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Tri-College Teagle Foundation Grant:
Sustainable Department Level Assessment of Student Learning
Year Two Report from Faculty Participants

As a function of our participation in the Teagle assessment initiative, the Haverford College Psychology Department has engaged in several assessment activities, culminating with a direct diagnostic assessment of research skills prior to embarking on the senior thesis project.

As articulated on the Haverford Psychology website, the aim of the Psychology Department “is to provide students with an understanding of human behavior that will support their ability to participate as informed members of our society, to help others, and to add to scientific knowledge. One path to this goal involves mastery of the theoretical concepts psychologists use in describing and understanding behavior; the other involves competence in the use of the scientific methodologies employed in the study of behavior. We emphasize the importance of both concepts and methods across diverse topic areas within psychology, including biological, cognitive, social, and personality.”

The groundwork for achieving these goals is first laid during a common introductory course. Here students become familiar with the theoretical approaches across the major areas of psychology, come to understand the field of psychology as an empirical, scientific discipline, and to appreciate the basic principles of the experimental approach to behavior.

Our departmental learning goals are further achieved through our advanced courses, at the 200 and 300 level. Our advanced content courses further reinforce theoretical and methodological concepts illustrating current understanding of the diverse mechanisms of behavior.

The research training component of our curriculum is established in a series of courses: Psychology 200, our Research Methods and Statistics course, and two area-specific laboratory methods courses associated with the 200-level lab courses. As a result of participation in these courses, we strive for our students to achieve the following specific learning objectives:

- Students will be able to generate research questions and formulate testable hypotheses
- Students will be able to design research studies to test those hypotheses
- Students will be able to analyze the data that are generated in those research studies
**Students will be able to interpret the results of those analyses in light of their original research questions**

Students put these skills that they have acquired through their coursework to work in the senior thesis project, a summative assessment of various aspects of the curriculum. During the senior year, students design, carry out, and present in oral and written form, an independent research project. Working under the close supervision of a faculty member and, often, 2-3 student collaborators, the project aims to take students from being passive recipients of established knowledge to creating knowledge themselves. Faculty members’ research programs are deliberately designed to accommodate these research projects, and it is common for work stemming from these projects to be published in peer-reviewed journals and/or presented at national scientific meetings.

It was this final set of student learning objectives around which we designed our present assessment project. Our primary motivating question was whether our research methods and laboratory course curriculum adequately prepare students with the skills required to undertake original research in the senior year. Our primary assessment measure in this project was a direct diagnostic assessment, consisting of questions from a standardized testing tool used for practicing the Psychology GRE subject test (used with permission from ETS), and questions culled from examinations given by instructors in our statistics and research methods course. The assessment was administered in the Fall semester, during the design phase of the senior research project, and was followed by a mandatory review session in which the test results were distributed to each student and discussed with the class of senior Psychology majors as a whole. Students were instructed to take the test on their own time in the weeks preceding the review session, without preparation or resources. We used the results of the assessment as a “diagnostic” in order to determine where additional teaching resources during the senior year needed to be allocated to assist students with the research design and data analysis portion of their thesis projects. In addition, since we had information about classes taken by each student, we were simultaneously able to evaluate, across students, the appropriate sequence of courses taken in preparation for the senior project.

The breakdown of content on the diagnostic assessment included questions about data analysis (1/2 of the test), research design (1/4 of the test), and data interpretation (1/4 of the test). As a whole, student performance on the exam was somewhat mediocre, but the difficulty was concentrated in the sections on data analysis—students scored 70% and 80% on the questions about data interpretation and research design, respectively, but scored only 40% on the questions about data analysis. Students had particular difficulty identifying the appropriate statistical test for a given research design.

The poor performance on the statistical questions was discussed by the Psychology Faculty—we came to the conclusion that our students would need extra help in order to fully comprehend the data analysis component of their senior thesis projects, rather than simply stepping through the procedures and reporting the results. Each faculty member agreed to spend extra time with their senior thesis groups during the data analysis portion of the project to ensure that students had learned the procedures in a meaningful context.
The diagnostic assessment allowed us to better understand the support needs of our students in this component of the senior research experience.

We are also investigating the sequence of courses taken so that our students may be better advised about choosing their research preparatory courses. We see a few non-surprising trends in the data (such as a positive correlation among scores in the research methods course and the diagnostic assessment), and importantly, no difference at all in the assessment scores of students that took the research course at Haverford and at Bryn Mawr. However, much more data is needed in order to adequately assess this portion of our curriculum. We are re-administering the same assessment during this current Fall semester and will add the data we collect with Fall 2010 data in order to increase sample size to make the analysis more meaningful.

In addition to the internal discussions of the project, I presented these findings at the Tri-College Teagle workshop held at Bryn Mawr College in Year 2 of the grant, and at the department chairs meeting at Haverford in Spring 2011.

The most important information that we have obtained from the diagnostic assessment comes not from their scores on the exam but from the students themselves. They are, as a whole, shocked by how little they have retained from their research courses, which makes them eager for the refresher session held during the Fall semester. We expect that the Fall refresher, and the enhanced support for data analysis during the late stages of the senior thesis project represent sustainable practices for the future.