



Cementing Writing: A Writing Partnership with Civil Engineering

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“We believe good writing is a very important professional skill that will make you a much better engineer,” Stanley Rolfe, then Chair of the Civil Engineering Department at the University of Kansas, wrote to his student engineers in 1994. (The letter is available at <http://www.ukans.edu/~writing/docs/manuals/ce_rolfememo.html>.) In the open letter, he explained why CE students would receive complimentary writing manuals custom-designed for them by their faculty. Rolfe had named the manual *The KU Civil Engineering Writing Plan* to emphasize that, more than merely a book, it was the physical representation of a multi-year process to develop a department-wide writing program. The lessons learned from this writing partnership between our WAC service and Civil Engineering support instituting programmatic writing plans in order to promote faculty development as well as provide student support.

“It is not sufficient to be knowledgeable about your technical field,” Rolfe wrote in the letter. “You also must be able to communicate that knowledge to others.” His foremost motivation for the writing program was grounded in the pre-professional goals of his department’s curriculum and in the pragmatics of the local culture. Given the demanding CE curriculum, he wanted the writing incorporated into the course work rather than layered on top of it. The challenge he, his faculty, and their dean faced was how to provide students learning opportunities in an academic culture that provides few options for practicing technical writing skills.

The dean’s ten-year effort to find viable ways to prepare School of Engineering students to write effectively as pre-professionals had been stymied by several factors:

- a dearth of technical writing specialists at our school
- the few sections of Technical Writing offered by the English Department
- no writing center (until 1998)
- the absence of a formalized writing-intensive component in the curriculum

The problem became so substantial that several Engineering departments removed the Technical Writing course requirement from their curriculum. Seeking workable alternatives, the dean approached Writing Consulting, our University's WAC service for ways to incorporate writing into their curriculum.

The Process

Consistent with our unit's mandate to serve faculty through a faculty-development WAC model, Writing Consulting staff focused on the School of Engineering curriculum and instructional support in order to affect students' writing through a partnership with their teachers. Civil Engineering, a department with 23 faculty for its 100-150 students, volunteered to initiate a programmatic approach to writing.

Rather than impose a generic course that might teach students to write *like* engineers but not help them write *as* engineers, CE faculty, many of whom are professional consultants in addition to being academics, elected to provide systematic academic and pre-professional writing experiences within their curriculum. The CE faculty and our WAC consultants first focused on determining the writing used naturally throughout the curriculum. We brought these writing practices and preferences to the foreground through interviews, faculty-wide discussions, and analysis of syllabi and assignments. This overt attention to academic and professional writing was valuable: it gave faculty an opportunity to reflect on their values about writing, to learn how their colleagues use writing, and to determine gaps in their students' writing experiences. Our conversations with faculty revealed that they valued writing and assigned a considerable amount, but assignments were often redundant in writing type (reports dominated), uneven in rigor, and inconsistent across the curriculum. Faculty had never discussed among themselves how each was using writing in class, so the discussions that our WAC staff initiated facilitated useful writing conversations. The discussions also revealed that, from a structural perspective, the lock-step curriculum offered several opportunities for a systematic approach to writing. Because of the large number of transfer students, no true entry course existed; however, all students took one of two gateway courses their junior year, and a popular senior seminar functioned as a capstone course. These classes could be made writing intensive.

Our staff used the curricular information and the insights of the faculty to embed writing throughout the existing CE curriculum while respecting individual teaching styles. Our staff circulated the proposed writing program among the faculty for feedback. Based on that input, we modified the writing program, which the faculty adopted. The program, which is summarized at <http://www.ukans.edu/~writing/docs/manuals/>

ce_kuprogram.html>, offers consistent writing opportunities throughout the Engineering students' four years of course work. Year 1 addresses basic communication; year 2 introduces technical writing; year 3 focuses on professional writing; and year 4 emphasizes workplace/career skills. This labor-intensive, curricular-design effort taught us how CE faculty members think about writing. In return, we helped them understand how their students negotiate the multiple academic and pre-professional writing expectations as they learn to write as engineers. Adoption of a program is not the same as implementation, however.

The Product: A Manual

To encourage faculty to make this next step and to provide students with support, the chair commissioned a concrete manifestation of writing—a student manual. Accustomed to thinking about writing as a result of our writing-program interviews and document cycling, the faculty enthusiastically devoted an in-service session to outlining the document. Wholesale collaboration ensued, with our staff working from the outline to draft academic and workplace writing materials, cycling drafts to the faculty for feedback, and revising and expanding the manual based on faculty input. We also contacted the American Society of Civil Engineers to obtain the most current citation style sheet and the editors of *American Scientist* for permission to reprint two articles requested by the CE faculty. Within a semester, the document that the chair had originally envisioned as a pamphlet became a 43-page manual that is distributed free of charge to all incoming Civil Engineering students compliments of the department and the Dean of Engineering. Contained in this manual (web version available at <http://www.ukans.edu/~writing/docs/manuals/ce_title.html>) is a summary of the CE writing program, guidelines for types of pre-professional and classroom writing, stylistic tip sheets, a list of resources, and two articles reprinted with permission. (The articles, not available in the electronic version, are H. Petroski, 1993, "Engineers as writers," *American Scientist*, 81.5, 419-423, and G.D. Gopen, and J.A. Swan, 1990, "The science of scientific writing," *American Scientist*, 78.6, 550-558.)

The Results

The chair had initiated a process intended to yield a product that would enhance writing across his department's curriculum. Besides providing students with support (especially important in the absence of a writing center), the effort also heightened faculty awareness about writing for learning and for communication in academic and workplace environments. Unfortunately, that curricular process may have been too closely intertwined with the subsequent product (the manual) for professionals who were accustomed to concrete outcomes. After the initial burst of

enthusiasm for the writing program, our staff grew concerned that the carefully crafted manual actually constrained the development of the program it was meant to enhance. For some teachers, the manual became an end in itself rather than a means to implement the writing program. This “disconnect” on the part of a few lessened the effectiveness of the writing program as a department-wide initiative. Today, compliance with the writing program remains voluntary, and the use of the manual varies with individual teachers, courses, and students.

The Lessons Learned

Although writing in KU CE has not been institutionalized to the extent desired, the writing program has not been a wasted effort for either Engineering or our WAC service for the following reasons:

- The manual has become a physical manifestation of the writing program.
- Faculty have initiated innovative approaches to incorporate writing into the gateway course and capstone seminar.
- The paper and web forms of the manual serve as resources for students.
- Faculty involvement in the writing program has raised the profile of writing across the School of Engineering.

This year, five years after we began work on the writing program, Writing Consulting is noting resurgence in interest on the part of Engineering faculty about programmatic approaches to writing. Invariably, the CE manual is the departure point for these writing discussions.

Besides continual interest by Engineering in Writing Consulting’s services, our office has benefited from this writing partnership with CE in other ways. The work has given us unique insight into engineers’ views of writing. We have also learned valuable procedural lessons:

- the benefit of engaging numerous faculty in the process so that the discussion about writing will function as WAC writing workshops
- the need to set time aside for “maintenance” of existing initiatives
- the importance of working with both faculty and students simultaneously

This project has also become a departure point for other programs to incorporate writing; for example, The CE Writing Plan inspired the Undergraduate Coordinator of the School of Business to commission a manual

for the nearly 800 undergraduates in that school. Our experiences with CE expedited the Business project (web version is available at http://www.ukans.edu/~writing/docs/manuals/bus_title.html).

In 1998 Writing Consulting's mandate was broadened to include direct writing support to students. Our new writing center is an added dynamic to Civil Engineering's pursuit of "good writing" skills for students. Faculty who have been reluctant to teach with writing because of their own comfort level and the lack of follow-up writing support for their students are now eager to collaborate with us in order to link their students with appropriately trained tutors. The presence of a writing center thus gives us an alternative perspective from which to approach Stanley Rolfe's ends—student, curricular, and faculty support. The high profile of the new student service brings to the foreground the topic of writing for all the departments in the School of Engineering, stimulating conversations that are richer because they are informed by, but not limited to, our previous work with KU Civil Engineering and its Writing Plan.

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