Effective Assessment and Institutional Change

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At Bowdoin College, we have seen evidence that assessment is an important component of educational planning and can lead to institutional change. We regard assessment as the process of systematically gathering information to use in making decisions about educational programs. We know that discussions related to assessment can cause people to think differently about their ideas, influence faculty to make adjustments to programs as they are being implemented, and lead top-level decision makers to implement changes in educational activities, programs, and curricula that they would have been unable to imagine without the information that comes from assessment. Assessment is feedback, and feedback helps ground us in our decision making, moving us forward.

Faculty are often reluctant to carry out an assessment plan, even if they have some sense of its importance. They may believe that assessment is always related to accreditation, that is, something undertaken by administrators to satisfy the needs of the regional accrediting agency. We believe that assessment is an essential and integral part of every institution that enthusiastically and consistently endeavors to strive for excellence. We have tried to overcome this reluctance to assess by injecting assessment into one way that faculty connect with educational innovation: securing external support for new and expanding curriculum and research programs and projects.

This effort to weave assessment into the fabric of Bowdoin is a partnership between us: One of us is the director of corporate and foundation relations and the other the director of institutional research. Having collaborated informally on a number of grants, we spoke with senior administrators and established a more public relationship that shows the useful
connection between assessment and program development. Tied tightly to
the design of new programs from the very beginning, assessment will be a
positive tool for effecting long-lasting and vital change on campus. It took
us several conversations to arrive at a consensus that setting up institutional
criteria for assessment in the process of developing new proposals would
ultimately benefit the college as well as the faculty member seeking fund-
ing for research or a curriculum innovation.

We see three ways in which assessment connects to programs:

- **Program planning.** Because most people think of assessment as some-
  thing that happens when the program is finished, it is surprising for many
  faculty to realize the ways in which assessment can help at the very begin-
  ning, when an idea—a new approach to teaching, a curricular modification,
or a faculty development program—is being explored and clarified. Because
designing a plan for assessment necessitates clarifying the idea and goals of
any project as well as thinking about the hoped-for outcomes of the proj-
ect, assessment becomes a helpful part of the process of thinking through
the idea. The clarity that has come to planning by having someone familiar
with the principles and techniques of assessment cannot be overestimated.

- **Program implementation.** Evaluators use the term *formative evalua-
  tion* to talk about the techniques used to gather feedback while the program
is in place, when project directors can use feedback in making adjustments
and improving the program. This is not necessarily a new notion to faculty;
many are familiar with making adjustments in a course when things are not
going particularly well. The idea is the same: gather meaningful data, use
them to understand what is happening, and adjust the program accordingly.

- **Program summation.** This is the final exam, the summative evalua-
tion, and faculty understand this well. This is the point at which project or
program implementers use assessment techniques to determine whether
they have met their goals and objectives. But there is more. Leery of the pos-
sibility of reductionism coming from assessment, faculty have been excited
by the way in which we have used assessment to determine the broad
impact of the program, as well as the unanticipated outcomes. This is often
the most exciting part of the assessment. Project directors analyze the data,
review the findings, and absorb interview transcripts. The ensuing discus-
sion leads people to see that the program had a greater, more varied impact
than anyone predicted. Because the faculty or project directors implemented
the program with the critical mind-set that accompanies assessment, change
occurred, and often it was unanticipated change. Then the cycle begins
again. The faculty see the next step emerging from the findings of the assess-
ment, and a new idea is born. Now familiar with the process of assessment,
faculty members see its applications to course design, student evaluation,
curriculum development, and more. As a result, the institution becomes
more and more attuned to change.
What we have arrived at is a team that works with faculty on all institutional grants. This has brought coherence to our assessment practices overall and helps avoid the faculty’s frustration of writing an assessment component into their proposals. The advice of this team is offered through the dean’s office, thus giving the team’s work an institutional stamp of approval. The team leaders (grants officer and institutional research director) train faculty who are preparing to write proposals on the nuts and bolts of an assessment plan from the perspective of the specific aims of their proposed project; attention is also given to how the project will work and the institutional goals into which that project must fit. They then move to the sidelines, where they can serve as coaches, reviewing and editing proposal drafts as they emerge from the faculty.

As faculty and other administrators have become more familiar and comfortable with evaluation, they have begun using it as a lens for reexamining their courses and assessing other parts of the curriculum. Here is one example of how the process worked to benefit all concerned: the faculty member with a new idea, the students in his classroom and lab, and the broader Bowdoin culture and community.

A biology faculty member had been working out an idea for teaching introductory biology differently. The enrollments in introductory biology courses at Bowdoin are large (for a liberal arts college): about a hundred each semester, totaling two hundred students per year, or nearly half of the first-year class. Due to the size of the classes, students do not get much one-on-one time with the professor, a hallmark of strong undergraduate science programs.

The professor, a developmental biologist with a talent for developing creative, animated software, approached the head of Bowdoin’s Educational Technology Center (ETC) with an idea for personalizing the introductory biology experience. The head of the ETC was supportive of the idea and proposed developing a “smart course,” sometimes known as an adaptive learning course. Smart courseware has the ability to know students and the way they learn. It “remembers” what a student has accessed on-line (for example, charts, lectures, and resources). It also recognizes the speed at which the student learns, what courses have been completed, grades on all materials, and preferred professors—in short, the unique learning style of the student. Smart classes link evaluation and assessment to instruction and content in a closed circle.

This professor had just authored a paper about this general idea. To provide a national platform for this kind of reform, the head of ETC contacted his former colleagues at the College Board to talk about developing this technology-mediated model biology course. They were keenly interested. The grants officer decided that this idea was an appropriate request for the Fund for the Improvement of Postsecondary Education (FIPSE). Recognizing FIPSE’s requirements in regard to assessment of projects, the
director of institutional research became an active member of the proposal development team. Her involvement and focus on the outcomes of the project led to a clearer expression of the project’s goals, and thus the proposal became stronger. Her ideas for assessing the program helped everyone see how to improve the implementation of the program in the light of the goals and objectives. She also talked with FIPSE’s evaluation expert before finalizing her assessment plan.

The final assessment plan was built around the two overriding goals of the program: (1) strengthening and deepening students’ understanding of biological facts and principles and (2) improving students’ awareness of their own approaches to learning. To address the first goal, the evaluation called for the College Board’s Advanced Placement (AP) biology exam to be given at both the beginning and end of the course. In addition, a questionnaire was to be designed and administered that asked students about their perceptions of self-improvement in their understanding of biology. To address the second goal, a questionnaire was to be designed and administered that determined the types of learning activities the students used during the course. A qualitative component included interviews of students and faculty. Data are to be collected in each of the three years of the project, with the first year being dedicated to collecting baseline data before the changes in the course are fully implemented. The desired outcomes are for students exposed to the technology-mediated course to exhibit a better understanding of biology, as well as a better understanding of their own successful approaches to learning.

The grant was awarded, and the project directors have been developing the course. At the same time, the director of institutional research has been implementing certain portions of the assessment plan. In particular, she has designed the two questionnaires. They were constructed as Web forms by a staff member of the ETC and are being piloted with students taking introductory biology. The director of institutional research will then refine the questionnaires as well as the mechanism for administering them. The director has also conducted some focus group interviews of students taking introductory biology in order to gather the qualitative and contextual information about ways in which students learn. The project directors have been working with the biology faculty to be sure that the AP biology exam has been given at both the beginning and end of the semester. Most important, all of those involved in the grant—the project directors, the director of institutional research, the director of corporate and foundation relations, and the biology faculty—have met to talk about the progress being made. This communication is vital as a way to keep people focused on the goals of the grant and ensure that data gathered as part of the assessment are talked about as the project continues to be developed.

This kind of feedback on a specific project encourages faculty to create new, wider feedback loops with momentum for systemic change. The assessment process has contributed to keeping teaching ideas fresh and responsive to students’ needs. Once this kind of momentum for change
using evaluation is set in motion, it sustains itself and can lead to continual improvement of teaching and learning. The idea of assessment has become more natural to our project directors on this grant, and this shift in attitude toward assessment may lead to wider institutional change. Most important perhaps, having data to support project outcomes has helped the faculty directors and the top levels of administration, including the dean for academic affairs and the president, to see its impact on student learning.

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