

Student Outcomes Assessment Committee Summary of two years of CAAP Assessment 1998 -- 2000

During the past two years the Student Outcomes Assessment Committee (SOAC) with your support has conducted four rounds of CAAP testing. This institution wide effort is one part of our activities along with classroom assessments, discipline multi-section and program assessments. The institution-wide general education assessment design is based on using six ACT-CAAP tests of general education skills in a stratified proportionate random selection of course sections. It is through the cooperation of all faculty that this type of sampling can be used as a basis for reliable generalizations about all of our students. We thank those of you who have been called upon, and look forward to working with others as random rotation targets your courses.

Responses have been collected from 2339 students in 127 sections. Information from the COD Student Tracking System has been matched to the ACT reports of scores and student responses. Based on this combination of data each case was classified as to the level of educational achievement at the time of testing (entering freshmen, mid-studies, and completing sophomores).

A complete report of research analysis is available on the Students Outcomes Assessment web site at www.cod.edu/outcomes or from members of the SOAC committee. This research utilized four approaches. First, a summary of self-report and demographic information was compiled. Second, our students were compared with national averages from ACT for both freshmen and sophomores. In a third examination the students classified as entering freshmen were compared to completing sophomores. The fourth approach utilized as many cases as possible to model the process of acquiring each of the general education skills.

The self-reports from our students indicate that 52% rank transferring to a college or university as their most important goal. An additional 33% rank earning an Associate Degree as most important and 5% rank earning a certificate as most important. Students spend an average of 4.25 hours per week studying for their average class, with freshmen reporting 3.5 hours per class per week, compared with 4.8 hours among completing sophomores.

Other self-reported feedback on the impact of courses on general education is summarized later in this summary.

COD students and national averages

Data relevant to the second and third research questions are summarized on the following table. When examining these averages, or if you aren't a table reader, it may be helpful to keep in mind the following conclusions. The COD freshmen

average for writing skills is significantly lower than the national average, and the COD freshmen averages for math and critical thinking are significantly higher than the 2-year public college average. For completing sophomores the average for math is higher than the sophomore 2-year college average. For sophomores the other five COD averages are similar to the national averages.

COD and national averages		N	Mean	Std. Dev.	95% Confidence Interval for Mean		Two-year Public Colleges	Four-year Public Colleges
					Lower Bound	Upper Bound		
WRITING SKILLS	Freshmen	50	59.78*-	5.00	58.36	61.20	61.1	63.2
	Mid-studies	100	61.41	5.43	60.33	62.49		
	Sophomores	56	63.07	5.39	61.63	64.51	62.6	64.4
MATH	Freshmen	52	56.87*	3.51	55.89	57.84	55.9	58.7
	Mid-studies	103	57.23	3.96	56.46	58.01		
	Sophomores	51	59.02**	5.07	57.59	60.44	56.2	58.1
READ	Freshmen	47	59.77	5.16	58.25	61.28	59.1	62.4
	Mid-studies	104	59.94	5.33	58.91	60.98		
	Sophomores	56	61.09	5.26	59.68	62.50	61.0	63.0
CRITICAL THINKING	Freshmen	52	60.17*	4.54	58.91	61.44	59.1	61.8
	Mid-studies	93	61.13	5.77	59.94	62.32		
	Sophomores	49	61.47	5.85	59.79	63.15	61.1	62.1
SCIENCE REASONING	Freshmen	43	57.05	3.96	55.83	58.27	57.1	61.1
	Mid-studies	97	58.15	4.56	57.24	59.07		
	Sophomores	52	60.13	4.69	58.83	61.44	58.9	61.0
ESSAY	Freshmen	52	3.327	.6234	3.153	3.5005	3.2	3.0
	Mid-studies	122	3.207	.6686	3.087	3.3268		
	Sophomores	42	3.316	.6876	3.101	3.5297	3.2	3.3

The third question addressed is whether COD students change significantly from entering freshmen level to their completing sophomore performance. Freshmen performance significantly improved in the general education skills areas of writing skills, math and science reasoning. In the other three areas, Reading, Critical Thinking and Essay writing the sophomores' average score was not significantly different from the freshmen average score.

General Education

A focus for assessment of general education skills development at College of DuPage begins with the definition of general education. Based on our catalogue statement seven outcomes emerge. While it is our intent to gather evidence focusing on each of these outcomes, no single approach provides a complete examination. The first three general education outcomes have, thus far, been assessed only through self-reports from students. Given that these are self-reported the rankings may be considered as reflective evaluations rather than direct behavioral reports. The next three outcomes are more easily examined using objective measures since they are skills based. Using the patterns of evidence gathered through two years of general education skills testing using the ACT-CAAP standardized tests some general conclusions can be drawn. The following items summarize conclusions based on these two-year's cycles of outcomes assessment.

The aims of general education are to enable students to:

1. Understand and appreciate their culture:

Among completing sophomores, 35.4% report their College of DuPage courses have meaningful or significant impact on their **cultural appreciation**. This contrasts with 21% to 22% among entering freshmen and mid-studies students. Although only about one-third of the students report significant impact, the change indicates a significant increase in students' evaluation through on-going attendance.

2. Understand and appreciate their environment:

Among completing sophomores, 36.5% report their courses have meaningful or significant impact on their **environmental appreciation**. This ranking is substantially higher than the 16.5% ratings among mid-studies students. The 33% ranking among entering freshmen, however, might reflect instability in such self-appraisals.

3. Develop a system of personal values based on accepted ethics that lead to civic and social responsibility

Among completing sophomores, 42.5% report their courses have meaningful or significant impact on their developing a system of personal values based on accepted ethics that lead to civic and social reasonability. This contrasts with similar rankings of 38.6% among entering freshmen and 26.5% among mid-studies students. The U-shaped reports of impacts may reflect first flush of exposure to college-level thinking, followed by mid-studies uncertainty and development of more complex ethical positions.

In each of these three assessments the restrictive nature of self-reports needs to be considered. These data may provide a beginning baseline for consideration and discussion.

The general education outcomes 4 through 6 are skills areas where direct measurements of student proficiency were obtained from the ACT-CAAP testing over the past two years.

4. Attain skills in analysis

Assessment of skills development in analysis may be inferred from two of the subject area tests in the CAAP battery – critical thinking and scientific reasoning. Results from the **Critical Thinking** test indicate that entering COD freshmen are significantly higher than the national average for freshmen at two-year public colleges as reported by ACT¹ (60.2 : 59.1). In contrast completing sophomores exit at the sophomore two-year public

¹ The averages reported in these comparisons are those for freshmen and sophomores at two-year public colleges. Hereafter simple referred to as the “national norm.” The norms used were those published in the *Fall, 1999 CAAP User Norms*.

college national average (61.5 : 61.1). The change from entering freshman to completing sophomore is not statistically significant.

Results from the **Science Reasoning** test indicate that Freshmen enter at the national average and sophomores exit at the national average. While the comparison to national norms indicate “at level” performance, the change between freshmen and sophomores is significant as is the change between mid-studies and completing sophomores.

Thus in the area of developing general education skills in analysis as indicated by these two tests the students attending COD are in-step with other two-year public students.

5. Skills in communications

The broad goal of developing skills in communication is frequently divided into four more specific skills that are described by two dimensions. One of these dimensions is the format dimension of written and oral; the second dimension is the modality of receiving or producing. The four skills are reading, writing, listening, and speaking. The CAAP skill-area tests cover two of these. In the area of writing skills CAAP has both a multiple-choice instrument and a writing sample essay instrument. In the area of reading the CAAP examines college level skills² in both the humanities and social sciences. The current general education skill development assessments do not include measures focused on listening or on speaking skills.

Results from the **College Reading** tests indicate that Freshmen enter at the national average and exit at national average. The change from freshman to sophomore is not statistically significant. Both the entering Freshmen and completing Sophomore average COD scores are below the comparable norms; however, these deficits are not statistically significant in this two-year comparison.

Results from the **Writing Skills** tests indicate that entering freshmen are significantly below national average and that completing sophomores are at the national average. Change from freshmen to sophomore level is significant. Based on this test, a multiple-choice instrument, it is reasonable to conclude that students improve their understanding of conventions of standard written English. Results from the **Essay** test, a writing sample format, indicate that entering freshmen and completing sophomores are both at the national average. It should be noted that the national averages for both the freshmen and sophomores at two-year colleges are the same 3.2. The change in COD’s average scores between freshmen and sophomores is not statistically significant.

6. Skills in quantification – mathematics

General education skills development in quantification is most directly linked to outcomes measured by the Mathematics CAAP test. Results

² “The CAAP reading test measures reading comprehension as product of skill in referring, reasoning, and generalizing.” These are skills generally developed in content courses by students as part of post-high school studies.

indicate that entering freshmen are significantly higher than national norms. Completing sophomores are also significantly higher than the national average. Significant change is observed between both the entering freshman to completing sophomore, and the mid-studies to sophomore categories.

7. Skills in synthesis

Assessment of the seventh general education outcome requires gestalt approaches that have not yet been designed or implemented. Some indication of student, employer, and community satisfaction in this area are possible from other assessments including student satisfaction surveys and community needs studies.

Modeling Acquisition of General Education skills







The fourth approach to utilizing the results from the CAAP testing focused on developing models of general education skills development. The models for math and reading skills development are the strongest examples. These two models contrast in their explanations. In the case of math, these general education skills are clearly gained through enrollment in math courses. In contrast college reading skills are developed through course work across the curriculum. As we move forward this year with the implementation of a reading center, it may be helpful to keep in mind a three-tier classification of students. There are some students who have the meta-cognitive and college reading skills needed to work with text and original source data. It is these types of skills that all of us needed to develop in college and in our majors to move from novice freshmen to scholars.

Some students have the pre-college reading skills, but they need to develop college level skills that support drawing meaning, analysis, and critical thinking from their texts and reading assignments. It is this type of student that we can support through the instruction in context of our courses. While some of these college reading skills can be developed in study skills courses, **they can also be encouraged and developed in classrooms by subject area instructors as a part of pedagogy when teaching their courses.** Providing support for faculty interested in improving teaching-learning is a part of services available from the Teaching Learning Center and the Reading Center.

Finally, some students do not yet have pre-college reading skills. These are the students who can clearly benefit from developmental reading programs. Their reading skills require attention beyond the scope of the context instruction of content courses.

What's important here is to remember that there is a process of learning "college" reading, and those skills are developed in our courses. We, the classroom teachers, can do something about this skill development without distracting from our course content, our students will learn more when we help them learn smarter.

Summary of conclusions

-  The strongest pattern of development of general education skills by College of DuPage students is acquisition of mathematics -- quantification skills.
-  Also evident is a pattern of improvement in writing skills as measured through multiple-choice items covering understanding of conventions of standard written English.
-  No significant change occurs in development of essay writing skills as measured in a writing sample (which is similar to the pattern in the national norms).
-  Although our students demonstrate significant increases in their science reasoning, the completing sophomore average is not significantly higher than national norms.
-  Although our students perform at national two-year norms, no significant change occurs in college reading skills. Improving college-level reading skills is probably the single most important outcome. It's worthy of support because college-level reading skills are direct prerequisites to critical thinking and reasoning.
-  While freshmen enter with significantly higher critical thinking skills than the national average, they exit at the national average. There is no significant improvement in their critical thinking skills. This general education skill is one that can be developed in a wide variety of content and skills based courses across our full curriculum.

The bottom line conclusion justified by these observations is that College of DuPage students are similar to other 2-year public community college students. Although average, their general education skills could be increased by recognizing and implementing some classroom changes in pedagogy. Such development should focus on ways in which faculty can support skills development across the curriculum while providing subject-area learning. Improving general education skills development is a key to increasing student understanding and knowledge of content areas. For the mid-range of our student body that development is best accomplished within the context of their subject-area courses.

Your subject area

Responses to the 2000 CAAP Results

Considering the summary of General Education skills acquisition and CAAP test results summarized on the previous pages:

1. What is your response to the findings, growth, or lack of growth demonstrated by College of DuPage students in developing general education skills and competencies?
2. What changes would you consider as appropriate outcomes to work towards?
3. What research questions or focuses would you suggest the Student Outcomes Assessment Committee address in future institution-wide assessment?
4. What changes or response did you make in reaction to last year's CAAP information?
5. What resources, information, or other support would you find helpful in making changes that would be supportive of student learning and your teaching?

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