DOCUMENT RESUME

ABSTRACT.
        College students who have clear goals for careers in
engineering, management, law, medicine, and teaching have a pressing
need to become proficient in writing, speaking, listening, and
reading. While they should continue the reading and analysis of
imaginative literature that they began in high school, they should
also develop their latent powers in the other dimensions, especially
listening and speaking, and should learn the basic techniques and
subtleties of professional writing and reading as well. Exercises
that combine as many of the four skills as possible have proven to be
both well-liked by students and very efficient in increasing overall
mastery of language skills. Two typical assignments--interviewing and
abstracting--illustrate how the student is required to produce
coherent, useful communication using several skills in conjunction.
Success of the pedagogy is shown by growth in syntactic maturity,
organization, emphasis, documentation, and student confidence.
(Author/FL)

CREATING A REASON TO WRITE:

DYNAMIC COMMUNICATION EXERCISES FOR PROFESSIONALLY-ORIENTED STUDENTS

by

George P. E. Meese*

By way of preface, I would like to note that my situation in the Engineering School of the University of Virginia is probably unlike other situations that a humanities teacher might face elsewhere in the nation. We do not grant degrees in our discipline; we are strictly a service department; we have no graduate students; my eight colleagues and I are tasked by the engineering faculty with improving the communications skills of students who are planning to enter professional careers. These students predominantly will become engineers, but they typically enter several other professions as well. Because of the special situation in which we work, I have tried to generalize my comments about our pedagogy in order that you might find more information that can be readily applied in your own setting.

The program that I will discuss here is wholly consistent with the recommenda- tions made by several researchers who are studying the on-the-job practices and needs of writers and speakers in technical disciplines. Those of you with interest in the field of technical communication should find the work of G. Douglas Meyers, Benjamin Glassner, Dixie Goswami, Barrie Van Dyck, and John D. Gould especially helpful for the many practical suggestions they have offered to make our instruction consistent with empirical findings about writing and speaking in professional settings.

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*Dr. Meese is Assistant Professor of Humanities and Chairman of First-
Year Communication at the School of Engineering and Applied Science, Thornton
Hall, University of Virginia, Charlottesville, Virginia 22901. This paper is an
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Content in Freshman Composition."

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My senior colleagues, Drs. Joseph L. Vaughan, Luther Y. Gore, O. Allan Gianniny, and T. Graham Hereford, developed our program after many years of experience in the engineering school and in consulting work with practicing professionals.

Two features of our program are central and provide distinctive learning experiences for our students:

1) every assignment requires the students actively to use at least two kinds of communication skills.

2) every communication that students produce gets reviewed by both their fellow classmates and the instructor.

These central features should be kept in mind, since they underlie all of the particular activities discussed below.

The Students

Professors who are not familiar with professionally-oriented students may not realize the challenge that such students pose for the conventionally-trained teacher of communications. Many students have a hostile or defensive attitude toward "the humanities" or "English"; they may have found their greatest weaknesses in high school were in our subjects, while their strengths emerged in the sciences. Many have elected careers in technical fields precisely because of an aversion to the work of writing and the scary exposure of one's self that is public speaking. Naturally we avoid exacerbating their fears, and we are very careful not to attack all of the positive feelings they have toward their futures as engineers and engineering managers. We support and encourage their emerging sense of becoming "professional technologists."

Students in professional programs are very highly motivated. These freshmen are all too aware that over the next ten-to-twenty years, there will be about ten percent more engineering jobs than there are new graduates to fill them. Typical starting salaries this year are about twenty-two thousand dollars for a fresh bachelor of science with no work experience. These most sanguine prospects provide

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enormous motivation for the first-year student to do well.

The students are goal-oriented. They know where they are going four years from now. It is difficult if not impossible to get them to change their frame of reference from future rewards to the pleasures of the present-tense learning process.

The immediate problem we teachers face is that these eager and energetic students have a very narrow repertoire of communication skills. In writing, they have done some expository pieces, some analyses of imaginative literature, perhaps some creative writing, but none have done technical writing of the type their careers will require; few have any sense of what "professional" writing might be. Less than five percent have been given any systematic training in public speaking or informal oral discourse. Some students have done extensive reading, but even those who come from homes where their mother or father is in a technical profession have never read their parents' journals or trade magazines. No students have been given instruction in listening. They do not see each other as credible peer critics; the only person they respect for evaluation of their work is their teacher (we are seeing some increase recently in those who have had experience with peer-criticism in high school, but they still constitute a tiny minority).

Professional Communication

One of the most pressing requirements our students will face, just four short years after freshman composition, will be to communicate professionally in what they so quaintly call the real world. What is involved in professional communication"? What will our students have to be able to do?

First, professional communication is almost always purposeful, with a high premium on efficiency. While exploratory or speculative writing does figure among the types used by professionals, and while some researchers suggest that free-writing is desirable in management's decision processes, almost all communication is produced to get a specific task accomplished, with clearly understood schemes of reference,

support, and style.

Professionals' communication is <u>authoritative</u>. By definition, a professional is a person who claims special authority by virtue of his or her practice of <u>a</u> learned art. The speech-acts of professionals, to borrow a concept from John Searle, create their personalities, their working ethos, in a way that involves social status-claiming. The establishment of ideas that can carry the force of professional influence and gain favored reception by others depends wholly on the ability of the writer or speaker to express them in the "professional idiom" appropriate to the situation.

Claiming special status in society necessitates acceptance of special responsibilities. <u>Professional communication is thus subject to rigorous review and criticism by peers</u>. The communications attending peer review are a hybrid genre of evaluative language, often exercised under implicit but powerful rules, and often involving very serious consequences for those who cannot articulate their positions. Students who have no knowledge of the dimensions and implications of peer-review communication, and who have never experienced the dynamics of a peer-review exchange, are at considerable risk in the first--and crucially important--years of their careers.

Professional communication is <u>dynamic</u>. The language of professionals is power-in-action; professionals wield power through language. The engineering-physics distinction between static and dynamic energy nicely demonstrates the contrast: a self-contained idea is like the potential in a static object, but an expressed idea turns that potential into a force that gets a job done.

Pedagogy

Professionals do not see themselves, typically, as "technical writers," or "public speakers," or "journal authors." They probably do not think about their language while they are using it, or identify themselves as experts in the use of language. Paying attention to language is something they did back in school.

So we teachers need to ingrain a repertoire of appropriate language uses that will be automatic and that will serve the real needs of our students in their careers. Our design of communication lessons therefore tends to keep matters of theory out of the classroom, and we instead emphasize practice: talking about language is subordinate to using it.

Corporations have been aware for some time of the inefficiencies that attend workers who cannot or do not listen well. You may have seen the new series of commercials by the Sperry Corporation that stress the virtues of a company that teaches its employees to listen. Recognizing that good listening habits are not among our students' skills as they come to college, we spend considerable time teaching techniques of active listening.

We teach speaking, both formal public address that typically has been relegated to departments of speech, and the forms of speech that serve other job needs, such as conferences, oral instructions, oral abstracting, and impromptu persuasion.

Our instruction in writing follows procedures that are familiar to most of you in the audience, so I won't elaborate on them. One distinguishing feature of the writing portion of our course is our attention to the role of visualization in technical communication. Successful exchange of ideas and information in the technical professions nearly always depends upon the ability of the composer to give the receiver some clear visualization of the central concepts. Our students read materials that are supported by good illustrations, graphs, charts, and the like, and they are expected to exercise their imaginations to invent good visuals for their own papers. We spend some time on the use of visual metaphor as well, realizing that the question, "Do you get the picture?" is an excellent test of shared understanding. Incidentally, you can get excellent help for free from the 3M Company on the use of visuals in professional communication; their representatives give workshops tailored to your situation that are free of commercial emphasis.

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How can any English teacher expect to cover technical reading, writing, listening, speaking, and visualization, and peer criticism in a single, three-semester-hour course?

We try to design a pedagogy that keeps students active in all uses of language as much as possible. I said at the beginning of this talk that every assignment requires at least two forms of language use, but often there are four or more things going on at once. Each individual skill--say, public speaking--comes up for explicit attention in its turn, but the other skills are always in action.

The Research Interview

One exercise that requires use of the full communications repertoire is the research interview project. We ask students to interview a graduate student or a professor in one of the ten engineering disciplines of our school, to discover what is going on in the school's laboratories, and what research is in progress. Students do not have any clear sense of what engineering research is when they come to our classes; they have been through a general orientation, but they have not investigated any single field in any depth at all. The project serves the students' immediate and long-range needs, because it forces them to gather factual information about their prospective majors, which they will declare five months later, and because they get a sense of engineering work that they would not have otherwise until their design courses in their third or fourth years. Thus we tap a natural source of energy, the students' interest in their own futures, to sustain the work in communications about those futures.

Before conducting their interviews, students have to research the discipline they have chosen; they examine journals in the library, go to department secretaries for literature about the departments and biographies of the professors. They visit the laboratories and talk informally with undergraduate majors. In our classes, we conduct workshops on interviewing techniques and we trade ideas about appropriate

questions. The actual interviews are held during short appointments, with no professor having to spend more than forty-five minutes (three interviews of fifteen minutes each); no tape-recorders are permitted, because students are expected to use their listening skills to retain pertinent information. Students adapt their research and interview materials to a formal extemporaneous oral presentation. The oral reports are videotaped, and all reports are supported by visual aids of the type I am using in this talk today (flip charts and overhead transparencies). After giving their oral reports, the students write up a report of their investigation, using their learning about the different functions of oral and written media to expand those areas of their work that were inappropriate for oral presentation. Throughout the oral and written steps of the project, peer evaluations, active listening, and abstracting are taking place among those not speaking or writing. Class members receive feedback on nearly everything they do from their classmates; there is never any question about how a speech was heard, because the speaker gets a written abstract and suggestions for improvement from his or her audience. Written reports are read and evaluated by classmates, either in writing or in a round-table discussion. The final step in the project is self-evaluation; students are asked to write a description of their learning and an evaluation of their success relative to others whose work they have heard and read. Occasionally, students discover that the field they had planned to enter is not as attractive as one a classmate discussed; sometimes, students attract friends to work in their fields. These changes are interesting to our faculty not simply because the career decisions are important to individuals, but because the students are so thoroughly involved in each other's communications. The peers take each other seriously, listen attentively, criticize pointedly, and take justifiable pride in the craftsmanship of their communications.

Abstracting

Teachers typically think of abstracting as a writing task. I have decided to .

include it among my examples because its association with writing would normally blind teachers to alternative applications of the abstracting skill. In our program, where we are always seeking to exercise at least two skills in every assignment, abstracting takes on a broader function than just the production of a summary. to head up a dissertation or formal report. Students' technical careers are served by our teaching of the American National Standards Institute (ANSI) requirements for descriptive and informative abstracts; most professional journals and trade magazines in engineering and applied science follow these requirements with only minor modifications. Having mastered the ability to extract major concepts and lines of reasoning from often heavily documented and profusely illustrated readings, the students have internalized a communication skill of considerable potential power. We tap this skill by having students abstract each other's oral or written work in "oral abstracts", and we teach them how to listen for important information in panel presentations and class discussions. Because good abstracting must be sensitive to structure, rhetorical slant, context, logic, and overall purpose of a communication, students who practice it in all language uses soon develop a much more subtle understanding of organization, appropriate tone, style, and the like. The efficiency of their own utterances, which I mentioned before as a major concern in professional communication, increases markedly.

Benefits of Dynamic Communication Exercises

The work is dynamic in several senses: We tap the energy that is latent in the students' personal motives; we force every student to play an active role in the class, in the school, and in the transactions of language that become a personal style tempered by professional ethos; the language our students use functions to accomplish more than self-expression, it is purposeful language that conveys information and gets jobs accomplished.

Students' confidence in their use of language increases dramatically. Far too many of our students have been told to go into a scientific or technical career because they are weak in verbal skills. These freshmen are shy and reticent, as anyone would be when asked to perform his or her weakest skills in front of a critical audience. By changing the language-learning task from explicit learning of theory and abstractions about language to active exercising of language that works, we remove the threatening aspects of the process and help the students to feel better about their language at the same time.

Students' learning is applied immediately outside the communication classroom. Reading in all courses is improved by having learned abstracting skills; class discussions in other subject areas benefit from better articulation of ideas and better attentiveness to others; report writing is better organized and better illustrated and supported.

Skills that can be measured by conventional means improve rapidly. For example, we are witnessing a change in T-unit length from that typical of high-school graduates to that typical of "mature writers" after only one semester of instruction--without using sentence-combining strategies (pre-instruction 14.9; post-instruction 17.5, with significantly improved variation in unit length). This appears to be more than one year's growth in syntactic maturity in about four months' work.

We are not sure yet that any one feature of pedagogy is responsible for these gains, and it may be impossible, given the number of variables in our system, ever to localize any "key" to success. Although we are studying and evaluating our efforts constantly, we suspect that the real source of accelerated growth of our students' skills lies in an area inaccessible to scientific measurement: the faculty's respect for the students' professional orientation, and the students' respect for the usefulness of the language that they exercise in our classes.