# TECHNICAL WRITING VS. TECHNICAL WRITING

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I don't usually admit this in public, but I am a "technical writer". The term has become so generalized, representing so many types of writing and so many job functions, that few professionals wish to be called "technical writers".

Some basic definitions contribute toward our defining these various types of technical writing. According to accepted usage, an "author" originates written materials and/or practices writing as his or her profession; a "writer" writes as an occupation. To "edit" is to make written materials presentable for publication or presentation, but an "editor" supervises the policies or production of a publication. And, lastly, "technical", deriving from and pertaining to "technique", refers to a systematic procedure by which a complex or scientific task is accomplished. These definitions begin to help us clarify the various roles, but they do not yet make explicit the job functions and levels.

Given those definitions, let's examine the term "technical writer". Most often in industry, a "technical writer" has a working knowledge of technology and his/her ⌄job level is considered occupational rather than professional. He or she usually has enough technical knowledge to be capable of rearranging material others provide, but not enough to be capable of originating materials. Then what about the person who is considered a professional and who originates written technological material? We need to coin a term for this person, perhaps "technical author".

These two definitions point to the reasons the term "technical writer" has poor connotations for many people in industry. The line between the two is very fine: no black and white distinctions, just many shades of gray. There are many of us who are in fact, in Joe Rice's term, "closet technical writers" (ref. 1).

I once refused a job because it carried the title "Technical Writer". After a discussion with the manager, I accepted the job under a different title. New title--Engineer Scientist III. The same pay, but the title "Technical Writer" would have marked me and, more importantly, it would have been detrimental to me in later assignments with other companies. In that job, I was to originate technical materials; the company was hiring me for my technical expertise. I was, in fact, a technical author.

Many titles are used to circumvent this problem: "engineering writer", "specification writer", "technical communication specialist", "technical publication specialist", "proposal management specialist", and so on. All of these people have at least one attribute in common; they are all capable of originating material. They are all, in fact, technical authors. Salaries in this category are much higher than those for technical writers. Industry pays for technical expertise combined with communication skills.

When technical students, for example in engineering, graduate from the universities, do they have the communication skills they need for this role in industry? Rarely. Industry usually has to train them. What about English or journalism majors who take a course in technical writing and go to industry for a job. What are their capabilities? I think, by our earlier definitions, most of them are qualified to edit--to make material presentable for publication or presentation. My experience in industry has shown me that of the two degrees, journalism is the more useful, and journalism students are generally the more successful because of their design skills and, particularly, their familiarity with interviewing techniques. English majors, however, are almost always the better writers. Some of the recent Technical Communication graduates have both skills and are more correctly "technical editors" than "technical writers".

How well prepared is an English or journalism major for a job as an editor? Mary Fran Buehler's discussion of some types of edits, as they are performed at Jet Propulsion Laboratory, (ref. 2) not only articulates the types of edits but also implies some of the skills required to perform those edits:

Putting a publication through the various production processes, monitoring progress, making out the necessary paperwork;

Making sure that the publication reflects company policy;

Making sure that the parts of the publication match in a physical or numerical sense, and that every element mentioned is actually included;

Giving a minimum-level language and graphics review to camera-ready copy to ensure that the quality is suitable for external publication;

Clarifying illegible copy;

Marking a manuscript with format instructions for the compositor or illustrator;

Assuring appropriate and consistent usage of such mechanics as capitalization, abbreviations, reference style;

Giving the manuscript a complete in-depth language review;

Reviewing the manuscript for content coherence, emphasis, subordination, and parallelism.

To be able to perform and supervise all these functions is to be an editor. I realize there are editors who cannot do so. Do English or journalism majors, at graduation, have the necessary skills to perform these functions? Not usually. Industry has to train each of them, and it can take several years before they are proficient.

But to the listing of editorial functions (and, hence, types of editors), I would like to add one other category: the "technical editor". I realize there are people in positions carrying the title of Technical Editor who have no technical knowledge, but this is not the norm. The proficient technical editor can write, can perform the policy-making tasks of an editor, and he or she has a working knowledge of technology. To achieve the skills needed for this function, industry can provide the training, or the editor can go back to school for some technical education. Technical editor salaries are traditionally higher than those for editors and technical writers.

Industry needs people in all four categories; however, the greatest need is for technical authors and technical editors. Industry managers literally cannot find enough of these people.

What kind of program would prepare students for these jobs? What would create an effective technical writing program? Most of us, I believe, understand the principle of training: You take a student and determine his or her existent knowledge and skill level. Then you determine your goals-- the skills and knowledge you want that person to have. Once you have determined these two, you supply the parts that lead from the former to the latter.

Obviously, this formula is too simple; it is laden with problems. Problem 1: The skill level and style of learning of a technical student is different from that of a liberal arts student. Most engineering/science/math majors concentrated on and were shaped by math and science in high school--after all, that is their main interest. They took only the required communication courses and did only enough to get by. On the other hand, most English and journalism majors avoided math and science courses and concentrated on, and were shaped by, literature, jounalism, etc. That too is understandable-- these are their interest areas. The problem here, then, is in assuming the initial level of all students to be the same.

Problem #2 is in determining our goals--what we want from these people. What we want is two different sets of skills--technology and communication--with some overlap, of course. The skills required of the technical editor and the skills required of the technical author are not wholly the same. Therefore, the university preparation of the technical editor and the university preparation for the technical author should not be wholly the same. Potential technical editors do not need the heavy courses in math and design; they do need courses especially designed to teach the general principles and terminologies. Potential technical authors need some communication preparation different from that of technical editors. Industry has been providing

that training for years. I hope the trend is changing toward the universities providing more usable preparation; it appears to be.

To illustrate the training needed for communicators in industry, let me relate a personal experience. As a consulting engineering writer, more than ten years ago, I was on an assignment to write a manual on an Atomic Frequency Standard (a highly accurate instrument used to calibrate precision electronic test equipment). I had what should have been sufficient skills: adequate technical knowledge and about five years' engineering writing experience. I soon felt those skills to be marginal when I discovered that I had to explain some Quantum Mechanics theory to a technician reader, a high school graduate. I had to lower the reading level without losing the technical accuracy. The Army specifications called for an 8th grade reading level. I didn't know how to measure reading level. And I surely didn't know if it were possible to reduce Einstein's third law of photochemistry to 8th grade words.

What I finally did was bribe (out of my own pocket) a military electronics technician (with a fondness for alcohol and food), who approximated my intended audience, into reading and responding to the copy. We spent hours in long discussions while I found the words and explanations that would reduce the content to 8th grade vocabulary and searched for the analogies that would make him--and my intended reader--understand the content. Throughout the discussions, the deadline loomed.

After 13 weeks, I produced 150 finished printed pages. I had written seven drafts of the 40-page theory section, so in actuality I had written 390 pages but produced only 150. Forty hours a week for 13 weeks translated to something more than 3.5 hours per page, which is within industry standards. I had, however, actually spent another 700+ hours of my own time, which brought the actual rate to nearly 8 hours per page. That is not within industry standards, and I considered it unacceptable.

My client and his customer were impressed with the end product. I was not. I could not stand that pace or frustration for long and decided that if I were to continue in this business, my existing writing skills were not sufficient. So I left an excellent paying job, enrolled at a local university, and signed up for various English and journalism courses. I had courses in composition, courses in writing about literature (called composition), technical writing, creative writing, reporting, magazine layout and design, and several literature courses. I wrote newspaper articles. I wrote entertaining (probably only to me) articles. I compared and contrasted styles of various writers and poets. I read The Odyssey, The Iliad, Sophocles, Eumenides, Euripedes, various pieces by Plato and Aristotle. I loved it--and still value that knowledge, but I still didn't have what I felt I needed.

Somewhat frustrated, I went to an advisor in the English department. After a two-hour session, her advice was, "Maybe you should give up trying to be a

writer. I just don't think you have the ability. The courses you've taken should have created the skills you're seeking." That left me confused. I had been very well paid as an engineering writer prior to returning to college. In college, I had made the Dean's List every semester, so I had obviously worked hard and learned what I was supposed to have learned. But she was telling me I didn't have the necessary ability.

I finally figured out that the theory that one learns to become a writer by learning to appreciate literature is analogous to the idea that one learns to become a gourmet chef by going to the really fine resturants and learning to enjoy the different foods. Maybe I'm wrong, but I think that all you become is a fat connoisseur.

In all those courses, no one had mentioned hueristics, audience analysis, communication theory or rhetoric theory, and I still thought "epistemology" was a dirty word. It was another five years before I found the right people (outside the college classroom) to introduce me to the work of Young, Becker and Pike, Bateson, Kenneth Burke, Jim Corder, Bob Hopper, Tom Pearsall, Jim Souther, John Walter, and others; and before I could then discover just how much Aristotle and Plato really did have to offer.

Now, there are more innovative writing programs. I am still not convinced, however, that sufficient progress has been made. Recently, for an engineering writing job, I interviewed a bright young engineer, a 1980 graduate with a 3.8 overall GPA, with two English composition and two technical writing courses on his transcript. When I asked him about invention and audience analysis, he looked blank. He did know that Aristotle was a Greek. He had not heard of the Society for Technical Communication, The Society of Logistic Engineers, or the International Association of Business Communicators; he had made application to IEEE.

What can we do? How do we teach the technical and scientific students how to write effectively for business and industry? How do we teach English and journalism students the skills necessary to become technical editors and technical writers?

I think the key is closer alliance between us; it is time for industry and academia to join together to better meet the needs of both. We need to form advisory panels which include representatives from both industry and the universities. We need the university faculty to have some industry experience and to invite some industry people to teach parts of courses. We need industry to become more aware of your problems and constraints and to invite you to share in what we do. We need faculty members to join some of the professional technical societies, and we need industry people to join some of the professional academic societies. Together, we need to enlarge the common area in Schramm's communication diagram. It is time for both groups to get out of the dining room and into the kitchen.

How can you in the classrooms help us in industry to contribute to our joint goal? You will have to articulate more clearly the definition of the product

you are producing. I believe both the term "technical writer" and most technical writing courses are too general and too loosely defined to accomplish this objective. Who or what is your audience? If you cannot define the audience, you cannot define the product. If you cannot define the product, you cannot produce it. Produce technical and scientific graduates with good technical skills and competent technical communication (especially, writing) skills, produce editors/writers with good technical communication skills and competent technical skills--and you will have industry beating a path to your doors.

I am heartened by what I see happening in some current writing programs. I believe we are starting to see the light at the end of the tunnel. I do hope it's not another train.


## References

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2.  Buehler, Mary Fran. "Controlled Flexibility in Technical Editing The Levels-of-edit Concept at JPL". Technical Communication (First Quarter, 1977), 1-4; and "Measuring the Editor's Job: How Do We Know What We're Doing?". Society for Technical Communication. Proceedings of the 24th ITCC (1977), 236-239.