The Case for Comfort: Oral Communication in the Engineering Curricula

Betsy M. Aller
Michigan Technological University

Speaking in public is not a comfortable task. Few of us approach it without some apprehension; certainly college students are, in general, considerably more nervous. Yet oral communication is of increasing importance and use in the industries where our students will end up, and our response to industrial needs has been to try to increase students' opportunities for oral reporting. I'd like to present some ways in which we can help make students' oral communication experiences more successful, useful, and lasting by making them more comfortable.

When I first started teaching the oral presentation seminar for junior-level chemical engineering students at Michigan Tech six years ago, I inherited a course where each student gave two 10-minute speeches on some technical or scientific topic. The topic could be one they had researched in a journal, something covered in class, or, for those lucky enough to have co-oped, a review of that co-op or internship work. As students gave their speeches, their classmates and I would fill out evaluation forms and give a numeric rating for that speech.

Unfortunately, the speeches were generally pitiful in every sense of the word. Most of the speeches were either vague and disorganized or overly-specific and subsequently, incomprehensible. Student speakers were uncertain and often terrified, standing alone in front of a class, trying to convince us (and themselves) that they knew what they were talking about. Although a few students (particularly those who 'd co-oped in industry) came through with clear, well-organized, lively speeches, they tended to be the students who least needed the experience anyway. Those students who desperately needed a successful speech or two under their belts were those made most wretched by the rule of a technical topic. Despite my best efforts to encourage and reassure speakers, most left the class still feeling unconfident about their speaking abilities.

As I wondered what it was about the class that made students, and their speeches, so miserable, I thought about my experiences teaching written communication. My first teaching experience was in Michigan Tech's Writing Center, coaching students in their freshman English classes. I frequently saw students uncomfortable with essays that were disorganized, dull, and usually on a topic the student was not particularly interested in or knowledgeable about. When I met with a student whose paper *was* clear, specific, and precise, it was usually because that student knew a lot about the topic and cared deeply about passing that knowledge on to others. I increasingly became aware that a key problem with poorly-written papers was the lack of "ownership" by their authors, many of whom were uneasily just "killing ink" on an unfamiliar topic in order to get a grade.

This can hold true with engineering reports as well, as many of us have experienced. If even senior students in a capstone laboratory course don't understand the audience for their report, the objectives of their experiment, what data they 're supposed to end up with and what it means when they do get it, they tend to produce poorly written reports--vague, unsure of claims, disorganized. They 're uncomfortable writing the .

reports, and it shows.. We may decide that they're simply "bad" writers. 1 would argue that this is not always the case, any more than that those who gave poor speeches were necessarily just "bad" at oral communication.

A problem in many of these cases is that the students don't "own" what they're communicating about. They find it difficult to make their topic relevant or useful for their audience because they don 't themselves see the topic's relevance or usefulness. Feeling uncertain of their information makes them deeply uncomfortable, unable to produce good results or take with them satisfaction and confidence from the learning experience.

So I gradually changed the way the presentation seminar was run. I now ask students to choose a topic they already know and care about: cross-country skiing, breeding hamsters, planning camping trips to Isle Royale, presenting chemical experiments to local school children, etc. I also stopped making students rate each other's speeches and ask instead that they offer positive comments and suggestions for improvement. I changed the course requirements to one individual and one group speech. And we now practice--ungraded--other oral communication tasks: impromptu speeches, oral progress reports, interviews, phone calls, poster sessions.

I should note that changing from highly technical to more "common" topics has met with resistance by some of-my engineering colleagues. The y are concerned that students won' t learn how to give a "technical" speech--if students talk about "everyday stuff," they won' t be able to talk about technical material when they 're required to. I counter by suggesting that nobody on the job will ever ask students to present information on a subject they have little or no familiarity with. They will instead be required to talk knowledgeably about projects they have worked with intensively --a topic that they "own. " I also want to be clear that a non-technical topic does not mean a non-technical approach to the speech. I still require that students' speeches adhere to what I call the characteristics of a strong technical presentation: be tailored to the audience's level of expertise, start with sufficient background, be broken up into logical divisions that build on each other, contain specific, well-supported information, and build toward sound conclusions and, where appropriate, specific recommendations.

The results of these changes convince me completely that they are valid. Students' speeches now are generally well-organized, specific, focused, and lively. Their colleagues gain much more from offering suggestions rather than grades. The group speech provides peer support while it prepares them for both industry needs and their senior capstone courses. (Instructors in those courses report exceptional improvement in students' *technical* presentations over the last several years.) Comments on teacher evaluations and in conferences are now almost without exception positive; students are clearly more confident about their ability to report on technical information in the future because they know they can present a useful and informative speech.

In addition to the oral presentation seminar, we are increasing opportunities for students to speak about their work, and we're mindful of the value of doing so in more comfortable situations. Senior design groups now present brief oral summaries of that week's progress, using an overhead and taking turns within the group, while instructors and peers ask questions in a fairl y informal give-and-take. Instructors report that the comfort students gain in these small presentations strengthens confidence for the formal group presentations given later in the term. In their engineering communication courses, students are presented with scenarios in which they must pretend to call industry people for job-related or other information. The situations are unfamiliar and thus uncomfortable, but students appreciate being able to experiment in a supportive, non-threatening environment.

We've seen that increasing our students' comfort in public speaking situations has clearly improved both the quality of students' oral reporting and, more important, their confidence that they are, in fact, competent and even excellent public speakers. Our final proof is the calls we now get from recent alumni relating industry successes in oral reporting and crediting their positive speaking experiences in their engineering courses.