Research and Analytical Services
A Unit of the Division of Information Services & Planning

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Research Briefs

Student Perceptions of Their Intellectual Competencies: A Comparison of Freshmen and Graduates

An Analysis of 2006-2008 CCSSE Data

South Texas College (STC) is committed to helping students realize their academic goals: so, it is of extreme importance to the school to know how students perceive their basic intellectual competencies in the core curricula as they graduate. The Community College Survey of Student Engagement (CCSSE) provides an appropriate framework to explore this concern since it provides data regarding (1) knowledge, skill, and personal development, as well as (2) benchmarks of effective educational practice. The first is compared between entering freshmen and graduates/near graduates to assess the perception of intellectual competencies of the graduates; the latter is exploited to explore possible relationships between benchmarks and competencies.

KEY FINDINGS

- STC graduates and near graduates perceive their levels of intellectual competencies in the core curriculum higher than the entering freshmen.
- Benchmarks as a whole appear to relate better to perceived levels of intellectual competencies than individual benchmark items.
- There is no statistical difference in perceived level of speaking skills between graduates and entering freshmen.
- Nearly all survey elements of academic challenge and support for learners benchmarks are strongly related to increased learning.

IMPLIED ACTIONS

- Consider curricular changes to promote higher levels of speaking skills of graduates.
- Maintain high levels of academic learning strategies as represented in Academic Challenge Benchmark.
- Promote faculty discussion and continued study of comparisons between student effort and academic challenge activities to ensure learning activities do not become mere busywork. Increase those that truly promote learning
- Review CCSSE Benchmarks related to retention as well as learning to promote a strong balance of both.

For Policy

- Review policy and procedures to ensure appropriate academic challenge and support for all types of learners are provided across all personnel, campuses, times of day.

For Research

- Conduct focus groups to get a deeper understanding of students perceptions of how the benchmark elements increase their learning of the core competencies.
- Continue investigation of CCSSE benchmark elements and relationship to retention.
- Incorporate data from direct measures of intellectual competencies in the core curriculum to triangulate with student reported perceptions of their learning.

South Texas College

Background

STC's concern for increasing the effectiveness of instruction and support as an effort to continuously improve the intellectual competencies of its graduates prompted the necessity to compare the freshmen and graduates on their perceptions of attaining those competencies. Because STC is committed to excellence the college has participated annually since 2006 in the nationally recognized Community College Survey of Student Engagement (CCSSE). Examination of CCSSE data can help STC pinpoint and understand the differences of student perceptions of their knowledge, skills, and personal development between entering freshmen and graduates or near graduates.

Purpose of Study

This particular analysis of 2006-2008 CCSSE data was intended to serve the purpose of determining whether our graduates are acquiring in their own perception specific educational objectives from the core curriculum. Characteristics of basic intellectual competencies the graduates are expected to possess based on their core curriculum include reading, writing, speaking, listening, critical thinking, and computer and technological skills.

Methodology

Approximately 1,100 students from randomly selected course sections complete the survey each year since 2006 on a voluntary basis. For the purpose of this study, students with 0 to 29 credit hours (Entering Freshmen) were grouped in one pool and students with 60 or more credit hours (Graduates or Near-Graduates) into the second. This categorization yielded sample sizes of 2,041 and 204 for entering freshmen and graduates/near-graduates groups, respectively. First, percent of students who responded with answers of "Quite a bit" and "Very much" on their self perceptions about each of the intellectual competencies were calculated for both groups. Then, to further investigate the differences of these perceptions between the two groups, the means of each Likert-type scale were compared for statistical differences. In order to address our concerns for possible nonnormality of the data and to establish reliability of the results, a similar comparison was carried out using frequencies in each response category ("Very little", "Some", "Quite a bit", and "Very much") for each scale between the two groups. Finally, the data from the Graduates/Near-Graduates group were explored to recognize possible relationships between perception variables and benchmark items.

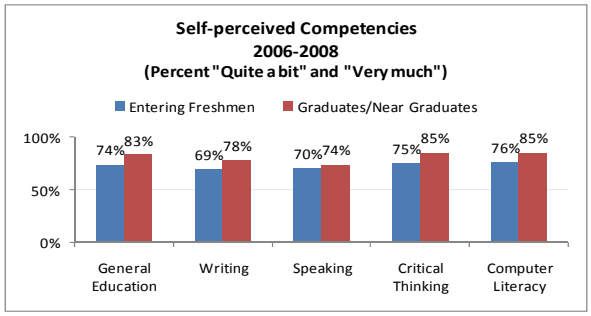

Figure 1—Intellectual Competencies

Table 1—Significant Differences between EF and GR

	Mean (4-point scale)		Effect Size	Signif. Diff.	
	EF	GR		Mean	Freq.
Gen. Ed.	3.04	3.38	.27*	↑	↑
Writ.	2.89	3.14	.19	↑	
Speak.	2.92	3.09	.13		
Crit. Think.	3.04	3.31	.22*	↑	↑
Comp. Lit.	3.12	3.34	.17	↑	
Quant.	2.80	3.11	.24*	↑	↑

* Significant standardized effect size (ES) of .20 or higher
↑ Significant positive difference between graduates/near graduates (GR) and entering freshmen (EF) at .001 level

Research Questions

The specific questions this study attempted to answer were:

- Is there evidence that STC graduates have attained intellectual competencies in the core curriculum?
- Is the perception of the competencies for graduates or near-graduates consistently higher than those of entering freshmen in each category?
- Are these differences statistically significant?
- What relationships exist between perceptions of attained competencies and benchmarks of effective educational practice?

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Findings

Student Perceptions

For the 2006-2008 three-year period, 74 percent of entering freshmen and 83 percent of the graduates/near-graduates indicate (with responses of "Quite a bit" and "Very much") that they believe they are "acquiring a broad general education". Furthermore, when we compare the perceptions of entering freshmen to those of the graduates/near-graduates regarding their acquired skills and knowledge in the areas of writing, speaking, critical thinking, and computer literacy, the graduates/near-graduates report consistently higher than the entering freshmen (Figure 1).

Further analysis of the differences of self-reported student perceptions of their skills, knowledge, and personal development reveal that there are statistically significant differences in the areas of general education, critical thinking, and quantitative skills between entering freshmen and graduates/near-graduates. The difference in speaking skills between the two groups is not statistically significant (Table 1).

Road to Learning and Retention

The study continued with an exploration of which CCSSE benchmark factors related to learning or students' perceptions of attained knowledge and skills. A parallel inquiry of factors related to retention will follow in an upcoming study. Results of correlating benchmarks of effective educational practice—categories and individual items in each category—with perceptions of achievement are summarized in Table 2. If we focus on the benchmark with its underlying items, "Academic Challenge" and "Support for Learners" appear to relate to a more complete number of intellectual competencies in the core curriculum than "Active and Collaborative Learning" and "Student Effort" do. These may be more strongly related to retention rather than learning. As an example, whereas only frequency of computer lab utilization from the student effort benchmark has a strong direct relationship with merely students' perceptions of how computer literate they are, most academic challenge and support for learners benchmark items correlate directly and strongly with a more complete number of the learning competencies. Among active and collaborative learning benchmark items, asking questions appears to correlate with general education and making presentations with writing. However, items like working with other students, working with classmates outside of class, tutoring other students, participating in a community-based project, and discussing ideas from classes with others outside of class were not significantly related to the attainment of any of the intellectual competencies. These are likely to be more relevant to creating relationships on campus which strongly impacts retention. Similarly, "Student-Faculty Interaction" benchmark items—including but not limited to using email to communicate with instructors, talking about career plans with an instructor, working with instructors on activities other than coursework—failed to have statistically significant correlations with any of the intellectual competencies, whereas they are also known to be related to student retention. Furthermore, if we focus on benchmark categories as a whole instead of single items, interestingly we recognize that all benchmark categories relate to most if not all intellectual competencies. This fact reminded us that "The Whole is Greater than the Sum of Its Parts" as similarly underlined in the CCSSE 2008 National Report.

Table 2—Significant Correlations between Benchmarks and Competencies

SIGNIFICANT CORRELATIONS to LEARNING	Gen. Ed.	Writ.	Speak.	Crit. Think.	Quant. Prob. Solv.	Comp. Lit.
ACT. & COLL. LEARN.	✓	✓	✓	✓		
Asked questions	✓					
Made presentations		✓				
Worked in groups during class						
Worked in groups outside of class						
Tutored/taught other students						
Participated in a community project						
Discussed ideas with others outside						
STUDENT EFFORT	✓	✓	✓	✓	✓	✓
Prepared multiple drafts of a paper						
Worked on an integrated project						
Came to class unprepared						
Number of books read on your own						
Preparing for class						
Peer or other tutoring use						
Skill labs use						
Computer lab use						✓
ACADEMIC CHALLENGE	✓	✓	✓	✓	✓	✓
Working harder		✓		✓		
Analyzing ideas	✓	✓	✓	✓	✓	✓
Synthesizing ideas	✓	✓	✓	✓	✓	✓
Making judgments	✓	✓	✓	✓		
Applying concepts	✓	✓	✓	✓	✓	
Performing a new skill	✓	✓	✓	✓	✓	✓
Number of assigned textbooks						
Number of written papers						
Challenging exams						
Encourage to study	✓	✓	✓	✓	✓	✓
STU-FACU INTERACTION	✓	✓	✓	✓		✓
Used email						
Discussed grades						
Talked about career plans						
Discussed ideas outside of class						
Received prompt feedback						
Worked on out-of-class activities						
SUPPORT FOR LEARNERS	✓	✓	✓	✓	✓	✓
Provide support for success	✓	✓	✓	✓	✓	✓
Encourage diversity	✓	✓	✓	✓	✓	✓
Help to cope	✓	✓	✓	✓	✓	✓
Provide social support	✓	✓	✓	✓	✓	✓
Provide financial support	✓	✓	✓			✓
Academic advising use						
Career counseling use			✓			

Future Research

Further and more detailed analyses are essential to provide a better understanding of relationships between student perceptions of learning and the contributions that benchmarks of effective educational practice make. It will also be important to distinguish how these relationships differ for most and least engaged students.

South Texas College