

## **Assessing a General Education Program through a “Capstone” Course**

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When and where to measure student learning can be as important decisions in student outcome assessment as the determination of why, what, and how to measure. At Plattsburgh State University of New York the General Education Committee has been promoting the use of our upper-division “capstone” course as the most appropriate venue for student outcomes testing. Here we present what we consider to be the primary advantages of this approach. We also discuss some of the challenges of implementing student outcomes assessment in a capstone course and possible ways of overcoming them. Our discussion draws upon our experience assessing our general education program first with respect to Plattsburgh-established student outcome objectives and then with respect to the learning outcomes for general education established by the State University of New York (SUNY).

### **Plattsburgh’s General Education Program**

The general education program that is current for most of our students is an adaptation of one in effect prior to implementation in 2000 of the SUNY Trustee’s Resolution 98-241. This resolution established a 30 credit hour General Education Requirement encompassing 10 knowledge and skills areas and 2 competencies for all baccalaureate degree candidates. Plattsburgh’s nine objectives for general education cover all the SUNY general education learning outcomes, as they were elaborated by the SUNY Provost’s Advisory Task Force on General Education, although they are packaged somewhat differently and include additional intended outcomes as well. Our program consists of 9-14 credit hours in 4 Learning Skills categories; 28-32 credit hours in 8 Distributive categories; and 3-4 credit hours in one Perspectives category. (See [www.plattsburgh.edu](http://www.plattsburgh.edu).) Except for two skills categories (Written Expression and Library Research Skills), there are several courses in each category, and in most cases the courses are offered by more than one department. Ideally, courses in the Distributive categories build upon those in the Learning Skills categories, and courses in the Perspectives category in turn build upon both the Distributive and the Learning Skills courses.

The one Perspectives category in our current program is entitled Global Issues. Courses in this category are intended to encourage students to use what they have learned in Learning Skills and Distributive courses (and elsewhere in the curriculum) to think globally as world citizens. All courses in this category are upper-division courses intended for students who have completed 60 or more credits, including the Learning Skills and Distributive requirements. Since the Global Issues requirement is intended to broaden a student’s outlook, the course taken to fulfill the requirement must be outside the student’s major department and cannot be a cognate requirement for that major. In practice, many Global Issues courses meet the needs of a major program as well as

general education, and in any Global Issues class there are likely to be a mixture of students majoring in a variety of disciplines. These upper-division Global Issues courses, which serve as “capstone” courses for our General Education Program, also serve as a venue for much of our student learning outcomes assessment in general education.

### **General Education Student Learning Outcomes Assessment at Plattsburgh**

In 1998-2000 we adapted an approach to general education assessment developed by SUNY Fredonia (Amiran 1993, 1999). We administered four assessment instruments (one per student) to three categories of students in two settings; incoming freshmen and incoming transfer students were tested during summer 1999 orientation, and returning juniors and seniors were tested in a sample of upper-division courses in fall 1999. Faculty/staff teams read and scored a sample of the student responses (without knowing the level of the student). When the results were analyzed, we saw that with respect to almost all criteria juniors/seniors performed better than incoming transfer students, and the latter performed better than incoming freshmen, but the differences were not statistically significant. The disappointing results overall in some areas were widely discussed on campus and inspired some faculty to consider alternative approaches to education in those areas. Both the assessment approach and the results influenced the development of a new general education plan then under discussion.

In 1999 our longer term general education assessment plan called for moving to a longitudinal model by retesting the 1999 incoming freshmen who were still at Plattsburgh in spring or fall 2001 and testing incoming freshmen (using revised instruments and procedures) every other summer orientation. We carried out the assessment with incoming students in summer 2001, and we contacted all the students who had taken the assessment in summer 1999 as freshmen and asked them to do it again. Since there was no occasion on which they would all be together, and we could see no way to embed this in courses, we set up a number of times and places, an elaborate system of matching students to assessment instruments, and a schedule of assessment administrators and offered each student \$10 for half an hour of their time. Of the 300 some students we contacted, only 25 could be persuaded to participate.

The SUNY assessment initiative adopted in December 2000 required that we change the direction of our general education assessment activities. In accordance with this initiative, each campus was expected to develop a plan for the assessment of the SUNY general education learning outcomes (Provost’s Advisory Task Force on the Assessment of SUNY Learning Outcomes 2000) and the review process guidelines developed by the General Education Assessment Review (GEAR) Group specified that assessment of all the knowledge and skill areas and competencies should be completed within a three-year cycle. In 2002-03 we undertook to measure student skills and abilities with respect to the SUNY learning outcomes in Mathematics, Information Management, Critical Thinking, and Foreign Language. Each assessment instrument was designed by a team including faculty who teach in the general education categories most closely connected with the learning outcomes as well as members of the General Education Committee. These teams were asked to recommend to the General Education Committee whether the assessment should be carried out in the classes most closely connected with the particular learning outcomes or in the capstone course. For

Mathematics, Information Management, and Critical Thinking, the decision was to administer the instruments to students enrolled in Global Issues classes (one instrument per class). In contrast, student learning outcomes in the Foreign Language area were measured within the first-semester language courses. This year (2003-04) we are again carrying out general education assessment in the Global Issues classes for three of the SUNY learning outcomes areas (Social Sciences, Natural Sciences, and American History). Assessing student learning outcomes in Basic Communication is being done in conjunction with courses in two Learning Skills categories of our general education program (Written Expression and Oral Expression). The choice of venue for general education assessment was again based on the recommendation of the faculty teams that developed the assessment instruments for each area.

### **Advantages of Assessing General Education Learning Outcomes in a Capstone Course**

The advantages we see in using the upper-division capstone course for the assessment of general education are:

1. This approach fits our campus culture, which embraces the concept of general education as more than a collection of unrelated courses. This concept is reflected in the structure of the program described earlier, and it is expressed in college publications that present the General Education Program as a basis on which all majors are built. In addition, we believe that general education can occur in all courses--that a student might learn content or theory related to the social sciences in a history or philosophy course, for example, and that he or she might also learn science in a social science or literature course. We also believe that general education should be cumulative. Learning in any general education area should not stop once a student completes the course that the program specifies for a particular learning outcome. Thus, in terms of the curriculum and our assumptions about general education, it makes sense that assessment would be done in a capstone course. Measuring student skills and knowledge in a capstone course should allow us to capture the value added by synergism from all courses.
2. Our campus culture also includes the idea that general education is the responsibility of the faculty as a whole. This faculty-wide responsibility for the program is expressed through the program's governance structure: A Faculty Senate Standing Committee on General Education is responsible for reviewing all courses proposed for general education credit and periodically the program as a whole. In practice, this committee has judged courses by the extent to which they foster the objectives of the General Education Program as a whole and the particular category for which they are proposed, irrespective of their academic discipline. Assessing the learning outcomes through the capstone course ensures that faculty from a variety of departments (not limited to those that offer courses in the categories most closely associated with that particular student learning outcome) are involved in assessing the various learning outcomes. Thus, it is in keeping not only with our campus culture but also with the Middle States Association's Guiding Principle #3 that supports "involvement of

faculty members, staff, administrators, and students across the institution” (MSCHE 2003:3).

3. Separating the measurement of student knowledge and skills from the specific courses most closely associated with particular learning objectives minimizes the pressures on instructors to “teach to the test” and associated pedagogical problems. If we are agreed on the intended outcomes, one might ask, then, why is “teaching to the test” to be avoided? First, we hope that our classes and our program is doing much more than just achieving the SUNY learning outcomes; to the extent that instructors concentrate on these particular outcomes they may ignore others that many consider to be more important. Second, any test or assessment tool that we, or others, devise is an imperfect measure of the intended outcome. Thus, teaching to the test may even undermine true achievement of the intended outcome.
4. Using a capstone course as the venue for the measurement of student knowledge and skills helps to keep the focus more clearly on program assessment (rather than class assessment or instructor evaluation). Not only can this be advantageous in terms of understanding the effects of the program, it also eases the resistance of some faculty to assessment and helps to separate assessment from instructor performance evaluation.
5. Because the students in a capstone course have met specific general education requirements by a variety of means, this approach provides more useful data for program assessment purposes. For example, among the 233 students who completed our assessment instrument in Information Management in spring 2003, 156 had completed the library research skills course at Plattsburgh, 16 had passed a proficiency test, and 7 had transferred in credit for this course. In addition, although all students are supposed to have completed their lower-division general education requirements before taking their Global Issues course, 43 of the students who completed the Information Management assessment instrument had not satisfied Plattsburgh’s general education requirement in this area, and Plattsburgh’s requirement had been waived for 11 students who transferred to Plattsburgh from other SUNY institutions and who were certified by the previous institution as having met the SUNY requirement by means other than a credit-bearing course. Overall scores were high in all three of the information management learning outcomes (perform the basic operations of personal computer use; understand and use basic research techniques; and locate, evaluate and synthesize information from a variety of sources), and we are pleased with the success of our program in this area. It is interesting to note, however, that the 4 students who had taken our course and failed it scored higher than those who had passed! (Perhaps this is an artifact of small sample numbers.) We also noted that those who met the requirement through success on a proficiency exam scored higher than those who had completed the class, verifying through this second means their proficiency. By comparing the performance of different groups on each of the three learning outcomes in this area, one can also see that those students who have neither taken a class nor passed through proficiency are farthest behind in locating, evaluating, and synthesizing information, suggesting that

this is where our course is the strongest. In contrast, those who have not taken the course scored higher on the basics of computing than did those who took the course. This may be an area in which our course can be strengthened. We are undertaking similarly analyses of the student responses to the Mathematics and Critical Thinking assessment instrument, comparing, for example, the responses of those who had completed our math requirement with those who had not and those who had completed 60 units of course work and those who had not.

6. Involving faculty from a variety of disciplines in conducting assessment, as seems more likely to occur when it is done through a capstone course, can in itself lead to improvements in a general education program. The instructors participating in the design of our assessment instruments come from different departments and teach different courses all intended to achieve the same learning outcomes. Working together on assessment provides an opportunity for them to learn what others are doing in their courses to achieve similar objectives and exposes instructors to different teaching approaches and emphases. And, although some departmental representatives are initially reluctant to participate in assessment for various reasons, others can see some advantages and have an opportunity in this forum to express their interest, if not enthusiasm. Furthermore, helping to design the assessment strategy and instruments gives even skeptical faculty a vested interest in the process. For years we looked for meaningful ways to get the various instructors participating in the same distributive category together to talk about their courses in that category, but were unable to achieve any sustained dialogue. This assessment program creates a venue for such a dialogue.

### **Challenges of Assessing General Education Learning Outcomes in a Capstone Course**

The challenges of measuring students' skills and knowledge in a capstone course (as compared to measuring student learning outcomes in the general education classes most directly responsible for the skill/knowledge area) include:

1. It is more difficult to truly embed the assessment instrument in the class, and this results in some lack of motivation to perform well on the assessment instrument. We have attempted to embed the instruments and encourage motivation by designing questions with a global issues theme and by making clear to students that participation is an expected part of their course. The latter is done in the introduction to the exercise presented by the members of the General Education Committee who administer the instrument; by having students sign out and letting them know that we share the attendance sheet with their instructor; and by letting students know that their instructor will have access to their responses and can use these as he/she sees fit. We encourage instructors to show their support for general education assessment by being

present at the beginning and end of the assessment; by telling students that they will give at least participation credit for completing the assessment; and/or by telling students they will discuss the assessment question/responses at a later class. Despite our efforts, some students always finish a 45-50 minute exercise within 15 minutes; some turn in papers with very little written on them (although few are totally blank); and few take full advantage of the time allotted to give thoughtful, thorough responses. We may well be getting a less accurate read of our students' abilities/accomplishments, and of their particular strengths and weaknesses, than we would if the instrument were fully embedded in a course.

2. Since retention of some types of knowledge and some skills declines over time, overall performance levels even of highly motivated students may be lower when the assessment instrument is completed as much as two years after the primary course directed toward the learning outcome, particularly if the assessment instrument focuses on very specific knowledge and/or skills that receive little reinforcement. Therefore, assessing general education learning outcomes in a capstone course may lead to somewhat lower scores in some areas. This is only a disadvantage, however, if the scores are being compared with those of institutions that carry out assessment in closer connection with particular courses intended to produce the outcome. Under SUNY's current, campus-based assessment system, in which each campus determines when, where, and how to assess general education outcomes and sets its own standards for exceeding, meeting, approaching, and not meeting the outcomes, such inter-campus comparisons are inappropriate in any case, especially as a measure of comparative student performance. (They might be interpreted as a comparison of the difference between the expectations of faculty and the performance of students, but even that assumes that faculty expectations have been accurately calibrated to scoring outcomes.) Nevertheless, once the data are collected and reported, there is the potential for such inappropriate use with possible politically damaging results. We are taking this risk because we are interested in the degree to which students retain the skills and content after they leave the particular general education course in which they are supposed to be most heavily exposed to them. General education is about lifelong learning. We want to know, for example, whether students' math problem solving skills stay with them after they take the class. If not, we would like to develop ways of increasing that retention.
3. Some other principles of good assessment are more difficult to implement when assessment is done in a capstone course, at least with the type of instrument and sampling techniques we have been using. For example, we are not able to provide individual students with feedback on their performance, as advocated by the Alverno College Faculty (1994) among others, because we don't have the resources to score all the responses, nor can we provide their instructors with the student scores (although we can and do provide them with unscored copies of the responses).
4. Another principle of good assessment practice is that students should know in advance the criteria on which their performance is being rated (MSCHE 2003:44-45). Since the assessment instruments we use and associated rubrics were developed after the

students whose performance was assessed had completed most of their general education program, they could not be shared with them in advance. As the faculty become more aware of the learning outcomes and the criteria that have been used to assess student learning, however, they may build them (and/or awareness of them) into their courses. Even as the assessment instrument for the Social Sciences was being developed last year, for example, some participating faculty were contemplating changing some features of their introductory social science classes to incorporate the rubrics. Over time this assessment program may cause instructors to more systematically inform students of the learning objectives of the course and to let students know that they will be tested on them in the future.

5. General education assessment in a capstone course, at least as we have implemented it, is not as efficient as truly course embedded assessment in a key course directed toward the learning outcome could be. Our approach requires instructors of Global Issues classes to set aside 50 minutes of class time for a purpose that is not (yet) well integrated into the curricula of those courses; it requires General Education Committee members (rather than class instructors) to implement the assessment; and it requires teams of faculty/staff to score the responses outside the context of their other teaching/professional responsibilities. We can make our system more efficient (by having instructors administer the assessment instruments, for example), but there may be some losses in doing so. In addition, the collection of background data on students who have completed the assessment instruments and the analysis of these data in conjunction with scores, while yielding information potentially more useful for program improvement purposes, is also time consuming and labor intensive.

## **Conclusion**

As is so often the case, many of the advantages and disadvantages or challenges we have discussed are two sides of the same coin. Involving a larger number and wider range of faculty/staff in assessing general education is good in engendering greater faculty ownership of both the general education program and assessment; but it is more expensive/less efficient. Assessing in a capstone course (especially if students are well motivated) may give us a more accurate reading of what students are taking away from their college experience, but their scores may be lower with respect to very specific knowledge and some skills. And carrying out the assessment in a capstone course with students who have met the requirement in the targeted area by a variety of means (or not met it at all) produces more useful data, but the administration of the assessment instrument and the analyses of the results are more complicated and labor intensive.

Despite the challenges, we remain convinced that assessment in a capstone course is a more useful approach to the assessment of a general education program than is assessment carried out in all the component courses.

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