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Articles

- Doreen Starke-Meyerring*
Linda S. Clemens Theoretical and Practical Considerations 125
for Virtual Learning Environments in
Technical Communication: An Annotated
Bibliography
- Teresa Kynell* Technical Communication from 1850- 143
1950: Where Have We Been?
- Katherine Staples* Technical Communication from 1950- 153
1998: Where Are We Now?
- M. Jimmie Killingsworth* Technical Communication in the 21st 165
Century: Where Are We Going?
- Jack Bushnell* A Contrary View of the Technical 175
Writing Classroom: Notes Toward Future
Discussion
- Brenton Faber* Intuitive Ethics: Understanding and 189
Critiquing the Role of Intuition in Ethical
Decisions
-

Reviews

- Janel Bloch* *Natural Eloquence: Women Reinscribe 203*
Science, by Barbara T. Gates and Ann B.
Shteir, eds.
- Harriet Blymiller* *Link/Age: Composing in the Online 207*
Classroom, by Joan Tornow
-

Comments and Responses

- Patrick Moore* Myths about Instrumental Discourse: A 210
Response to Robert R. Johnson.
- Robert R. Johnson* Response 223
-

Technical Communication from 1850-1950: Where Have We Been?

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As the discipline of technical communication undergoes increasing scrutiny by scholars and teachers and as the discipline continues to evolve with advancements in technology, we should pause to consider some foundational, historical issues that led to the formation of a technical communication pedagogy in the first place. This piece evaluates shifts in an engineering curriculum from roughly 1850 to 1960 that made possible the development of a technical communication curriculum.

Recently, a number of articles on both pedagogical and theoretical applications in technical communication have argued that teachers should be as least as concerned with teaching the ethical, social, and political ramifications of the discipline as they are with teaching the forms and models associated with the discipline. In fact, Gerald Savage, in his 1996 "Redefining the Responsibilities of Teachers and the Social Position of the Technical Communicator," argues that, in addition to teaching ethical concerns, we should also help students "to reconceive the profession as one that can be practiced in alternative ways that would permit them greater autonomy and professional integrity" (310). Current trends in our journals and in our professional conferences reflect concerns for autonomy and status for technical communicators. These trends are not surprising, particularly given the growth and maturity of the discipline. Before we can consider, however, where we are headed as a discipline and before we can contribute to the shaping of future theoretical and pedagogical trends, we might pause to consider where we have been as a discipline because that history forms the foundation upon which the future will be built. This brief study, therefore, of the curricular shifts that led to the formation of a recognizable technical communication pedagogy hopes to provide some evidence of that foundation.

In this essay, I evaluate curricular shifts in the discipline, particularly as technical communication pedagogy grew out of writing requirements for engineers at roughly the turn of the century. Thus, this study focuses on shifts in an engineering curriculum, shifts that made possible a milieu conducive to the changes necessary for English experiments that resulted in a recognizable technical communication pedagogy. This condensed study focuses on the history of the discipline of technical communication *pedagogy*; the *practice* of technical communication is, of course, far more ancient (see, for example, Tebeaux). Though not all-inclusive (for more detail, see Kynell), this study identifies curricular patterns, evaluates key shifts, and isolates an engineering environment out of which technical writing may have ultimately emerged.

Early Engineering Curricular Patterns and Status Concerns

First, I offer some background on the discipline of engineering from roughly 1850 to the 1862 Morrill Acts. Most engineers during this roughly twelve-year period were not taught in college environments—they were trained either in apprenticeships or they picked up a random engineering or science course within a standard baccalaureate curriculum (see Reynolds). Certainly there were exceptions, namely West Point, “the earliest college-level institution to offer engineering training” and Rensselaer Polytechnic Institute, founded in 1824 as “Rensselaer School,” the first private institution to offer engineering training in America (Reynolds 463). However, virtually anyone working as an engineer during or prior to this period was usually perceived by members of the “professional” class as “vocational.” By 1862 and the Morrill Act, which established a permanent endowment of acreage and funding to promote both liberal and practical education, land-grant colleges like Purdue and the polytechnics emerged as places where engineering would become a curricular alternative. One can imagine the cultural split brewing in this environment as traditional liberal arts schools perceived their mission as higher education, whereas the land grant colleges appealed to the middle class desirous of a professional trade. The result of these two types of education? Status concerns.

By 1870, engineers were concerned that they continued to be perceived as vocational workers. One engineering faculty member at Ohio State University was so concerned about the lingering stigma of vocationalism that he dismissed the term *shop* for *mechanical laboratory*. “Why not call a chemical laboratory a medicine shop?” he asked (Calvert 63). The perception that engineering education was vocational created difficulties for two reasons. First, other classes of professionals who were educated in academic programs still tended to perceive engineers as workers trained to do something specific but not

educated per se. Second, the "tag" of vocationalism, once established, took hold and was difficult to excise. Early impressions often linger, and the perception of "training for a trade" was slow to disappear. In order to counter the often negative perceptions of the profession of engineering, educators embarked on curricular revision as one means to elevate the social status of engineers.

Curricular Revision and the Role of English

This curricular revision led, in part, to the formation of the Society for the Promotion of Engineering Education (the SPEE) in 1893. Interestingly, at SPEE's first meeting in August in Chicago, engineering educators discussed, among other things, the role of English in the curriculum. The concern over English instruction was related to the near illiteracy of many graduating engineers, further complicating lingering status concerns. Though no English faculty spoke at that first meeting, a civil engineer, Mansfield Merriman, presented a paper on the "Training of Students in Technical Literary Work." He concluded his presentation with these words: "The only way to learn to write is to write" (264).

Writing, as a result, became part of the necessary means to solve both the illiteracy problem and remaining status concerns. Unfortunately, engineering students took the required composition course—a current-traditional melange of drills, practices, and rhetorical exercises—and little more. Composition on its own, though, couldn't solve the culture or status concerns as literature could. So, for a period, engineering students took a second English course in literature. By this time, near the end of the nineteenth century, the students themselves were beginning to rebel against extra coursework in an already crowded curriculum. They could find no purpose in either composition (on lofty topics like courage, honor, or patriotism) or literature. One faculty member, in fact, noted that engineering students often perceived their English teachers as "not masculine." "One cannot," he continued, "simply glide into a classroom and greet a class of engineers with a sweet schoolgirl smile and 'my is not this a beautiful spring morning'" (Creek 301). English, in either form, simply wasn't working well either to educate engineers or to ennoble them.

Compounding the problem was the lack of English faculty involved in the discussion at the national level. From roughly 1893 to 1910, the dialogue on English courses was virtually limited to engineering faculty members. Another factor, the training of teachers of English in literature, meant that the few English faculty teaching in an engineering environment were pioneers, charting a course very different than the one they were prepared to face. If composition already held the relatively low status of "service" course, imagine the status accorded *engineering English* or *engineering composition* as it was sometimes called.

An important shift in perceptions occurred, however, toward the end of the first decade of the twentieth century. As engineering faculty called for better writing skills and looked for ways to accord greater status to engineers, some began to look at the culture associated with engineering itself. In a paper titled "A Combined Cultural and Technical Engineering Course," a mechanics professor, George Chatburn, argued that technical engineering courses included in them the cultural value necessary and sufficient for any engineer. In effect, he wondered how engineers could function in society if they had no connection to the history of that society. He saw the vital role of the engineer in a civilized society and, in so suggesting it, hinted at the missing element in English instruction as well. How could engineers embrace writing or literature if the discipline had no direct relevance to their future professional lives (Chatburn 225)?

Engineering English: A Context for Writing

By the end of the decade, educators realized that English instruction had to be tied to students' interests. The way to make that connection, some suggested, was first to tie English to engineering through engineering topics themselves, providing, then, a real-world context for writing. Second, English instruction should be less focused on literature and the compositional modes and more focused on the actual writing engineers might face in their professional lives. Samuel Chandler Earle, a professor of English at Tufts, offered one foundational model of change in his 1911 paper "English in the Engineering School at Tufts College." Earle's role in the formulation of an early technical writing course cannot be overemphasized. Earle, in fact, described his English course as *radical*, noting that English was perceived as the "last bit of salvage from the arts course remaining in the engineering school and as the only means of true culture in a curriculum otherwise hopelessly practical" (34). Earle proposed a course as broad and varied as that given students in arts because, he believed, "true culture comes not from turning aside to other interests as higher, but from so conceiving their special work that it will be worthy of life's devotion" (35).

Earle proposed a technical writing prototype course because "no lawyer, minister, dramatist, novelist, or poet would assume that because he had general training in composition he could become a master of his peculiar form without special study" (37). Composition and/or literature, Earle argued, was simply not enough. And importantly, the course he proposed, though somewhat reflective of requirements in composition, was not a composition course.

Although Earle referred to his course under a variety of titles—*technical exposition*, *engineering writing*, or *engineering English*—the differences from traditional composition courses were apparent. Earle proposed four separate "abilities" that he believed would make English more relevant to engineers:

1. the ability to put into words an abstract thought
2. the ability to describe, in writing, an object not present
3. the ability to write for different audiences
4. the ability to give a concept full treatment by demonstrating understanding in writing (37).

Borrowing from the rhetorical modes, specifically description, Earle reconceived the standard description paper into a mechanism or product description. He added to that, however, two considerations still important today: translating the conceptual into writing and understanding the audience for whom a document is intended.

Who, though, would teach the course that Earle envisioned? Engineers? English faculty? Earle called for cooperation between the two departments, suggesting, in fact, that English faculty be in actual contact with engineering work. However, roughly five years after Earle's paper, the SPEE's Committee on English noted that "the attitude reported between instructors in English and instructors in other departments extends all the way from open hostility to sympathetic cooperation. Between the two extremes is a sort of mild tolerance of one another's existence" (Parks, "Report" 180). Clearly, even with Earle's fundamental call for English that mattered and greater cooperation among faculty, technical communication was slow to flourish. In fact, the chair of the committee on English reported that faculty did not aspire "to become teachers of engineering English, but to get a disagreeable job off their hands as quickly as possible in order that they may bask in the sunshine of pure culture in some other more congenial department" (Parks, "Report" 182).

One faculty member who embraced the concept of an engineering English course, Sada Harbarger from Ohio State University, presented in 1920 a paper on the "Qualifications of the Teacher of English." Harbarger taught engineering English and passionately embraced the discipline. She believed that the instructor "associates English with reality and finds an objective for his students' thoughts—he makes the connection of English with engineering apparent" (302). She also argued that engineering and English faculty had to cooperate in order for the discipline of engineering to advance.

Teaching the Technical Writing Course

Although no one involved in higher education could fashion an engineering English that would be attractive to all English faculty (the deplorable "service" tag lingered), in the 1920s the call to cooperate culminated in a technical writing course that in all likelihood was the synergistic result of (1) experiments in composition courses, (2) the role of English in an engineering curriculum, (3) the increased valuation of engineering itself, and (4) the valiant efforts of a few who fashioned and shaped the course into a prototype course recognizable to us today. Indeed, English instructor J. Raleigh Nelson noted that

I teach the course in engineering reports to seniors. I do not believe anybody was ever born to begin more poorly adapted to do this work than I, because I had no technical training, or no particular taste for engineering. It was a very big cross to me. I took it up as a consecrated cross and I bore it bravely. I made myself think it was necessary. (264)

By the mid-1920s, more and different kinds of engineering English texts emerged, including the second edition of T. A. Rickard's *Technical Writing* (1920), Sada Harbarger's *English for Engineers* (1923), and Sam Trelease and Emma Yule's *Preparation of Scientific and Technical Papers* (1925). As important as the textbooks were, the important question by the end of the decade, however, involved the qualifications of the teachers using those books. English faculty still usually obtained degrees in literature and many of them still perceived the service course engineering English as little more than drudgery.

By the mid-1930s, some were attempting to answer that question. In a 1938 address to the SPEE on "Improving the Status of English Instructors in Technical Colleges," an Iowa State College professor, J. Raymond Derby, suggested that teachers of technical writing or technical exposition should be trained at "land grant colleges that stress science and technology but already possess strong departments of English competent to offer majors and the Master's degree" (253). This, of course, was the logical place for experiments in training technical communication faculty. It was at the land-grant schools that engineers first wrestled with issues of status, professionalism, and academic recognition. How appropriate, then, that the English course that emerged during the struggle for academic recognition would find the land-grant schools the proper place for training teachers to further develop and carry the course. As Robert Connors has pointed out, the discipline was becoming a "thriving industry by 1938, having produced its own authors, experts, and directors" (338).

By the end of the 1930s, though, America braced for the inevitable changes that first one and then two world wars would bring. Advances in weaponry and technology meant more jobs in manufacturing, so the need for technical communication had never been greater. Defense-related production influenced the development of technical writing for two reasons. First, as the sophistication of weaponry increased, manufacturers needed writers to explain that technology to workers who lacked a technical background. Second, engineers, who had previously been largely responsible for writing user documentation to accompany their creations, had only a few English courses to draw upon for the challenge of explaining technology to the sometimes technologically ignorant. Technical writing, then, was realizing full status as a discipline because people were being hired to do it.

From 1940 to roughly 1950, though, old issues, like the place of a "humanistic stem" in an engineering curriculum resurfaced. The Hammond Report of 1940 expressed concern over too much practicality in the curriculum. Should the engineer pursue a purely professional curriculum? Should English education serve to humanize the engineer? Should engineering students stay in school longer, if necessary, in order to take more "culture" courses? As ironic as it might seem, by 1950, engineering questions began to resemble engineering education questions postulated in the nineteenth century.

The desire for a humanistic stem for engineers, was, in part, a means to prepare them for service and productivity to self and society. But as they debated more literature courses for engineers, what educators didn't consider was the humanistic stem implicit in technical communication. To write about technology for users presupposed a human link; technical writing, functional writing, acknowledged society by its very existence. Interestingly, this discipline that bridged technology and humanism was neither purely scientific nor purely humanistic; the discipline bridged both and yet was claimed by neither.

The roughly forty-five years that would follow this period are rich for examination. While technical communication's place might seem secure by roughly 1950, this is only partially true. Connors found that nearly every college was offering the course by the mid-1950s; nevertheless, in 1976 the Society for Technical Communication (STC) listed only 19 academic degree programs in technical communication (Souther 2).

So where have we been? From the turn of the century to the mid-1920s, we have been part of an engineering curriculum, but only insofar as experimentation allowed. English faculty, most with degrees in literature, inherited the difficult, shifting curriculum of the engineer and sought ways to make English real and valuable to the engineer. From the 1920s to the 1950s, we solidified our place as a distinct discipline, distinct from composition and literature courses and, yes, distinct too, from engineering courses. But where did we end up? Was Carolyn Miller right that we are still relegated to the category of "skills" course? With the further advent of computer technology, where are we headed as programs in the field proliferate? Those questions, and questions regarding our future, are more difficult to answer. We occupy a place in both business and English departments. We are still a feature of both scientific and engineering curricula. We are clearly here to stay; examining our history as a discipline in this country sheds some light on how we have endured and flourished in the academy.

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