

WHYS AND HOWS OF IN-HOUSE WRITING

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I regret that I must write my contribution to this panel rather than participate in person. This is particularly regrettable because I have not had the opportunity to hear the related panel this morning and the present panel's other participants this afternoon. Thus, I may overlap or seem to ignore important points made in both panels. If so, please excuse me -- it will be inadvertent.

To get as much into the spirit of this discussion as is possible from 1200 miles away, I've studied the abstracts submitted by the panel's other members. From time to time, I'll comment on some of their ideas.

I suppose there's no maxim that doesn't have an invalidating exception. Nevertheless, I'm going to advance one formulated by the late Norman Shidle years ago, when he was editor of the SAE Journal. The SAE, of course, is the Society of Automotive Engineers -- which, although engineers aren't supposed to be able to write, has long managed to be articulate, if not literate.

Norm's maxim is, and I quote verbatim: "Clear thinking must precede clear writing." He maintained, and so do I, that the best writer in the world can't write clearly about something he doesn't clearly understand.

We can combine the requisite technical knowledge with the requisite writing ability in only two ways.

1. We can teach engineers to write, or
2. We can teach writers to engineer.

Of the two, I believe it is easier to teach engineers to write. So that's what I do.

I agree wholeheartedly that in-house courses are not the only way to accomplish the task. The earlier you catch the little devils, the better the training will stick. And that, I believe, is part of the reason why so much in-house training is needed today. The job just didn't get done earlier.

Grammar-school teachers, years ago, used diagramming and syntax to teach coherent sentence building. They also taught their little charges to

outline before starting to write. To some extent, anyway, the outlining step provided the clear thinking that must precede clear writing.

Then came the progressive, free-expression, era that believed one way is as good as another. Reading was taught by the look/say, whole-word method. Students could no longer sound out a written word to determine if they had heard it before. As a research professor at Georgia Tech in the early 1950s, I had graduate students working for me who couldn't recognize the names of chemicals that they could step into the lab and synthesize with ease.

High-school English teachers largely ignored composition, because study of contemporary writing styles was more fun -- and a great deal easier -- to teach. "Me now, I just wanna be a catcher in the rye or a lord of flies."

College composition courses were taught by English teachers on the Liberal Arts side of the university. Matriculating engineers were given qualifying tests that might opt them out of such "time-wasting" courses -- as, indeed, I was.

In those days, the saying was: "Writers are born, not made." And, I submit, that was because few teachers, if any, knew how to make a writer.

Then, in the 1940s, two curious men asked what makes writing clear or unclear? Why do some writers make even simple ideas hard to understand? And why can others make very complex ideas reasonably understandable even to laymen?

One of the questioners was an Austrian refugee, Rudolf Flesch, who came to this country not knowing how to speak or write English. He taught himself how to speak by going to the movies and matching the visual action with the sound track. In other words, he learned the English language the same way all of us here learned it -- by osmosis. He literally absorbed it -- which is no small trick when you're already grown up.

The other questioner was Robert Gunning, who went to work for a Columbus, Ohio, newspaper after being graduated from Ohio State University. As a reporter whose writing was extraordinarily clear, he was asked to contribute items to a most unusual new newspaper. It was named "My Weekly Reader," and its aim was to bring worldwide news to junior-high students and, thereby, stimulate their desire to read -- in other words, to give them something to read above the Dick-and-Jane or Bobbsey Twins level.

A few newsmen, like Robert Gunning, could write clearly for teens and subteens. But most could not. Gunning wondered why not. In another

part of the country, and from different background and experience, so did Rudolf Flesch.

Within a year or so of each other, both men developed readability indexes. They analyzed the parameters that make writing unnecessarily complex. Because of its simplicity and its computer-proved relationship to the years of schooling required to read with comprehension, Gunning's Fog Index formula has been more widely adopted than Flesch's formula. In fact, it has become a very useful yardstick for determining whether a piece of writing is unnecessarily complex.

Do sentences ramble on and on, without the pause of a comma or period, so that the initial idea is forgotten before the final idea is proposed? To avoid this, Gunning made average sentence length a prime parameter in his Fog Index.

The other prime parameter is use of unfamiliar, complex words. Why, as Mark Twain said, write "metropolis" when I get paid the same for calling it "city"? The same, of course, goes for "approximately" versus "about"; "characterize" for "describe"; "proximate" for "near"; "diminution" for "drop" or "decrease" -- and any number of other multisyllabic pompositives for more familiar synonyms.

Some people write to impress rather than express. Usually, this shows through, and the impression is unimpressive.

One of Gunning's ten principles of clear writing is "Relate the complex to the simple." An example might be electric voltage and current, which nobody can see, to water pressure and water flow. If one wants to express how large a "black hole" in space may originally have been, he might try comparing it with the diameter of the sun, which all of us see every day.

O, there are many ways of teaching writing. And I maintain that most of them have been ignored in recent years by English teachers trying to educate the scientifically oriented people who will develop and guide our technological progress in years to come. That's really not the English teachers' bag, and they probably shouldn't be saddled with it.

So who should do the job? If it hasn't been done before the graduates are cast out into real life, then business and industry must supply what the educational system has not.

That, very briefly, is the case for in-house training. If the educators haven't done the job, the employers must.

Out of my own company's need in the early 1950s, I sought out Robert Gunning at a hotel symposium he was conducting in Cleveland, Ohio. Hundreds came, one or two men per company, to take Gunning's one-day course in major metropolitan areas around the country.

What we wanted at our Laboratories was to train scores of researchers to report their results clearly and concisely. At two or three hundred dollars a researcher, in the hotel format, that would have taken years and cost a fortune.

So we asked Gunning if he would come to Detroit and give his course in-house to all of our people who needed to communicate in writing. He agreed, and together we set up what was either the first or one of the first of his in-plant courses.

Over the years, we came to realize that Fog Index and the Gunning ten principles of clear writing still left us somewhat short of truly effective communication.

One major problem was thought organization -- something Gunning didn't much consider. An important corollary was determining the primary audience and its particular needs and non-needs. To whom are you writing and why? What do they already know? What more do they need to know? How do I best relate what they need to know to what they already know? And how do I avoid confusing them by telling them more than they need to know?

These are questions, I believe, that most college and university people have not asked themselves. Therefore, we employers have been forced to ask ourselves. The results have been in-plant training courses. We don't do it to put English teachers out of work. We do it because the job hasn't been getting done.

One problem has been that the neophytes never bring the payoff bottom line up front in the reports of their efforts. I think they got that way because of their education, not despite it. And the fault lies not with the English faculty, but with the technical faculty.

Consider what a technical-faculty member looks for in his students' reports. The prof probably has been assigning the same laboratory experiments to successive classes for years on end. His purpose is to instill experimental abilities -- not to obtain an answer he already knows. Therefore, as his students soon perceive, the way to get an A is to report chronologically -- and in detail -- every manipulative effort and technique employed, step-by-step, in conducting the experiment. At the end -- and only at the end -- do you divulge the result.

Then the students graduate and are hired by result-oriented companies. Their abilities to conduct experiments and employ scientific techniques are tacitly assumed from their degrees and resumes. Now the emphasis is on results. The bottom line of their college reports now is of top-line importance. Somebody, somewhere, has to convince them that the way to earn an A has shifted 180 degrees. Of necessity, this part of their education has fallen to the industries and businesses that employ them. You can send them out to remedial courses, or you can do the job in-house. Of the two alternatives, in-house usually is better, faster, and cheaper.

Very briefly, that's the case for in-house training. It supplies what hasn't been supplied by academia -- at least up to now. I think it can be supplied in school. But to do so, teachers are going to have to consider the real-life needs out there -- consider what employers need and want, not what the faculty has been awarding with A's.

This leads me to ask where the snobbery that Mr. Ransome alludes to really lies. Is it in the engineer who is unwilling to communicate, or is it in his writing mentor who believes the engineer can't communicate. Believing that engineers have hairy ears and suffer from tunnel vision and intellectual snobbery is a gross misinterpretation. Truth is, they just don't suffer fools willingly. The savant who comes along and tells them they are saying it all wrong had better be sure he knows how to say it right. "Clear thinking must precede clear writing."

That is why I believe that the teachers of technical writing should be technical people, themselves, preferably with working experience in industry or business. The training they provide must be user-oriented, need-oriented -- not theory-oriented.

In the abstract of his talk here today, Dr. Smith said the student should be taught to use words precisely rather than quote "writing like he talks" unquote. Personally, I fail to see how, why, or where those two techniques are mutually exclusive. A person brought up in a home of reasonably educated parents learns to speak well before learning to write at all. And the clear thinking that must precede clear writing is done in the brain, not on paper.

Gunning's ten principles of clear writing include "Develop your vocabulary." The reason is not so you can use the word "paradigm" when you mean "example" or "rhinitis" when you mean the common cold. Gunning believes that the more words you know, the more clearly and precisely you can think. When you have completed the clear-thinking step, you then translate your precise thoughts into the simplest, least complex verbiage for the broad-

est, least specialized audience you wish to reach. ... To do less than that is, in itself, a kind of intellectual snobbery.

Einstein once was asked for a thumb-nail explanation of the theory of relativity. His answer went something like this: "When a man sits on a hot stove, a minute seems like an hour. But when he sits on a swing with a pretty girl, an hour seems like a minute. It all depends on where you are. That's relativity."

With that as an example, and in the interest of keeping things reasonably brief and to the point, I now conclude. I send you greetings and best wishes from Detroit, and I sincerely regret that I'm not able to be with you today.