# THE IMPORTANCE OF CONSULTING TO THE TEACHER OF TECHNICAL WRITING

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## Introduction

Which faculty is best suited to teach technical writing to undergraduate engineers and technologists? Should it be the Engineering Department, whose members are comfortable working with the "technical" component but often feel decidedly uncomfortable when they have to deal with language-handling skills? Or should it be the English Department, whose members traditionally teach all English language subjects and are confident in handling the "writing" component, but feel ill at ease or disconcerted by the technical aspects of the work they must assess?

There is no clear-cut answer to this question, just as there is no clear-cut answer to the question: "Who makes an effective teacher of technical writing?" Ideally, he or she will have:

1. A thorough grounding in writing the English language.
2. General familiarity with a broad range of technical subjects, with a reasonably thorough knowledge of one technical discipline.
3. An ear for the rhythms and nuances of the written word.
4. An enthusiasm for teaching technical writing, combined with a flair for helping students learn how to write well.

Qualifications 1 and 2 can be learned, but seldom are acquired by the same individual. Qualifications 3 and 4 are personal traits which each of us has to a lesser or greater degree. Engineering faculty automatically have technical strengths (qualification 2) and possibly may have writing prowess (1 and 3). English faculty automatically have language strengths (qualification 1) probably have writing prowess (3), but are unlikely to have technical strengths (2).

When I worked in industry as a technical editor for an electronics firm, I discovered that it was easier to train a technical person with a flair for writing to become a technical writer, than to train an Arts major with a flair for technical topics to perform the same task. But in an academic environment I have found the reverse to be more accurate: English faculty seem to be more willing to steep themselves in a technical field than Engineering faculty are willing to develop strong language handling skills.

## Why Technical Orientation?

At this point you may legitimately ask: Isn't my expertise in language sufficient in itself to teach any kind of writing?

My answer would be a simple "yes" were it not that technical undergraduates are an unusual breed. (By "technical undergraduates" I include potential engineers, scientists, physicists, chemists, technologists and technicians.) All are primarily interested in technical subjects, only a few show interest in Arts subjects, and many have experienced difficulty with English throughout high school. Most view having to take another English course with real concern, if not distaste. Consequently they are intuitively suspicious of any attempt to ram "English" down their throats.

Their suspicions were outlined to me three years ago by Gary ———— , a graduate electronics technologist who had been a student of mine some four years earlier. We met in a shopping mall, and over a cup of coffee Gary described how the class felt when first they encountered Communication as a subject and me as their instructor.

"When we saw the subject 'Communication' on our timetables," Gary said "most of us thought it would be an electronics subject, like Telecommunication. But word soon got around that it was really written communication, and we quickly surmised that its name was disguised so we wouldn't suspect we were going to get another English course."

"Then you walked into the class," he continued, and he chortled at the memory. "You hadn't said more than a dozen words before a guy at the back of the room hissed under his breath: 'It's English! And a Limey's teaching it!'"

This built-in resistance to English means that when we teach technical writing we face students who probably need our subject badly but have pre-conceived ideas which cause them almost unanimously to reject it. They feel they have already learned all the English they will need as an engineer, chemist, etc. Some have even come to fear English, expecting (possibly from experience) to be ridiculed because they don't know, for example, what the active voice and parallelism are.

I have found that I have to overcome this defensiveness if I am to avoid what otherwise can be an uncomfortable learning environment for my students and a frustrating teaching experience for me. It can be done best by making all the examples I use, and the exercises they write, relevant to the technical discipline in which they are enrolled, regardless of whether I am teaching a comprehensive topic such as the full formal report or a simple item such as subject-verb agreement.

There are two requirements to consider:

1. Finding real-life situations to develop into realistic report-writing models and assignments.
2. Becoming sufficiently "technical" oneself, so that one can speak reasonably confidently to students about the topics and technical reports they have to write.

With luck, both of these requirements can be satisfied by the same source.

Information for real-life report-writing situtations can be garnered fairly easily by approaching local technical businesses. This alone will provide a rudimentary knowledge of specific topics, but will not be sufficient in itself to give one a broad base of even limited technical knowledge. However, if we in turn use our expertise as teachers of English to provide writing and editing services for the same businesses, we can concurrently gain a much better understanding of their technical products and services. Consulting can be the key which opens the door to technical experience.

Who to Contact

First one has to identify local businesses and technical organizations which could use writing/editing assistance. They may range from small manufacturers needing help in writing product manuals and descriptive leaflets, to medium-sized consulting firms looking for someone to dot the "i's" and cross the "t's" of their proposals and brochures. (In general, smaller businesses seem to need a writer, whereas larger organizations need either an editor or a person to teach business and report writing skills.) A representative but by no means exhaustive list might contain the names of:

professional engineers and engineering consultants
research and development organizations
manufacturers of mechanical/electrical equipment
power, gas, telephone, and water utilities
city engineering departments
computer service companies
provincial, and sometimes federal, government departments, such as Highways, Agriculture, Mines, Energy and Resources.

Services to Offer

As English teachers we have three services to sell: writing, editing and teaching. There is also a fourth service - professional advice - which can be offered when one has accrued sufficient technical writing and editing experience.

As writers we can expect to work on product descriptions, operating procedures and instructions, maintenance manuals, news releases and sales leaflets. Normally, a technical writer works from notes prepared by an engineer or technician and fashions them into the required document. Alternatively, he or she takes notes while the engineer describes the equipment or process step by step. Along the way, the writer has to be prepared to ask many questions (and concurrently broaden his or her technical background). Knowing how and why a particular piece of equipment works is just as important as being able to describe what it does.

As editors we are likely to edit reports, proposals and brochures, plus any of the items mentioned above. And as teachers we can expect to show company staff how to write technical business letters and reports, and sometimes proposals.

Although initially a teacher of English is likely to feel like a fish out of water when working in a technical environment, it's well to remember that not knowing much about the technical aspects of a service, equipment or product often can be an advantage. Many of the manuals, brochures and reports an organization issues are intended for readers who either are not technical or are not familiar with the topic. The person who designs or works closely with equipment may have difficulty in seeing it through the readers' eyes and hence may be unable to describe the equipment in simple, clear terms. Because we are much less knowledgeable, both of the equipment itself and of technical topics generally, we should be able to recognize more readily how much information readers will need if they are to fully understand the subject.

How to Get Started

The first step is to get into touch with a local engineering or technical company, preferably one involved in several technical disciplines. Contacts with individual engineers and consultants usually can be arranged by asking a member of the Engineering faculty for an introduction to a friend in the engineering community.

I have found that most practising engineers and technical supervisors respond enthusiastically when I explain I need ideas for projects which can be used as realistic report writing assignments. (They seem to recognize the importance of report writing instruction, possibly because many have never received any during their undergraduate years.) Not until later, when I have established that I am trying to develop a pragmatic technical writing programme, do I enquire whether the organization they work for could use help in editing its reports and brochures.

At this point it's worth looking at a bit of history: When I was hired 15 years ago to teach report writing to engineering technology students, I fully expected to work with undergraduates enrolled in an electronics engineering course (the limited technical experience I had up to that time was in the electronics field). The college administration, however, ignored my background and assigned me five civil engineering technology classes to teach. I was horrified, because I knew nothing at all about civil engineering.

A colleague in the college's Civil Engineering Department referred me to Allan ———— , a partner in a Winnipeg firm of consulting engineers, who listened carefully to my request and then suggested an excellent list of topics his company had worked on, such as an overpass construction snag and a storm-water disposal problem. At the time I felt I was asking rather a lot of naive questions, but Allan proved both patient and helpful, and carefully explained everything I did not understand. (He even volunteered to "guest speak" to my classes.)

I developed the problems into report-writing projects, had Allan check them over to ensure that I had not violated any technical aspects, and then tried them out in class. They proved workable and the students seemed to like writing the reports better than writing previous assignments. This prompted me to use more technical assignments the following semester.

During my second visit I asked Allan whether his company could use any editorial help. I did not know it then, but the company was evaluating environmental effects of a proposed power transmission line and would soon have to write an environmental impact assessment which could be understood by engineers, government officials and the public. They wanted input from someone unfamiliar with the technicalities to ensure that their report would be understood by all readers, and particularly by persons who lived in the area the transmission line would pass through.

The following six years saw me editing and occasionally writing brochures, reports, analytical studies, proposals (the lifeblood of many consulting firms), technical papers for engineers to present at conferences, news releases, and even an in-house newsletter. Through-

out this period my technical knowledge expanded and became more and more diversified.

Tallying the Result

Looking back, I can recognize now just how valuable my consulting experience has been. I can readily list five significant advantages which have accrued from my association with Allan and his associates, and since with other organizations. (After six years my consulting workload became so heavy that I had to help Allan find a full-time technical editor for his firm.) Consulting has:

1. Injected relevance into my classroom teaching (I can give real examples of how a particular report is used in an engineering setting).
2. Provided a wealth of examples that I can draw on and disguise for classroom use (many of the examples have since been disguised even further to become exercises in my textbooks).
3. Demonstrated to the engineering community that graduates hired from our college have a solid background in practical report writing.
4. Broken down the communication barrier that previously seemed to exist between the English faculty and the college's technical instructors, and coincidentally demonstrated that the English Department is teaching a relevant, usable subject (not just "Related English" as it used to be known).
5. Made the teaching of Technical English/Communication/ Report Writing much more exciting, both for me and my students.

Even more important, I seem to have overcome the traditional student resistance to "Communication". Students sometimes tell me that our sessions together are more like labs than English classes, because they are writing correspondence and reports that deal with real topics. They can see the link between what I am teaching and what they learn from their technical instructors.

I hope that my fortuitous experiences in consulting will prompt other teachers of technical writing to take the same route. The work can be interesting, often frustrating, but in the long run always satisfying. Much pleasure can be gained from seeing a company produce a "quality" technical manual which, although it does not bear one's name, bears the stamp of one's hand.

Conclusion

The first step in teaching a practical technical writing course is to derive real-life models and assignments from a local industry or an engineering company. English teachers who also do some practical writing and editing for the organizations they contact gain a significant personal advantage, in that they are able to bridge the gap between the Engineering and Arts faculties. Their students benefit from the teacher's knowledge of industry, and both benefit from the receptive learning environment that develops in their technical writing classes.

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Ron Blicq is a Canadian teacher of English who is also one of the recognized authorities on technical writing in North America. He has written three books on technical and business writing, all published by Prentice-Hall: Technically-Write! (1972, 2nd edition 1981, for engineers, scientists and technologists), On The Move (1976, for technicians), and Guidelines for Report Writing (1982, for all report writers). He teaches technical writing and industrial psychology at Red River Community College in Winnipeg, owns a small consulting company (The Roning Group) which specializes in providing workshops and correspondence courses in technical and business writing, and is education chairman of the Professional Communication Society of the Institute of Electrical and Electronics Engineers (IEEE).

In a note accompanying his manuscript, Ron wrote: ".... this is not a technical paper or journal article in the normal sense, but rather a few notes reflecting my personal experience which I hope will be useful to other teachers of technical writing..."