Assessing Student Learning: The Two-Credit Thesis

The focus of the Teagle Foundation-sponsored assessment practice in the Department of Educational Studies at Swarthmore College is student learning in the department, as reflected in student work on the two-credit thesis. To this end, members of the department have developed a rubric for the thesis that is intended to be a tool for assessing and providing support for student learning during the thesis process (see Appendix). At this time, the rubric has been developed, assessed, and is in the first year of its use with students. The rubric has now been shared with other departments at Swarthmore College and Educational Studies departments at other liberal arts colleges and universities through the Consortium on Excellence in Teacher Education.

Background

The Educational Studies department has a special major thesis requirement for seniors¹ that faculty members feel is an essential culminating activity. They can see that it enables students to pull together and stretch their understanding of the materials addressed in courses, and to continue to develop their abilities to read critically. Students clearly benefit from the ongoing feedback process involved in addressing a problem as they develop a consideration of the literature and extend it with data. The faculty members also recognize that students come to their thesis project with differing levels of readiness for work on an extended assignment and varying abilities to make use of resources, organize the amount of data with which they are working, and synthesize and extend understanding of their research question.

Because students undertaking thesis work are special majors, supervision of their thesis involves an advisor from another department in addition to a member of the Educational Studies faculty. Unless the other advisor has previously worked with a special major on a thesis, the other advisor often needs guidance about the goals and expectations involved. It is a known problem that when these are not shared, students experience unnecessary difficulties. Special majors typically reflect a range of disciplines (as many as 18 different special majors have been pursued with other departments and interdisciplinary programs) and therefore, a range of disciplinary traditions regarding the conceptualization and measurement of variables assessed in a thesis.

At the start of the Teagle Project in 2009, there were no specifications for either faculty members or students about the special major thesis beyond key time points for its completion (e.g., the introduction and methods section needed to be fully drafted by

¹ There are no majors in Educational Studies; rather students can pursue special major in Educational Studies and another department or program in either the Course or the Honors Program. They also can pursue a minor. Only special majors are required to write a two-credit thesis.
December; data should be collected by mid-February). With two newer faculty members helping to supervise two-credit theses and the continued need for advisors from other departments to understand expectations, identification of learning goals for our students and assessments was a timely focus for the Teagle project. There is also an ongoing desire to better understand ways in which students can be supported to realize their potential in all phases of the thesis process. Study of the two-credit thesis provided an opportunity to examine and learn about departmental pedagogical practice.

Assessment Plan

The assessment plan focuses on senior students’ abilities to select, implement, and provide a rationale for research methods employed in their thesis. In the thesis, students are expected to address a research question by: (a) anchoring it in the relevant research literature(s); (b) using appropriate methods to collect data; (c) analyzing and critiquing these data; (d) taking a position and developing an argument; and (e) explaining how their findings complement, extend, and/or refute the literature reviewed. Questions that inform the proposed assessment plan include: In which areas/on what competencies are students most easily successful? In which areas do they struggle?

Although two loops for assessment were requested as part of the design of the Tri-College Teagle Project, both loops suggested by the Department of Educational Studies centered on the need to develop a rubric for the two-credit special major thesis as a way to assess and potentially improve support for student learning from the two-credit thesis. Discussion with other Teagle participants and the institutional researchers provided a context for targeting realistic steps for the assessment process.

Development of a rubric for the two-credit thesis included multiple steps. First, members of the department developed a list of student learning goals through discussion. They then drafted, discussed, and revised several iterations of a rubric. Following this, three independent methods of assessment were employed: (a) an external reviewer was identified and hired to use the rubric to assess six randomly selected theses from prior years; (b) faculty members who advised work on the selected theses independently used the rubric to reflect on the strengths and needs of those students whose theses were reviewed; and (c) an online confidential survey requesting their feedback on the rubric was distributed to recent alumni who had just completed a two-credit thesis.

At each stage in the process of data collection, faculty members in the department have been engaged in discussion about the findings and their implications. They also have revisited and revised the learning goals developed at the outset of the project.

Methods and Findings

Methods and findings from each step in the assessment process are reviewed in this section of this report.

Learning Goals
Through an iterative process, all members of the department worked together to first brainstorm and then refine their goals for their students. The process involved several weeks of hour-long discussions during which faculty members talked through the goals, readings, activities, and assessments of their shared introductory course and the thesis assignment, and referenced other course work as they considered where and how listed skills and competencies goals were introduced in mid-level courses or seminars.

A total of eight goals for student learning were identified for students pursuing special majors in the department:

1. Students will be able to support claims with evidence.
2. Students will be able to produce effective academic writing.
3. Students will be able to think critically and creatively about key concepts in the field including learning and development, social and cultural contexts of education, and contemporary political issues in the field and the role of education in society.
4. Students will be able to use research and theoretical frameworks from a range of disciplines to extend, refute, and confirm existing research, theory, and practice.
5. Students will be able to use practice to inform theory and research.
6. Students will be able to work collaboratively with a range of colleagues and constituencies.
7. Students will be self-reflective about their own position and the positions of others in political, social, and institutional structures and the possibilities for growth and change for themselves and others.
8. Students will be constructive and generative problem solvers.

**Rubric Development and Use**

Once agreement on the learning goals for students was reached, these were then used to develop a rubric that specified criteria for an effective two-credit thesis. The process of rubric development was iterative. The two faculty members leading the department’s work on assessment developed a draft rubric that was then reviewed by all members of the department, revised, and re-reviewed by the department until all members of the department were comfortable with its format. As part of their process to develop and revise the rubric in response to departmental feedback, the two leads for the department reviewed theses that they had supervised to consider scoring criteria, and were engaged in discussions about rubrics and their development with institutional researchers and other faculty members participating in the Teagle project at Swarthmore College, as well as those from Bryn Mawr and Haverford Colleges.

As a group, the Educational Studies faculty decided to specify criteria and to omit scoring or a description of levels of performance in the rubric that they developed. Their decision was informed by their goals for the rubric and its use. They wanted to develop an assessment tool that provided those who would use it with a clear set of goals for the two-credit thesis, and their goals were that all theses be fully developed.
As a group, the faculty members also decided that there were three types of data that they wished to collect: an external assessment that used the rubric to review theses of past students, faculty advisor use of the rubric to assess student work on these theses, and an alumni survey.

**External assessment of students’ work.**
An external assessment of students’ work on theses using the rubric was undertaken by a person with the capacity to work with quantitative and qualitative data and theory, a former student of the department who is presently pursuing a Ph.D. She was provided with the rubric and the theses of six former students who had been selected at random by Robin Shores, Director of Institutional Research.

The external reviewer first examined the rubric closely and suggested minor changes to its content. Then she read through all of the theses in order to get a sense of their range, and proceeded to analyze each using the rubric, with two questions in mind: (a) What does unacceptable, good, and excellent work look like for each category in the rubric? and (b) Are students demonstrating mastery of their fields? In instances where a thesis provided new insight into understanding scoring for a category, she then backtracked through previous analyses to ensure consistency in her rating.

Findings from the analyses indicated that there was more variation between theses than within theses. In other words, theses that were rated excellent on one criterion (e.g., literature review) tended to also be excellent on other criteria as well, whereas theses that were rated as weak on one criterion also tended to be weak on other criteria. She rated one of the theses super excellent, two excellent, one very good, one good, and one weak.

In general, she felt that the rubric’s focus on thoughtful research questions was appropriate as these are key to launching any project and central to the thesis proposal. However, she also pointed out that by the time data are analyzed and the thesis is being written, there should be a central argument. She suggested that without a statement of a clear position, a reader could easily lose track of why each paragraph follows the one before it. Where she saw organizational problems or irrelevant sections in the theses, she said that a solid thread of argumentation would have helped the writer make different choices. Her recommendation was that the students needed work on framing the paper in terms of a position or argument. Because the rubric did not yet require an argument, she drafted a fourth section for the rubric that specified criteria needed for students to take a position and develop a strong argument. Following discussion among faculty members, this section was incorporated into the rubric.

She also wondered if the literature review had been useful to the weaker students. She said that while the bullet points describe the literature review, they do not (and may not be able to) convey how useful the literature review can/should be to them since the literature review helps the researcher to make decisions about research questions, theoretical framing, and study design. She pointed out how one of the theses she had rated excellent had this framing built into it, since the study involved replication and
extension of a previous study. She suggested that for students who need more structure, this type of framing might be particularly useful.

Finally, she raised the issue of how to assess whether the students had had strengths coming into the thesis making their work on the thesis predictable, and suggested the need to gather papers from students pre-college or in their first year to assess change. Her hunch was that the students whose work was rated the highest had entered Swarthmore with the strengths that were demonstrated in their theses. Interestingly, her hunch may have been accurate for one student in the sense that he was extremely self-regulated and easily sought feedback that enabled him to clarify ideas, but not for the other. For the student whose study had had the framing built into it because it involved replication, her skills had clearly been developed during her course work at the College and were likely aided by the structure that replicating a previous study provided. The person who supervised this thesis had also worked with her in the first year seminar.

Faculty advisor assessment of student work.
The six theses studied by the external examiner had been supervised by three members of the faculty. These faculty members worked with the revised rubric (including the goals of taking a position and developing a strong argument) to retrospectively provide information about the strengths and needs of the student(s) they advised prior to and during the process of working on the thesis. Their process included consideration of the strengths and weakness of the students with respect to the criteria before, during, and at the completion of their work on the thesis.

In general the findings suggest that all of the students came to the thesis experience with a need for feedback and models in order to write an effective thesis. While they all appear to have had enough theoretical grounding prior to beginning the thesis that they could explore other literatures, as the external evaluator suggests, the students needed guidance in how to move from the questions that they are asking at the beginning of their work on the thesis to the argument that they want to make. For example, in considering the work of one student, the advisor wrote:

He was more wrapped up in the theoretical literature than in his data—kept reframing the argument, shifting the primary focus and the literature used…

He may have had some of his ideas and arguments in his head prior to data collection—which isn’t bad—but then had to deal with complications, contradictions, etc., which was hard.

It also appears that prior to work on the thesis students could benefit from more explicit instruction in honing research questions, and identifying and working with links between the research question and methods of data collection and data analysis. Interestingly, two of the students who were rated the highest on their thesis had also taken course work that explicitly involved them in the collection, reduction, and interpretation of both qualitative and quantitative data. The rest of the students had not and were, as a result, newer to the process of posing and narrowing research questions and using these as evidence for an argument. As one advisor observed about the student with whom she was working:
She was good at using data to evidence her arguments, which she knew how to do from texts... but had done only sporadically in Education classes from observed data. This was largely new territory for her but she grew quickly in her facility. What was harder was to refrain from having this study remain at the level of a simple comparison... Near the end she began to acknowledge alternative interpretations and anticipate counter-arguments but this remained a less-developed part of her work.

Alumni survey.
Special major alumni who completed a two-credit thesis in the last year were asked to provide feedback on the revised rubric that was revised at the suggestion of the external evaluator. A research assistant blind to department goals in the project distributed the online survey; it included a cover letter ensuring anonymity for the respondent, the rubric and two open-ended questions. Of the 6 alumni who received the survey, 4 responded. Of those who responded, two could be considered to have successfully completed the thesis and two had significant difficulty completing the thesis. The Educational Studies research assistant compiled an overview of survey responses and provided representative responses for departmental use. These data are summarized below:

Asked whether the rubric would have provided them with information that was useful during the process of working on their thesis, participants agreed that the rubric was or would have been useful (some faculty members had shared the rubric with their thesis students as it was being developed). They noted that the rubric is well structured, breaks down the task (of completing a thesis), and contextualizes each smaller component. However, one participant pointed out that the rubric also implies that all theses must include original, quantitative research that may not always be the case.

Representative responses:

“Because the year-long thesis can seem so daunting in scope for most of the process—such that it's hard to connect what one is working on in any moment to the final product—having the rubric ahead of time might break down the task a bit and contextualize each smaller component.”

“My eventual thesis didn't seem to fall within the elements described in the rubric, as it was less of a research project with original data than (what I believed to be) an extensive literature review followed by application of those theories that I had found in the literature to a practical-use scenario.”

Asked whether on reviewing the rubric they had any suggestions about how the rubric might be made more useful to students, participants noted that certain aspects of the rubric could be more specific or give more information. One participant suggested a lessening of emphasis on one particular thesis structure and research protocol.

Representative responses:
“Maybe the rubric could be used as a kind of contract, or check-in tool, between student and advisor: Students could examine each part of the rubric in terms of how prepared/supported they feel in that aspect of the thesis process, and where they may need more support from an advisor.”

“It might be useful if the student were given more information about the literature review section; maybe give a few more guidelines or go into more depth with the ones provided.”

“I think it is broad enough to give students flexibility on their theses but also specific enough in places to provide structure for those who need it.”

**Implications**

Findings from the studies of senior students’ work suggest that students range in their capacities to engage work on the thesis, and that they draw on their course work in their work on the thesis and on support from their advisors during the thesis process. While students’ theses appear uniform according to the criteria of the rubric, none of the thesis students were prepared to write their thesis at the start of their senior year. Rather, they made progress through the successive feedback of the thesis process, and the content of that feedback appears to match the work undertaken in their courses.

It appears that next steps in discussion of the two-credit thesis need to include (a) identifying courses in the curriculum prior to work on the thesis in which students are supported to identify and pursue research questions, and how such capacities might be effectively built into the course work they take, and (b) ways in which work on the thesis might be structured to provide students with support for developing and making their literature review useful.

Once a full year of work with theses has occurred, it would also be useful for departmental faculty members to share how they do or could support students to understand (a) the bullets of the rubric and also (b) how the rubric can be effectively used with disciplinary content that is more qualitative or quantitative, and/or more sociological or psychological.

Finally, the contribution of the other advisor to the student’s ability to draw effectively on the literature and frames of analysis of both fields of study should be discussed, as well as how to elicit this help if it is not forthcoming.

**Use and Dissemination of Rubric, and Possible Adaptations**

In its present form, the rubric is being used with seniors who are special majors in the department. It also has been shared with members of other departments at Swarthmore College and with members of other Educational Studies departments who are members of the Consortium for Excellence in Teacher Education.

**Within-Department Use of the Rubric**
When the other advisor for a student’s special major is identified, he or she receives a copy of the rubric from the Educational Studies departmental advisor and the advisors discuss its use and/or adaptation for use with the student. It should be noted that the rubric has been well received; those advising students with us report that they find it very helpful.

Following this check-in with the other advisor for the thesis, use of the rubric to work with the student can generally be said to have three phases. First, a few weeks into the term, the advisors review the rubric with the students in order to determine the student’s perceptions of his or her strengths and needs for their work on their thesis. Second, the advisors use the rubric as the basis of a check-in with the student mid-way through the first term to determine what is going well and what is not; in this context the rubric is used to re-establish goals and deadlines. For example, presently one faculty member in the department is working with a student who feels that she is weakest in her capacity to develop a literature review and a theoretical frame. The faculty member has shared previous theses with her as examples and is scaffolding her work on the literature review by requiring an annotated bibliography and questions targeted to support her to identify the frames with which she is working.

Finally, once the thesis is completed, the rubric will be used to guide discussion of what the student achieved and what still could use more work.

There is a weekly check-in on the progress of theses and use of the rubric during department meetings; issues are considered and addressed as they arise.

**Dissemination of the Rubric**

At a college-wide faculty lunch during Spring 2011, the learning goals and rubric for the two-credit thesis were described. Following this lunch, at the request of the chairs of several departments, the rubric was shared, and it is now in use by members of both the Sociology and Anthropology and the Psychology departments.

An email request regarding thesis work of undergraduate majors posted to the members of the Consortium for Excellence in Teacher Education led to the sharing of the rubric with that group of college and university faculty. The rubric is now posted for general use of Consortium members at Princeton University.

**Alternate Use of the Rubric**

At a recent meeting of the Swarthmore Teagle group, the institutional researchers and faculty members from other departments also conducting Teagle projects, a question was raised about how the rubric might be adapted for use by other departments who were not seeking a rubric for theses. Although speculative, it seems likely that another department could use the criteria of the rubric as the basis for talking about their own goals for their students, where in their curriculum these are met, whether other criteria should be listed, and so forth.
Appendix: Rubric for 2-Credit Senior Thesis

Students will have a research question that:
- demonstrates understanding of issues in the fields they choose to study
- bridges the two disciplines of their special major
- is justified using existing literature in the field
- is focused enough to limit the research but broad enough to provide for thoughtful exploration

Students will design a study that allows them to effectively engage with the research question that:
- identifies appropriate data collection tools to answer the question
- builds on methods used in the literature reviewed
- completes necessary IRB requests
- collects and/or works with original data
- analyzes data in systematic ways (using literature, data, theoretical frames)

Students will embed their research in an exploration of appropriate theory and research in the field(s) and:
- complete a literature review to frame and begin to examine the research question
- explore data in light of existing literature in the field
- identify/construct a conceptual framework that allows for a systematic exploration of the research question

Students will take a position and develop a strong argument:
- stating clearly a novel position on the research topic
- using the literature review to frame the argument
- presenting evidence from original data to support their position
- acknowledging alternate positions, anticipating counter-arguments, and addressing why these data best support the argument that s/he has made
- using the argument/position to provide (and motivate) a thread of continuity in each section of paper

Students will produce an effective paper presenting their study that includes:
- a statement of the research question
- a literature review that helps to answer the question
- a description of research methods
- an analysis of data
- a discussion of the relationship between this study and prior work in the field
- a reflection on the limitations of the study
- and uses effective writing techniques that are
  - grammatically and mechanically correct
  - structurally coherent/well argued