General Education Assessment
Fall 2008

Categories Assessed: Natural Science, Social Science

In Fall 2008 the University at Albany assessed the degree to which students were achieving the student learning outcomes in Natural Science and Social Science. As with previous assessments the class-based sample was chosen to be generally representative of the categories rather than random. The Natural Science category sample included nine classes with enrollments ranging from 12 to 475 students in four different departments. Unfortunately, faculty participation in this category was very low. Although the sample just met the SUNY mandated sample minimum of 20%, of students enrolled in Natural Science General Education classes, as classes were oversampled, only 3 instructors sent back completed Forms 1s and only 4 completed Form 2. The Social Science category sample was also chosen to be as representative as possible. Thirteen classes from nine departments with enrollments ranging from five to 441 were included. Eight of the thirteen instructors returned Form 1, and eight returned Form 2, capturing 21.8% of the total enrollment in the category.

Natural Science Results

Course Embedded Assessment

- The majority of students (63 - 76.2%) “Met” or “Exceeded” expectations for all four learning objectives.
- There was an alarmingly high percentage of students (21%) who “Did not meet” Objective 2 (“Students will demonstrate an understanding of the application of scientific data, concepts, and models in the natural sciences”).
- Similarly, 17% of the sampled students “Did not meet” Objective 3 (“Students will demonstrate an understanding of the major principles and concepts that form the basis of the knowledge covered in the course and a command of the relevant terminology appropriate for basic discourse in the particular discipline or disciplines of the course”).
- And 15.6% of sampled students “Did not meet” Objective 4 (“Students will demonstrate that they have become more knowledgeable consumers of scientific information and are prepared to make informed decisions on contemporary issues involving scientific information acquired in the course”).
- While the campus has not set specific benchmarks for the results, and the results came from only 4 classes, they should be reviewed carefully by the General Education Assessment Committee.

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Student Perceptions of General Education Program Course Survey Results

- Although 180 students in this category completed the Perceptions Survey with valid responses, that number represents less than half of the sample and only the opinion of students in three classes out of the nine in the sample.
- About one third of respondents answered “Considerably”\(^1\) when asked about whether their class fulfilled their expectations with regard to the general outcomes of the program, and another third answered “Greatly.”
- The percentage of respondents who answered that their class fulfilled their expectations with regard to the outcomes of the General Education program as “Very little” was between 4.3 and 9.3%.

Social Science Results

Course Embedded Assessment

- The majority of students assessed (65.1 - 83.2%) “Met” or “Exceeded” expectations.
- In contrast to the Natural Sciences category, fewer students “Exceeded” (14.6 - 20.6% vs 33.2 - 54.9%) but more “Met” (48.4 - 64.7%).
- There is cause for concern about the number of students who are “Not meeting” the Social Science learning outcomes.
  - In three out of the five learning outcomes the percentage of student who “Did not meet” the learning objectives was over 15%.
  - Almost one quarter (23.6%) of the students “Did not meet” expectations for the third outcome (“Students will demonstrate an understanding of the kinds of questions social scientists ask and the ways they go about answering these questions”).

Student Perceptions of General Education Program Course Survey Results

- Well over one thousand students completed the perceptions survey, over three-quarters of the students in 10 out of the 13 classes in the sample.
- About one third of respondents answered “Considerably”\(^2\) when asked about whether their class fulfilled their expectations with regard to the general outcomes of the program, and at least another third answered “Greatly” to all but Question 8 (“To what extent did this course help you gain an understanding of the difference between rigorous and systematic thinking and uncritical thinking about social phenomena?”) which only 23% answered “Greatly.” The percentage that answered “Very little” was less than ten per cent across the survey items, except for question eight (see above) to which 10.8% answered “Very little” and another 22.9% answered “Somewhat.”

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\(^1\) The scale of possible answers on the survey ranged from “Very little,” “Somewhat,” and “Considerably” to “Greatly.” Those who chose “Not applicable.” Were not factored into the percentage calculations.

\(^2\) Same scale used as for Natural Sciences.
Observations on the Assessment Process used for the Natural and Social Science Learning Objectives

1. The number of instructors who participated in the assessment was quite low, and this impacted the resulting sample, particularly in the Natural Science category where less than half of faculty asked to participate sent back their forms and materials. Low participation hampers the ability of the faculty and administration to draw conclusions from the results. While faculty participation in the assessment of the Natural Sciences category was particularly low, it has been historically problematic in other categories as well. Feedback provided by faculty indicates dissatisfaction with the process and workload concerns.

   **Recommendation:** That the General Education Assessment Committee investigate the reluctance of faculty to more fully participate, and explore modifying the assessment process to promote faculty participation.

   **Recommendation:** That the administration and the General Education Assessment Committee continue to work on streamlining the process to achieve valid results without overburdening faculty.

2. The number of instructors that returned Student Perceptions surveys was quite low in the Natural Science sample (3 out of 8 classes to which they were sent. One instructor refused them). This was significantly lower than it had been in the previous two years. Students were not provided the opportunity to provide input about their experiences in these courses, which is a valuable part of the assessment process.

   **Recommendation:** That the General Education Student Perceptions Survey be changed to an electronic format to allow students who wish to complete them the opportunity to do so, and to support the university’s efforts towards environmental stewardship and sustainability.

   **Recommendation:** That students be notified of the availability of the results of the General Education Student Perceptions Survey, and a way created for students to be able to view the results e.g. via a link.

**Appendix A**

**Student Learning Outcomes – Natural Sciences**

1. Students will demonstrate an understanding of the methods scientists use to explore natural phenomena, including observation, hypothesis development, measurement and data collection, experimentation, evaluation of evidence.

2. Students will demonstrate an understanding of the application of scientific data, concepts, and models in the natural sciences.

3. Students will demonstrate an understanding of the major principles and concepts that form the basis of the knowledge covered in the course and a command of the relevant
terminology appropriate for basic discourse in the particular discipline or disciplines of the course.

4. Students will demonstrate that they have become more knowledgeable consumers of scientific information and are prepared to make informed decisions on contemporary issues involving scientific information acquired in the course.

**Student Learning Outcomes – Social Sciences**

1. Students will demonstrate an understanding that human conduct and behavior more generally are subject to scientific inquiry.

2. Students will demonstrate an understanding of the difference between rigorous and systematic thinking and uncritical thinking about social phenomena.

3. Students will demonstrate an understanding of the kinds of questions social scientists ask and the ways they go about answering these questions.

4. Students will demonstrate knowledge of the major concepts, models and issues of at least one discipline in the social sciences.

5. Students will demonstrate an understanding of the methods social scientists use to explore social phenomena, such as observation, hypothesis development, measurement and data collection, experimentation, evaluation of evidence, employment of mathematical analysis, employment of interpretive analysis.