Engineering a Traditional English Department: Writing Instruction and the Role of Freshman English

Nicole Amare, Charlotte Brammer
The University of South Alabama/The University of Alabama

Abstract

This paper discusses the results of collaborative efforts to create a writing course across the disciplines for TIDE (Teaming, Integration, & Design in Engineering) students in traditional composition classes. In the fall 1999 semester, the engineering department at the University of Alabama developed a TIDE curriculum in an effort to assist incoming engineering freshmen and to retain more engineering majors. Students in the TIDE curriculum were immediately placed in cohort groups, which allowed them to take all four core classes their first semester (English, chemistry, calculus, and engineering) with the same faculty and group of students. English instructors were hired to teach Composition 101-F sections that consisted exclusively or predominantly of engineering majors. The goal of these EH 101-F sections was to encourage Writing Across the Curriculum (WAC) principles to improve students’ writing for future disciplinary work and for industry.

There were numerous obstacles and successes involved in the cross-disciplinary efforts to develop and teach an engineering cohort within a traditional English department. However, this paper will show that, according to both students and faculty, the results of this collaborative effort were positive. Recommendations for engineering faculty working at universities with traditional writing programs are given.

Introduction

In the fall semester of 1999, the engineering department at the University of Alabama developed a TIDE (Teaming, Integration, & Design in Engineering) curriculum in an effort to assist incoming engineering freshmen and to retain more engineering majors. One component of the TIDE curriculum was the creation of cohort scheduling, or the same group of students taking their four core classes together: English, chemistry, calculus, and engineering. The TIDE program is part of a group called the Foundation Coalition or FC. FC is a National Science Foundation (NSF) sponsored initiative program that funds reform in undergraduate engineering education and consists of students and faculty working together to improve education for and university retention of engineering students. Although the TIDE program had previously collaborated with the math and chemistry departments in 1995, 1999 was the first year that English faculty members were included. The goal for including English faculty, however, was multifarious; yes, it was hoped that engineering students would benefit from the cohort scheduling, but it was also believed that creating EH 101 sections of solely or primarily engineering students might encourage the
English instructors to teach more “practical skills,” or what Barbara E. Walvoord and others have referred to as the common themes or principles of WAC:

- enhancing students’ high-order thinking or habits of mind;
- making students more active learners;
- evaluating student work more effectively.¹

Faculty from all four disciplines who were teaching the same cohort of students met weekly. These meetings consisted of brainstorming strategies for cross-disciplinary assignments. For example, instructors in chemistry, calculus, and engineering tried to incorporate writing assignments into their courses while English instructors included technology in the classroom, assigned paper topics about subjects covered in the students’ other core classes, and adopted universal evaluative techniques. In some cases, the students were encouraged to write not only English essays about engineering, calculus, or chemistry subject matters, but also papers that better fit an “engineering genre”: design projects, proposals, memos, etc. Students were encouraged to develop the cross-disciplinary skills of organization, grammar, “critical thinking, written and oral communication, collaborative work, and innovative, flexible problem-solving.”²

The biggest obstacle in an otherwise surprisingly cohesive effort was with the application of WAC principles: Were our Composition 101F sections simply traditional English classes full of engineering students, or were we designing them as writing classes where we encouraged engineering genres? The purpose of this paper is to share our “lessons learned” in creating this 101F course. Some questions we addressed as we developed the “engineering English course” were: What were the students’ and faculty’s expectations of the course? How well were we teaching cognitive and writing skills that were hopefully transferable across academic disciplines and eventually into the world of work?

Background

The engineering department’s perception of composition instruction through the English department at UA was that it might not be as effective for their engineering freshmen because of three main reasons:

1. Many engineering students were not “writing well” (i.e., poor grammar and organization) in upper-level engineering classes.

2. Local engineering alumni and employers were constantly complaining that their new employees “couldn’t write,” which put pressure on the UA engineering department to make their students better “engineering writers.”

3. Since students were (presumably) not being taught WAC principles or engineering genres, composition instructors at the University of Alabama were not adequately preparing their students to write, as Dorothy Winsor has called it, “like an engineer.”³

In essence, the cohort scheduling idea at UA functions as a reflection of some “turf wars” over writing instruction at colleges around the country. It also epitomizes the conflict of the role of writing instruction: Do English departments exist merely to serve other disciplines’ needs for effective student writers (respective to each discipline)?
There are many misperceptions in English departments about if and how engineering departments teach writing and vice versa. Recently, increased communication and cross-disciplinary efforts between traditionally disparate departments, such as engineering and English, has helped to alleviate this rift and eliminate stereotypes. However, there is always internal strife as well within departments; for example, exactly what is taught in freshman English—specifically how and why composition instructors teach writing the way(s) they do—has been a heavily debated topic for the past ten years in English conferences like the MLA, CCCC, and NCTE, in journals like *College English, CCC, and Journal of Advanced Composition (JAC)*, and in numerous books such as Peter Elbow’s *What is English?*, Sharon Crowley’s *Composition in the University*, Gerald Graff’s *Professing Literature*, and Robert Scholes’s *The Rise and Fall of English*. In addition, the goal of writing instruction at liberal arts universities at the start of the 21st century is leaning toward vocation—i.e., first-year English classes should teach workplace writing skills—even though many, like Ira Shor, assert that English departments are still harbors for the traditional liberal arts angle of education, where students learn wisdom instead of information, build character, discover character, and, according to Shor, “have power.” It is over these issues where the “two cultures” tend to collide. However, NSF’s funding for this TIDE program opened the doors of communication between UA’s engineering and English departments.

Development of EH 101F: “Engineer English” or “English for Engineers?”

According to research and studies done at other universities that are part of the Foundation Coalition (Arizona State University, Rose-Hulman, Texas A & M, Texas A & M at Kingsville, University of Massachusetts-Dartmouth, and the University of Wisconsin), cohort scheduling benefits engineering students. However, retention in the major was not the only motivation for creating English cohort sections. During the introductory TIDE presentation, the concept of integrated curricula was encouraged. Throughout the semester meetings, TIDE instructors were encouraged to find ways that we could, for example, “reinforce concepts through parallel topic coverage.” Likewise, we were encouraged to “use common terminology,” a process that was not always easy for instructors from English, math, chemistry, and engineering to do. Faculty members from the four disciplines met to brainstorm strategies of cross-disciplinary assignments for their cohorts. What these meetings did not consist of were plans to teach heavy-laden grammar exercises or formatting of letters and reports.

Although many faculty members from the English department initially feared that this collaboration would consist of only one-sided change (i.e., only the English classes would incorporate cross-disciplinary strategies), it became clear in the early meetings that this indeed was a collaborative effort to give this group of engineering students an effectively integrated educational experience in all four classes: English, chemistry, calculus, and engineering. For example, one calculus professor added a paper assignment to his normally test-driven syllabus; students were asked to research and write an essay about the history of calculus. In addition, one English instructor collaborated with an engineering professor to revise a writing rubric that could be used for both the engineering and composition classes.

To track the progress of the TIDE program, students and faculty alike were asked to keep a weekly journal. These entries provide a qualitative window into the contribution of cross-disciplinary collaboration in the planning of testing, assignments, grading, and deadlines on the faculty and students in these four departments.
Assessment

The second part of the engineering/English department relationship relevant to this study is the assessment of composition essays written by engineering undergraduates for the purpose of determining the success of the TIDE cohort sections and for meeting the ABET (Accreditation Board of Engineering and Technology) criterion “g”: Engineering programs must demonstrate that their graduates have “an ability to communicate effectively.” Specifically, an assessment committee evaluated samples of oral and written communication from TIDE program students and compared these samples to non-TIDE engineering student samples in order to measure written effectiveness. However, only the written component will be examined in this paper because of its relevance to the debate over the role of composition instruction for non-English majors, particularly engineering undergraduates.

To help meet ABET standards and evaluate the success of cross-disciplinary collaboration, the University of Alabama engineering department hired consultants from chemistry, math, and English to evaluate engineering students’ portfolios. These outside field experts evaluated cross-disciplinary student portfolios in order to measure student progress according to the ABET standards of “Program Outcomes and Assessment” (that is, expected abilities and skills) for engineering programs. Beth Panitz notes that the use of student portfolios is a powerful assessment tool because it “provides a holistic assessment that demonstrates whether a student is progressing toward and truly achieving educational goals.” The job of the consultants was to develop a writing rubric to “score” the engineering students’ writing samples. The caveats in creating this rubric for this particular sample set were many; the greatest concern was deciding from what perspective should the writing samples be assessed: engineering, English, chemistry, math, all, none, or from a combination of discourse angles? Since the engineering students were all freshmen, they were all enrolled in cohort sections—Composition 101 (essay writing), 102 (responding to literature), or 103 (honors; mostly responding to literature)—through the Freshman Writing Program in the English department. Unless students test out, they are required to take composition 101 and 102 or 103. Therefore, all of the writing samples collected in the portfolios were different: a student may have submitted a sample that was a literary analysis, or a personal essay, or even a Web research paper. The wide range of paper topics, along with the divergent background of the evaluators, contributed to the assessment challenge.

As with the development of the TIDE cohort sections for engineering students, the evaluation of “English” essays written by these engineering students encompasses the current debate about the role of composition instruction. For example, the communications consultants created the writing rubric, and this rubric was designed to evaluate what the engineering students had written for composition classes: essays. However, the group of ABET evaluators consisted of instructors from different disciplines, making the writing and reading expectations at times very disparate. Moreover, because the topics of the writing samples were so multifarious, it was very difficult to assess the effectiveness of a two-page process essay on how to make an effective shipping box for eggs immediately after evaluating a twenty-page Web research paper on illegal drug use in the engineering workforce. Not surprisingly, the conflict of competing views on the purpose of writing instruction was addressed repeatedly, with the engineering side desiring more technical instruction and the English side defending the transferability of EH 101 written and critical skills across disciplines after the first year. Although the engineering department had upper-level “W-requirement” (writing intensive) engineering classes, there was still a plea by the engineering department members of the ABET committee to possibly teach other genres besides the essay in the first-year composition classroom.
Results

Despite the stereotypical baggage that all four departments brought to the table during the first meeting, all faculty members were brainstorming new ideas and collaborating by the end of the second meeting. The open lines of communication created an atmosphere of trust and acceptance; one calculus professor wrote during his second-week’s journal entry that he was “surprised to learn that [English faculty] explore ‘real-world’ writing in the classroom rather than just typical 5-paragraph essays.” Although some English faculty members resisted advice from engineering faculty to add objective statements to their syllabi, by the third meeting there was a small group working together to revise syllabi to make them “clearer and in a format that the engineering students would more clearly comprehend and recognize.” Likewise, English faculty incorporated topics and writing assignments outside a literary scope; instead of an analysis of a short story as a paper topic for assignment #3, for instance, some of the instructors had their students write about Rachel Carson’s *Silent Spring*, a book that all engineering students were told to read by their engineering professors. Still other English instructors incorporated the project that the students were working on in their general engineering class. For that class, teams were asked to create airborne advertising that would be featured in the campus gym during a basketball game. Writing assignments ranged from describing the desired effect on the audience and comparing it to the actual effect to explaining the process of how the project worked to a non-technical reader. Since this is a key complaint about engineers, at least one English instructor had students find a critical article from their field and write a summary or explanation of the article for a nontechnical audience.

Aside from trying to integrate curriculum topics, faculty also began collaborating on projects beyond the teaching of these cohorts. Some of the faculty worked on case studies and publication projects together, projects that may not have materialized were it not for the “forced” collaboration of the TIDE program.

Not surprisingly, most students responded positively to the TIDE program: 71 out of 76 students who responded favored cohered English classes. The students commonly wrote about how much they liked working in teams and groups; having class with other engineering students rather than “English majors”; discussing topics in class, usually more than one class (discipline) before writing about them; and writing about relevant topics. One student wrote:

“The best thing about English is that our teacher is making us concentrate on things that are relevant in the society we live in. In English class, we used to just read boring stories and write about things that didn’t affect us. Now we write about things that matter.”

Overall, the opinions of the faculty and staff about the success of creating an English, calculus, chemistry, and engineering cohort for freshmen engineering students in the TIDE program was an extremely positive one. In the future, we hope to

(1) find more ways to integrate writing with other TIDE classes

(2) promote stronger WAC practices within each TIDE English class

(3) encourage more technology use
In terms of assessing the student portfolios from the TIDE program, there were some benefits and drawbacks to creating a universal rubric—one that would apply across at least four disciplines—to assess the student samples from the engineering cohort sections and compare them to non-TIDE students. As mentioned above, the limitations of the rubric were the variant sample paper topics and multiple disciplines. However, the advantages of creating a cross-disciplinary rubric include having a single assessment tool that professors from a wide variety of disciplines could use to assess future writing assignments. A universal rubric also allowed the norming or calibrating session of the assessment committee to go more smoothly. Benchmark samples and rangefinders were easier to establish because all of the committee members were using the same rubric, regardless of academic discipline. There has been a lot of success with universal rubrics in evaluation methods, particularly with companies like the Education Testing Service (ETS), which uses rubrics to norm professors who grade thousands of student samples. Finally, using a common rubric permitted longitudinal study possibilities, provided we used the same rubric for every writing sample we studied, year after year.

The student essays were rated on a five-point scale, with five being above-expectation level, three at expectation level, and a score of one indicating below level of expectation. Table I demonstrates the scores given to a sample student paper by seven committee raters in the areas of purpose, development, and organization (audience and mechanics were the other two areas measured but are not listed in this table).

<table>
<thead>
<tr>
<th>Student</th>
<th>Purpose</th>
<th>Development</th>
<th>Organization</th>
<th>Means</th>
<th>Student Means</th>
<th>Student Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rater 1</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4.00</td>
<td>3.05</td>
<td>.59</td>
</tr>
<tr>
<td>Rater 2</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rater 3</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rater 4</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rater 5</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rater 6</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rater 7</td>
<td>4</td>
<td>3</td>
<td>3</td>
<td>3.33</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table I: Scores by TIDE raters for an engineering student writing sample

In terms of numerical extremes, the lowest student standard deviation was .20 (1.80 and 3.80 mean), and the highest student standard deviation was 1.17 (3.07, 3.93, and 2.87 mean). In other words, the raters had a much higher level of agreement about what was a poorly written paper (one that was below expectations) but had more disagreement about some mid-ranged papers. Not surprisingly, there was some interdepartmental disparity, but ironically the wider range of
scores for these writing samples often occurred intradepartmentally. This result provides a great deal of hope for seemingly disparate disciplines like English and engineering because they might be able to agree about student writing more cross-departmentally than intradepartmentally. This bodes well for opening the lines of communication between engineering and English departments.

Recommendations

While these so-called turf wars may continue, programs such as the TIDE program explored in this paper offer encouragement that solutions are possible. When faculty members across disciplines work together, everyone benefits—students, faculty, the university, and the community. For productive collaboration, however, all participants have to be open to change. Engineering faculty at universities with traditional writing programs might keep in mind the following:

(1) Take the initiative. Nothing will change unless the engineering faculty members are willing to take the first step. The TIDE program creators initiated and guided the efforts to create these special classes for their engineering students. They also organized and conducted all of the meetings, memo distribution, and journal entry collection.

(2) Walk softly. When approaching other departments for input and collaborative efforts, engineering faculty need to allay any fears of encroachment. To achieve this, engineering faculty must be willing to accept suggestions and make changes within their courses as well as give suggestions to faculty from other disciplines, perhaps especially English.

(3) Keep trying, even after the initial enthusiasm begins to wane. The maxim “any thing of value is worth working for” applies to the benefit that students and faculty receive from collaborative efforts.

Reflections

English departments and first-year writing programs all across the United States today are feeling vulnerable as a result of outside (and inside) pressure to self define. In What is English?, Peter Elbow compares the field of English to a “book [that] is trying to paint a picture of a profession that cannot define what it is” (v). Based on his experiences during the 1987 English Coalition Conference, What is English? consists of a series of narrative reflections and descriptions of the 1987 conference and the people at this conference. Although Elbow asserts that he saw at the conference “a consensus about the central practices of English: using language and looking back reflectively at how one uses it” (50), Elbow never commits to a universal definition of the English discipline. He takes this approach for two reasons. First, Elbow believes that a definition of the field of English is not something that is directly observable; second, the practices and pedagogies of English departments are so diverse that it cannot be pinned down by a single statement.

While Elbow’s philosophical approach of resistance to the definition of his discipline has many followers and believers within the field, many outside the English department are less than impressed with any prevailing belief that English is somehow exempt from defining itself, a process that many members of other departments believe is a crucial component of being a discipline. In response to this eschewing of field identity for the sake of reinforcing an identity of
nonconformity, or what Stanley Fish calls “the anti-professional assumption” (261), some, like Erika Lindemann, have responded by making a plea for a collective definition of English, particularly the goal of English 101. According to Lindemann, it is best not to perpetuate the belief that English 101 should be taught according to the teacher attitude: “whatever works for me and my students is best” (301). Lindemann is looking for “a common ground” when it comes to English 101 pedagogical practices so that English as a discipline can “close a conversation rather than continue it” (301). However, despite Lindemann’s desire to answer Elbow’s What is English? question and resolve disciplinary discussions, teachers inside and outside of English departments are still hiding their Poe-esque “wheels and pinions—the tackle for scene-shifting—the step-ladders, and demon-traps—the cock’s feathers, the red paint and the black patches,” partly because to reveal is to risk exposure, but mostly because the profession of writing instruction (sometimes housed in English and sometimes not), is unable to pin down definitively what is taught and why.

It is this ambiguity and unwillingness to commit to a single identity that has frustrated many other university departments, including engineering, and individuals within English as well. It has also contributed to the debate over whether or not the function of first-year writing classes is as service courses for the university, that is, teaching writing so that the students will learn the appropriate writing skills (read: grammar) needed for their major outside of English, or do English 101 classes function as edification for the student, regardless of major. Donald Bushman and Elizabeth Ervin, for example, discussed the pressure from departments outside of English at the University of Arizona to make the writing-emphasis course more grammar-focused because students were failing a standardized writing test (the Upper-Division Writing-Proficiency Exam) (136). The problem for Bushman and Ervin was whether it was the responsibility of English composition instructors to teach grammar skills to freshmen, or was it the duty of the department in which the student was a major? In addition, Bushman and Ervin found that the critics of the writing-emphasis course at the University of Arizona could not agree with one another about what constitutes bad writing or even bad grammar (145). Whether or not freshman English is a service course or an enhancing educational component of a liberal arts education is the debate that is causing the “turf wars” over student writing instruction in freshman writing programs and university engineering departments all over the country.

Bibliography


NICOLE AMARE is a Ph.D. candidate in Composition, Rhetoric, and English studies at the University of Alabama. She also teaches writing full time at the University of South Alabama. Her most recent work, coauthored with Michael McMyne, is *Real Life University,* a college success guide.

CHARLOTTE BRAMMER received her Ph.D. in applied linguistics from the University of Alabama, 2002. Currently, she teaches in the College of Business, at the University of Alabama, and is editorial assistant for *IEEE Transactions on Professional Communication.* Her research focuses on technical and professional communication, sociolinguistics, and writing pedagogy.