to standard grammar. In addition, students will demonstrate proficiency in components of delivery which may include eye contact, posture/body language, volume, articulation, and use of time.
- *Quantitative Skills:* Students will perform basic arithmetic and algebraic computations. In addition, students will apply these skills in problem solving and in the interpretation of quantitative data.
- *Information Literacy:* Students will locate, evaluate, and utilize information using a variety of print and electronic sources.
- *Computer Literacy:* Students will demonstrate an understanding of basic computer terminology and file management. In addition, students will demonstrate working knowledge of applications which may include: email, web browser, word processor, spreadsheet, and presentation software.

In addition to the direct measurements of scoring rubrics for designated activities in selected courses, several indirect measures of student attainment (student course evaluations, student engagement surveys, and graduate exit surveys) confirm that students are satisfied with their gains in developing competencies in the five core areas.

Sample & Methodology
Case Institution

Established in 1960, the college is considered a small to midsize institution with over 3,000 credit and degree-seeking students and over 5,000 non-credit students (continuing education) studying in over 60 certificate, diploma, and associate degree programs. The student population comes primarily from a seven-county region that ranges from rural farming communities to large populations of residents along the Outer Banks. The institution provides instruction at four campuses to a student population that ranges from high school students to senior citizens. Approximately 40% enroll full-time, two-thirds are female, and about 30% are of underrepresented ethnic backgrounds. The college maintains an open admissions policy offering access to postsecondary education to the residents of northeastern North Carolina.

Assessment 1: Course/Faculty Evaluations

All students in selected general education courses each semester are asked to respond indicating their level of agreement with a variety of items, including their perceived gains in several interdisciplinary core competencies/outcomes. The course evaluations are administered electronically using online assessment software. The Office of Planning and Institutional Effectiveness sends a general email announcement to all students in all courses at all physical and virtual locations providing instructions and a link to the course survey website. While the response rate varies from one semester to the next, it has been as high as 33% and as low as 10%.

The course evaluation includes questions about the quality of the instructor and the course, as well as students' reflective assessment of their own gains in learning outcomes. Specific questions based on the core competency definitions enable faculty to determine students' perceptions of the level at which students recognize improvements in their core competencies. These questions are listed in Table 1.

Assessment 2: Community College Survey of Student Engagement (CCSSE)

Over the years, scholars have focused a vast amount of research on the college student experience and have developed assessments based on their research. The Community College Survey of Student Engagement (CCSSE) is a leading national assessment on students' perceptions of their academic and social experiences and engagement at two-year colleges. While there are many questions on specific aspects of college life, CCSSE provides participating colleges with insights into their students' feedback on the following five benchmarks: active and collaborative learning, student effort, academic challenge, student-faculty interaction, and support for learners (McClenney, Marti, & Adkins, n.d.).

During alternating spring semesters, the college administers CCSSE to a sample of about 900 students representing all programs and locations. Historically, nearly 500 students respond to the survey. Several questions in this nationwide survey relate to the general education competencies at this college, therefore, this instrument can provide additional assessment data to triangulate with the college's student course evaluations.

Assessment 3: Graduate Surveys

Alumni are contacted within six to nine months after commencement to respond to a graduate survey which includes questions about their preparation in their programs of study and general

education competencies. The survey is administered by the Coordinator of College Planning following completion of a degree, diploma or certificate via postal mail. Follow-up communications may also be handled by email to students' non-college email address. Questions are grouped into the following categories: quality of the college experience, goals for attending college, current status in higher education and employment, satisfaction with the college experience, and satisfaction with general and program learning outcomes.

Results

Results for these indirect assessments are presented for course evaluations, student engagement surveys, and graduate exit surveys. The results are provided as descriptive snapshots. The first table provides the percentage of students who responded positively (agree or strongly agree) to each statement in the course evaluations for selected general education courses. Course numbers are identified along with each core competency to indicate which general education courses correspond with each competency.

Table 1. Course Evaluations

	2011-12	2012-13
Computer Literacy (CIS 110, CIS 111)	n=198	n=179
Taking this class helped me to understand basic computer terminology and file management more effectively.	95.7%	100.0%
Taking this class helped me to develop a working knowledge of computer applications such as email, web browsers, word processing, spreadsheet, and presentation software.	96.6%	100.0%
Written Communication (ENG 111)	n=160	n=149
Taking this class helped me to write more effectively.	97.0%	94.7%
Taking this class helped me to use standard grammar when I write.	97.3%	95.4%
Taking this class helped me to write documents that are unified, coherent, and well developed.	96.9%	92.8%
Information Literacy (ENG 112, ENG 113, ENG 114)	n=163	n=151
Taking this class helped me to locate and evaluate information using a variety of print and electronic sources more effectively.	86.2%	93.3%
Taking this class helped me to use information from print and electronic sources more effectively.	85.8%	100.0%
Oral Communication (COM 110, COM 120, COM 231, EDU 119)	n=84	n=75
Taking this class helped me to deliver oral presentations that are unified, coherent, well developed, and which adhere to standard grammar.	94.1%	93.8%
Taking this class helped me to improve my delivery in areas such as eye contact, posture/body language, volume, articulation, and use of time.	94.6%	93.8%
Quantitative Skills (MAT 115, MAT 141, MAT 161, MAT 162, MAT 171, MAT 172)	n=150	n=142
Taking this class helped me to perform basic arithmetic and algebraic calculations more effectively.	95.8%	98.1%
Taking this class helped me to apply math skills in problem solving more effectively.	96.2%	97.3%
Taking this class helped me to interpret quantitative data more effectively.	94.5%	93.0%

CCSSE survey provides an excellent opportunity to compare how students perceive their general education at the college has made a difference in their learning. Further, college officials found that the CCSSE survey is a useful tool for

measuring general education because a number of the survey items directly map to the institution's SLOs. One question asked the following: How much has your experience at this college contributed to your knowledge, skills, and personal

development in the following areas? In response, survey participants replied to a variety of learning experiences and opportunities. The following selected items map very closely to the general education core competencies.

CCSSE Survey Items	College's Core Competencies
Writing clearly and effectively	Written Communication
Speaking clearly and effectively	Oral Communication
Thinking critically and analytically	Information Literacy
Using computing and information technology	Computer Literacy
Solving numerical problems	Quantitative Skills

Nearly 500 students responded to the entire CCSSE survey, representing a response rate of approximately 15% to 20% of the population. The institution benchmarks its students' reported learning in the general education core competencies against student peers at comparable institutions. Below is a table comparing the student survey results versus peers within the North Carolina Community College System indicating the percentage of students who reported that their college experience contributed to gains in these areas either "quite a bit" or "very much."

As displayed in Table 2, the standardized survey results indicate that

students report that their experience at the college led to a slightly greater impact on their development in written communication, oral communication, and quantitative skills than their peers at other public institutions in North Carolina. On the other hand, students report slightly lower impacts on their development in critical/analytical thinking and computer use than students at other in-state colleges. However, students at the case institution reported a noticeably stronger impact on the survey item about the overall experience in acquiring a broad general education than students across the state.

Table 2. Community College Survey of Student Engagement

	2011 Gains* (n=492)	2013 Gains* (n=493)	NCCCS Peers
Writing clearly and effectively	66.7%	65.5%	65.6%
Speaking clearly and effectively	64.3%	57.7%	61.0%
Using computing/information technology	68.3%	64.6%	68.5%
Solving numerical problems	63.6%	59.1%	59.8%
Acquiring a broad general education	77.8%	69.5%	73.6%

*CCSSE asks students to indicate their rating of the overall impact of their college's general education.

Table 3 displays results of several years of survey responses collected from graduates within six to nine months after completing their degree. Graduates were asked to reflect on their college experience and indicate their level of satisfaction with a

wide range of items, including their gains in development in general education outcomes. The table shows the percentage of graduates who are satisfied or very satisfied.

Table 3. Graduate Survey

	2011 (n=140)	2012 (n=80)	2013 (n=98)
Communicate effectively in speaking, writing, reading, and listening	97.7%	95.0%	98.9%
Use information to analyze problems and make logical decisions	97.7%	96.3%	95.8%
Demonstrate competence in the basic use of computers	97.7%	96.3%	95.8%
Demonstrate quantitative (numerical and/or computational) skills	98.4%	96.3%	94.8%

Discussion

The college incorporated several different surveys to gain a sense of students' perceptions of their development in the general education core competencies. Students participate in the evaluation and assessment of their learning experience primarily through end-of-course evaluations of their instructor and the course itself. Using this feedback from students, the faculty and department/division chairs identify perceived strengths and weaknesses of a given course and instructor. Students in all courses, whether offered face-to-face or through distance education, are invited to complete their course evaluations. The student evaluations are included among a variety of assessment measures to evaluate faculty performance. In addition to providing feedback on perceptions of course and instructional quality, students' course evaluations yield insights into their perceived gains in learning, particularly in general education courses.

Students responded with remarkably high levels of satisfaction with their development of core competencies as noted in the course evaluations. One area that is lower than the others is in the proficiency of information literacy. Interestingly, one possible explanation for the lower level of self-reported gains might be due to the nature of this core competency. Information literacy is about locating, selecting, and using print and electronic information. Perhaps students entered college with a strong ability to find and utilize information because they had already been using technology in a school setting. Students at younger ages now integrate computer technology into their learning experiences, so it might be that in these general education courses on the college level, students have already mastered the skills needed for information literacy. Additional questions would be needed to test this hypothesis.

Academic life at a given institution is unique to that college, therefore internal surveys are developed with a better understanding of the campus culture and climate than commercial, nationwide instruments. To be sure, national standardized surveys are beneficial, especially because they provide institutions with comparative benchmark data. Using the results from the CCSSE data, the following observations emerged:

- Current students indicate that they are satisfied with the amount of gains in learning outcomes developed in the primary general education courses.
- Current students had mixed results compared to their peers at other public two-year institutions in North Carolina.
- Current students indicated a noticeably stronger impact about the overall experience in acquiring a broad general education than students across the state.
- Graduates report a very high percentage of satisfaction with their

preparation in oral and written communication, information literacy, computer skills, and quantitative (math) reasoning.

The student engagement survey data confirm what the college faculty had found earlier in the student course evaluations.

One of the most valuable indicators of a college's influence is the final product: graduates. In some ways alumni are representatives of their colleges because they received intentional academic and social experiences designed to enhance personal development and career readiness. Thus, we can learn quite a bit from our graduates and their perceptions of what worked well in college and what areas for improvement should be addressed. At this institution, the graduates' self-reported feedback on their perceived gains in the general education core competencies were noticeably high. On one hand this is encouraging to see such a correlation with the student course evaluations and student engagement surveys. On the other hand, perhaps the college can generate deeper, richer data by asking graduates open ended questions. A qualitative approach might yield more insights into how the college can use the general education courses to develop students to an even greater extent than before.

This study addressed the value of using surveys as additional evidence of measures in student learning outcomes. Indirect measures are useful in triangulation of academic assessment data to provide evidence of student learning. One recommendation for future research is to examine the statistical correlation between indirect measures identified in this study with direct assessments for these general education core competency courses such as faculty rubrics and final course grades.

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