



Developing an Assessment Procedure to Enhance Student Learning Outcomes in Critical Thinking/Information Management

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OVERVIEW

This case study describes the initial organization of an assessment process that evaluates student performance with regard to critical thinking and information management, a general education student learning outcome at Binghamton University (State University of New York) which is assumed to be integrated throughout the university's general education curriculum. This case study adopts an organizational perspective toward assessment, positing that without including key faculty groups in initial attempts to assess learning outcomes, and without a central system for implementing assessment efforts, impacting curriculum, teaching, and learning in critical thinking/information management is a most difficult task. The case study applies to universities, university divisions, departments, and programs that desire to learn about organizational strategies of assessment that, in the end, could impact teaching, curriculum, and pedagogical initiatives that affect student learning. This case study fits under the theme "great designs for assessment" and "institutional strategies (designs) for assessment."

Keywords:

Institutional strategies for assessment, Critical thinking, Faculty Senate buy-in, Coordination, Assessment procedure

BACKGROUND AND CONTEXT

Every three years, the university is required by the State University of New York system to submit reports on how well students are achieving student learning outcomes in thirteen general education categories, critical thinking/information management being one of these categories. Specifically, the stated outcomes are as follows:

1. Students will identify, analyze, and evaluate arguments as they occur in their own or other's work
2. Students will develop well-reasoned arguments
3. Students will perform the basic operations of personal computer use
4. Students will understand and use basic research techniques
5. Students will locate, evaluate, and synthesize information from a variety of courses

The specific assessment challenge for the university is that it assumes that all general education courses, regardless of category, train students in the five above-stated areas. Although other courses are assessed through a system of course portfolios in which randomly selected instructors submit portfolios evaluating students with regard to the learning



outcomes relevant to their areas of general education emphasis, critical thinking is not assessed using portfolios. Moreover, there have been numerous complaints by faculty and staff that the learning outcomes are difficult to assess not only because portfolio assessment does not apply to this category, but also because there has been no discernible method of communicating any weaknesses in student performance to faculty and staff in ways that are actionable or that can conceivably result in improvements in student learning. Therefore, defining a process for assessing critical thinking/information management is of paramount importance.

DESCRIPTION OF THE CASE

The initial issue for the university assessment office was that critical thinking had not been formally assessed in the past, and so a system had to be put in place to assess it, with a focus on faculty input and feedback.

Given the significant concern that assessment processes had not been well-defined for assessing critical thinking/information management, the following strategy was put in place to move the assessment process forward:

- During the end of the summer and beginning of the fall semester, instructors who had taught upper division critical thinking courses were asked to respond to an open-ended questionnaire in which they were asked to identify the strengths and weaknesses in student performance in each of the above-stated critical thinking student learning outcomes, as they perceived them. Their responses were then analyzed, and like responses were grouped together. The remaining responses were imported onto a secondary survey in which these same faculty were asked to rate their level of agreement with one another's comments on a five-point scale (5=strongly agree; 1=strongly disagree). Those responses with average values of 4.0 or higher and standard deviation values lower than 1.0 were identified as items of faculty consensus, be they items indicating students' strengths or weaknesses in critical thinking.
- In the sixth week of the fall semester members of the faculty senate, the university undergraduate curriculum committee, leaders of the Center for Learning and Teaching, and leaders of the university's first-year experience courses were asked to attend a meeting to discuss how the results of assessment might be communicated, channeled, and acted upon.
- In the sixth through eighth weeks of the fall semester, the Committee on Library Research Practices, in coordination with the university assessment office, administered a library survey which asked faculty to what extent students used database resources (found on the university Web site), to what extent students adequately generated research bibliographies, the extent to which students were given a chance write research papers, and other questions. Faculty were also invited to submit open-ended comments on students' performance with regard to these questions.
- In the eighth week of the fall semester, the assessment office met with the off-campus college, a department within the Division of Student Affairs, to inquire about internship supervisor surveys, in which intern supervisors submit feedback in respect to important aspects of critical thinking/information management, such as computer usage and research ability.
- In the eighth week of the semester, instructors submitted scores of research papers in randomly selected critical thinking courses, using a rubric created by faculty representatives of the State University of New York.



At the end of the semester, the assessment office analyzed the information described above and submitted reports to the EPPC, as well as university academic administrators for discussion and reference.

During the first month of the spring semester, the results were reported to the Educational Policies and Priorities Committee (EPPC), a sub-committee of the Faculty Senate. The committee then discussed the findings, created a short statement of those findings with recommendations for action, and then charged key committees and divisions within the university to implement these recommendations. The university academic assessment director was charged with the responsibility of following through on such recommendations.

Figure 1: Timeline and Actions for Assessing Critical Thinking/Information Management

Timeline	Action
2-3 Weeks Prior to Fall Semester	Plan assessment activity; assess student learning in upper-division critical thinking and information management courses.
Weeks 1-8, Fall Semester	Meet with faculty senate bodies, Center for Learning and Teaching, university library administration, and first-year programs administration; such as open-ended faculty assessments, library survey, rubric-graded samples of student work, internship host surveys, etc.
Weeks 9-12, Fall Semester	Analyze assessments and write reports. Submit reports to relevant faculty senate oversight bodies and academic affairs administrators
Weeks 1-6, Winter Semester	Conduct faculty senate discussions of results and identify recommendations
Weeks 6-12, Winter Semester	Contact individual organizations responsible for carrying out recommendations
Spring/Summer Sessions	Implement recommendations and assess effectiveness of implementation

The above-described process has resulted in specific recommendations proposed by the Educational Policies and Priorities Committee, helping to alleviate significant concerns shared by key faculty members and other faculty-based organizations that assessment was a “top-down” mandate imposed by the state or federal government or by university administration. In its summary statement, the Educational Policies and Priorities Committee found that one apparent student weakness in critical thinking/information management was that students relied too much on Internet resources such as Google and Wikipedia to conduct research, especially given the expectations that students conduct in-depth, balanced research. The committee therefore made recommendations to the university’s Center for Learning and Teaching, university libraries, Undergraduate Curriculum Committee, and university first-year programs (which teach students introductory university courses), to develop on-line modules, instructional strategies, and other methods of teaching students how to access and use electronic databases more extensively. Subsequent discussions also resulted in plans to find common courses at program and major levels that teach research skills and, through the Center for Learning and Teaching and Undergraduate Curriculum Committee, hold seminars and workshops on how to best teach research skills, especially with regard to using library resources.

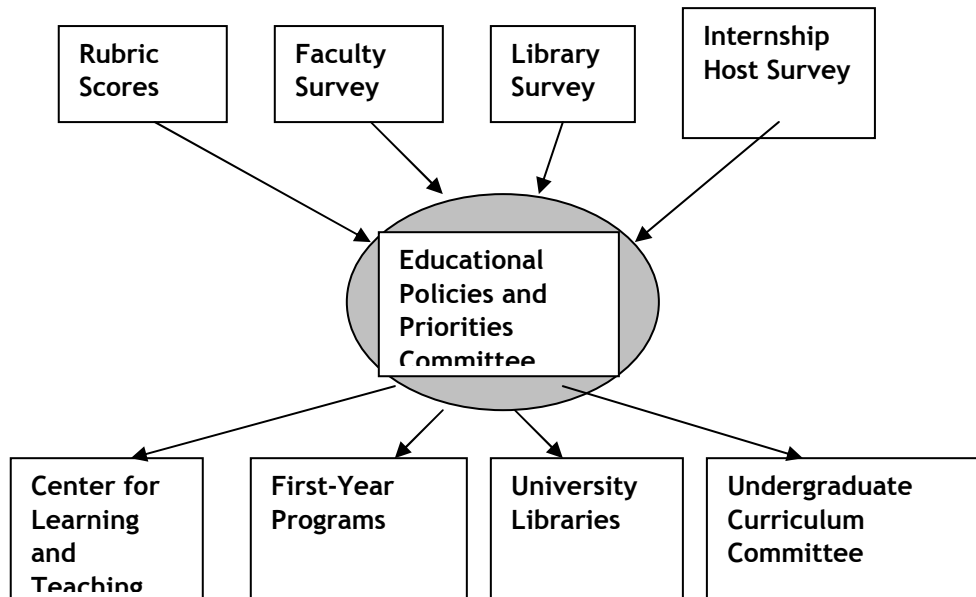
RATIONALE IN TERMS OF EDUCATIONAL IDEAS

The above case study assumes that a purposive, systematic strategy for assessing critical thinking (as well as other general education categories) is needed in order to move assessment from a mere collection of information to action items that are implemented at



administrative, major and program and classroom levels. It assumes that if assessment is to be used, it must not be seen solely as an administrative mandate, but instead as a collaborative effort among individuals and groups at all these levels. Procedurally, the process appears as such:

Figure 2: Process Chart for Assessing Critical Thinking/Information Management



The assessment process, moving from the macro level (assessment conducted by the office of assessment at the administrative level) to the meso level (the Educational Policies and Procedures Committee, a sub-organization of the university faculty senate) to the micro level (Center for Learning and Teaching, first-year programs, university libraries, and Undergraduate Curriculum Committee), very much relies on a process including all three levels. For example, as the above case study demonstrates, the assessment office, the EPPC, and other bodies either directly or indirectly interact throughout a given semester, especially with regard to assessing student learning, aggregating the lessons learned from such assessments, making appropriate recommendations, and acting and following up on such recommendations. The central intermediary body in the process, the EPPC, meets at least once a year to discuss assessment results, to make recommendations specific to general education categories, and to plan on follow-up. The assessment office is charged with the responsibility of following up on such actions, assuring implementation, and communicating concerns and objections. We have also found that informing all three levels of the results of their efforts is critical to ensuring future involvement of those levels in the assessment process.

In sum, we have learned that three assessment principles guide implementation:

1. Assessment should be faculty-based; that is, as much as possible, faculty should be part of the assessment process and part of the discussions and recommendations about student learning that emanate from the process.
2. Assessment should be triangulated or based on several assessments of student learning in order to minimize bias germane to one particular assessment. Triangulated assessments also include feedback by groups from different areas of emphasis, such as the faculty, libraries, administration, and community members.
3. Assessment should be coordinated by one central body, if possible. These assessment staff should place a high priority on coordinating among various bodies—



for academic assessment, the most important of these is the faculty senate and its constituent bodies. This coordinating body should follow up on all activity, and proactively inform participating organizations and individuals about the results of their efforts.

The third point is especially critical. The process relies strongly on a central coordinating body, an administrative staff member who is able to bring all parties together, follow up on assessment efforts, and help faculty, staff, and administrators feel that their participation has been meaningful. Although this coordinating function is not a sufficient condition, it is a necessary condition, in our view, for successfully administering an assessment system over time.

EVALUATION

In understanding the effectiveness of the case study, we recognize that the effectiveness of the above-described procedure can only be evaluated over time. In what follows, we consider the case study's effectiveness in respect to organizational development, results of a survey of faculty participating in the process, and the overall relative ease with which recommendations made by the Educational Policies and Priorities committee were put into place.

In respect to organizational development, it was clear from the outset that creating a collaborative assessment structure, depicted in Figure 2, involved a number of false starts and bumps in the road. Initial meetings by assessment staff with faculty and staff members evidenced some confusion about what role assessment would play in the tenure and promotion process, evaluations of teaching, and control over resources at department and program levels. Assessment staff's meeting with members of the faculty senate, working within them on already-defined assessment processes, and supporting them on other projects appeared to allay the culture of suspicion that is often associated with assessment, although not completely. After a semester of communicating with key members of the Educational Policies and Priorities Committee, Center for Learning and Teaching, university libraries, and individual faculty randomly chosen to submit course portfolios, it was clear that the assessment process could lead to discussions about what actions might be taken to improve upon any weaknesses in student performance. A semester later, as described above, the Educational Policies and Priorities Committee submitted a bulleted list of recommendations, and subsequent meetings and discussions about what to do about these recommendations occurred with relative ease. The assessment staff's work with faculty and staff on already-existing assessment processes, on focusing on producing a short list of recommendations and suggested actions, and communicating to key individuals the results of their efforts, appeared to help make a difference.

Over time, it became clear that the same faculty and staff that participated in initial discussions about how to move assessment forward were also eager to consider what assessments had to say about student performance and what recommendations and actions should be taken to address them. For example, the EPPC concluded as a result of assessment reports that students needed to learn how to use library resources in more depth. In a subsequent meeting, after considering the EPPC's conclusion, representatives of the university libraries, university first-year programs, and center for learning and teaching suggested holding training sessions for graduate student teaching assistants. They also suggested developing library instructional slides available on the university Web site for use by the first-year programs during the summer, among other specific actions. Although coordination issues (who was responsible for doing what) became clear during the meeting, it was equally clear that the assessment office should be charged with continued follow-up. All follow-up indicators suggested that recommendations were being put into place.



In respect to faculty buy-in, a survey of faculty participating in the assessment process indicates that the vast majority of faculty (90%) felt that follow-up processes, orientation meetings, and efforts to include them in the process were highly valued. In open-ended comments, several faculty mentioned that inclusion in the process helped enlighten their teaching as they became aware of issues that they had not thought about in depth.

When considering factors critical to success, it is therefore important to repeat many of the above points, and to perhaps add a couple of additional points:

- An assessment coordinator, staff member, or administrator who is able to coordinate assessment activity, to work with faculty, to follow up on suggested actions and recommendations, and to interact positively with faculty, administration, and staff, is vital to the process. This person should also be given some authority to enforce already-existing policies on assessment.
- Policies and procedures regarding assessment are more successfully implemented if they come from the faculty senate or other faculty-oriented groups. Otherwise, the process appears to be an administrative mandate, which rarely serves as an impetus for moving forward with assessment.
- Key groups need to be part of the process, including organizations having to do with training faculty (such as a Center for Learning and Teaching), university curriculum committees, etc.
- Patience and time are critical. Hopefully, accrediting bodies, state and national governments will offer some leeway to universities and colleges that are beginning to develop an assessment system. Otherwise, assessment efforts will appear, at least in the eyes of faculty, mandate-driven.



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