

Report of Teagle Foundation Value-Added Assessment Project

The Collaborative Project

In May 2006 Muhlenberg, along with Drew University, Moravian College, Roanoke College, and Susquehanna University, was awarded a \$300,000 three-year grant from the Teagle Foundation to explore how select programs that involve intense faculty-student interaction facilitate intentional learning in students. Individually and collectively, we developed direct and indirect measures of student outcomes in first year student and upper-level student programs: first-year seminars (Drew), lower- and upper-level writing-intensive courses (Moravian), capstone courses and student-faculty research (Muhlenberg), freshman orientation and first-year seminar (Roanoke), and first-year core and senior capstone courses (Susquehanna). Information about the Teagle Foundation and their support of higher learning initiatives can be found at: <http://www.teaglefoundation.org/grantmaking/education.aspx#outcomes>

Intentional Learning

The development of intentional learners is a common goal of liberal education. The *Greater Expectations* program of the Association of American Colleges and Universities defines the goal as follows:

Becoming an intentional learner means developing self-awareness about the reason for study, the learning process itself, and how education is used. Intentional learners are integrative thinkers who can see connections in seemingly disparate information and draw on a wide range of knowledge to make decisions. They adapt the skills learned in one situation to problems encountered in another: in a classroom, the workplace, their communities, or their personal lives.¹

At an early workshop, held at Muhlenberg, we discussed our definition of intentional learning and outlined key outcomes that characterize these learners.

Learners who are self-aware and self-directed can:

1. Articulate their reasons for study within the context of a liberal arts education
2. Describe and evaluate their learning processes
3. Develop plans for pursuing learning goals
4. Set, pursue, and reflect upon their learning goals

Learners who are aware of multiple perspectives can:

5. Identify diverse or conflicting concepts, viewpoints, and/or priorities
6. Articulate the value of considering multiple perspectives
7. Examine phenomena from multiple viewpoints

Learners who make connections can:

8. See connections in seemingly disparate information
9. Recognize links among topics and concepts presented in different courses
10. Synthesize disparate facts, theories, and concepts
11. Work within a context of diverse or conflicting concepts, viewpoints, and/or priorities

Learners who apply skills and knowledge to different contexts can:

12. Adapt what is learned in one situation to problems encountered in another
13. Connect intellectual study to personal life
14. Draw on a wide range of knowledge to make decisions

¹ Association of American Colleges and Universities, *Greater Expectations. A New Vision for Learning as a Nation Goes to College.* (Washington, DC: AAC&U, 2002), 21-22.

Using common essay prompts and institution specific assessment tools, we tested and refined the 14-outcome rubric designed to directly assess student work. A copy of the rubric can be found at: <http://www.muhlenberg.edu/mgt/ir/intrubric.pdf>

Muhlenberg Project

The focus of the Muhlenberg project was an examination of the role of capstone experiences and student-faculty research in fostering academic growth and intentional learning, specifically in the senior year. Currently, capstone experiences and opportunities for independent research/study are available for most students but are not a requirement across the curriculum. Our project involved the collection and analysis of student work, survey results and focus group/interview data to make comparisons between students who had these experiences and those who did not. Members of the Teagle committee were Jim Bloom, Kathleen Haring, Trevor Knox, Chris Sistare, Bruce Wightman, and Carol Wilson.

Assessment of Capstone Experiences

During Spring 2007 and Fall 2007, students in capstone courses and students who had not had capstone experiences wrote essays in response to a prompt that asked them to describe experiences during their four years at Muhlenberg that 1) led them to view problems and ideas from multiple perspectives, 2) led to connections among different disciplines, 3) led them to an epiphany or to create new knowledge or a new viewpoint, and 4) helped them to critically evaluate claims and ideas. Sixteen faculty from across the college participated in essay scoring sessions to evaluate the student work on four outcomes: 1) Ability to identify and evaluate multiple perspectives, 2) Ability to identify connections across contexts, 2) Ability to create new knowledge or ideas, and 4) Ability to critically evaluate knowledge or theories. Overall, the essays written by capstone students were rated higher on all outcomes except for Multiple Perspectives. The comparative results can be found at: <http://www.muhlenberg.edu/mgt/ir/capcomp.pdf>

We also analyzed Muhlenberg's 2005 NSSE data to test for differences in responses between seniors who reported having had a capstone experience and those who did not report having had a capstone. Students who reported having had a capstone experience scored higher on many of questions that measure aspects of intentional learning. However, what was most noteworthy was that only 65 (36%) of the respondents reported having such an experience. (Results from the 2008 NSSE show that 41% of our seniors had a culminating senior experience as opposed to 69% of seniors from peer group schools.) In contrast, at least 80% of majors and interdisciplinary programs at Muhlenberg offer a required or optional capstone experience. This disparity between student and faculty perceptions may indicate a need for more intentional articulation of program objectives and learning outcomes by faculty. In fact, in a meeting with a group of faculty and administrators who discussed explanations for our findings, we developed a list of important components of a capstone experience (see <http://www.muhlenberg.edu/mgt/ir/compcap.pdf>).

Finally, to assess development in students' understanding of the goals of a capstone course and to evaluate the skills they acquired from these courses, three faculty members from three different departments (Biology, English and Psychology) developed a pre-post capstone embedded essay prompt that was given to students in the three courses. See <http://www.muhlenberg.edu/mgt/ir/ppcapasst.pdf> for prompt and findings. Comparisons between students' pre-course and post-courses essays showed that most students had a more

sophisticated understanding of the goals of a capstone after taking the course. Students across all three courses reported that the capstone course led to improved writing, speaking, critical thinking, and interpersonal skills, as well as increases in independence and the ability to make connections among concepts. We shared these results with department chairs.

Assessment of Independent Research/Study

At the end of the Fall 2008 semester, seniors enrolled in independent study/research wrote essays in response to a prompt administered by their faculty supervisors. We asked students to explain 1) why they chose this experience, 2) how the individualized instruction differed from their other learning experiences, 3) how the experience led to new knowledge or insights and 4) in what ways the independent study/research would affect their future learning. Faculty who had supervised the students' work graded the essays based on two learning outcomes from our Teagle group's intentional learning rubric (Outcome 2: Describe one's learning process, Outcome 13: Connect intellectual study to personal life) and an additional outcome developed by the Muhlenberg team (Outcome 16: Can create new knowledge, theories, representations). Across the three outcomes only 38% to 43% of the essays were judged as proficient or advanced on these outcomes. See <http://www.muhlenberg.edu/mgt/ir/indstudy.pdf> for the results.

A content analysis of the themes students wrote about in the essays indicated that they frequently highlighted emotional rather than intellectual development by citing the confidence and self-discipline they acquired as a result of such educational experiences. Moreover, they perceived that the skills they learned from conducting an independent project (e.g., critical thinking, ability to work independently, understanding that education is on-going) would benefit them in graduate or professional school or in their future careers. Faculty scorers also discussed what they learned from reading the student essays. They noted that most students were very positive about their experience and showed at least some level of insight into their own learning process. However, students differed in their motivation to engage in the independent work (many expressed more extrinsic rationale for choosing this experience and described its importance for graduate/medical school) and in their ability to articulate their work. In addition, there was a great deal of variability in the actual experiences that students had which may reflect variable criteria for enrollment across departments and across individual faculty supervisors.

When we conducted focus groups with graduating seniors many identified the honors thesis or independent research/study as the educational experience that gave them a real sense of accomplishment in the major. An English major noted that he could "carry on an educational conversation with the professor, give and take instead of just taking." This theme was echoed by a Biology major who said that he could "keep up a conversation with a professor about primary literature." A psychology major stated that "doing an honors thesis forced me to do my own research, realizing how much I know." Many students valued the confidence and independence they achieved through independent research/study or from doing semester-long projects in capstone courses.

We analyzed Muhlenberg's 2005 NSSE data to test for differences in responses between students who had an independent research or an independent study and those who did not have these experiences. Independent research/study students had higher ratings on many of the intentional learning questions. For example, these students were 1) more likely to include diverse perspectives (different, races religions, genders, political beliefs, etc) in class discussions and assignments, 2) more likely to put together ideas or concepts from different courses in

discussions and assignments, and 3) agree more that their courses involved synthesizing and organizing ideas, information or experiences into new, more complex interpretations and relationships. While higher academic ability and performance may account for these differences, there was no significant difference in GPA for independent study students compared to students who did not do this experience. However, students who worked on a research project with a faculty member did have higher GPAs compared to those without research experience.

Lessons Learned

The Muhlenberg assessment project underscored the need for a more coherent and uniformly rigorous senior year and specifically the need for more academic capstone opportunities. We will need to base these capstone experiences on common well-articulated goals. Consistent with the faculty consensus during our curricular discussions, we also determined that the curriculum in general needs to be more intentional and integrative. Student experience should enable them to integrate available learning opportunities by crossing disciplinary boundaries.

We found that independent study/research experiences are "high impact" activities that foster discovery, independence, and student-faculty interaction, despite wide variability in the quantity and difficulty of the work students are doing and in their abilities to articulate the outcomes of their projects. To reduce this variability we will need to examine learning goals for independent study/research experiences and develop clear general criteria for these experiences.

The Teagle project afforded the College several faculty development opportunities. In addition to the workshops that Mary Allen, our consultant, conducted on campus for our faculty and staff, the Muhlenberg team organized essay scoring sessions, assessment workshops, and discussions of project results. These programs increased our colleagues' understanding of the value of and the need for assessment in developing a culture of intentional learning. We also learned about the range of available assessment methods and tools and how we might most effectively institute the systematic assessment of courses, programs, and the curriculum as a whole at Muhlenberg. Faculty and staff gained familiarity with rubrics and the process of applying them to student work. Individuals and departments were able to take and modify our intentional learning rubric for use with their students' work.

The intermural consultations on which the Teagle grant was based directly improved the prospect of introducing effective assessment at Muhlenberg. What we learned from our colleagues at the other four consortium partners has also led to initiatives extending beyond the intentional learning and assessment project. The Muhlenberg team gained valuable advice from our colleagues. In particular, those who had successfully completed curricular reviews gave us concrete information about: 1) using our professional organizations to support our work (e.g., participation in the AAC&U General Education Institute), 2) structuring the process, 3) technologically facilitating faculty discussions (e.g., clickers), and 4) sustaining faculty development over the years to support curricular change. Moreover, our ability to share our institutional successes and challenges with candor and collegiality has enabled us to articulate specific strategies for institutional change.