



Knowledge Consortium of Gujarat

Department of Higher Education - Government of Gujarat

Journal of Humanity

ISSN: 2279-0233

Year-2 | Continuous issue-11 | March-April 2014

Causes of Poor Writing Practices in Technical Communication

Abstract

Writing is a skill; like other skills, it can be learnt, and like most skills it is not inborn. To improve this writing skill, we need first to consider our experience as readers. Everyone is aware of the huge amount of written material to be dealt with; much of it is verbose, far too long for the job it has to do, and—what is worse—confusingly organized. By thinking of our irritation as readers with the inadequacy of many writers, we can learn to be more professional writers ourselves. Why is so much technical writing so difficult to read? If we are to improve writing, it is worth spending time diagnosing the sources of this all-too-familiar failure.

This article discusses the reasons/ causes for poor writing, its authority and tradition so far, justifying the struggle in technical communication.

Keywords: writing, skill, material, diagnosing, sources, authority, tradition.

I. Introduction

Writing is a skill; like other skills, it can be learnt, and like most skills it is not inborn. For example, few people lack the basic equipment to learn to ride a bicycle (balance, strength, sight), but most become skilful cyclists only after much practice. Confidence is the main necessity, and having the courage to get on and try. The same is true of writing. Most people have the basic equipment (tact, experience, language), but like riding a bicycle, writing is a skill that must be learnt by doing it. No amount of reading, or absorbing rules and advice, can substitute for practice. Practice can bring coordination and control that will change writing from an apparently hazardous exercise to an efficient means of getting somewhere.

II. WRITING AS COMMUNICATION:

The first task is to encourage the right attitudes to writing. An instructor teaching timid old ladies to ride bicycles would soon find that getting them to take a positive and confident view was a major step towards success. Like mathematical techniques and specialized knowledge in the subject, writing skill is basic professional equipment. Professional scientists or engineers spend up to one third of their working time writing, reading and talking, and paper is one of the major products of all industrial and research organizations.¹ Many engineers think that a sound education in writing is as important as education in technical subjects such as metallurgy or business management. By making the writing task easier, we can reduce the burden on the reader, and thereby make the communication of information more effective. We should start by emphasizing that writing is an essential professional skill in which we can take as much pride as we take in experimental technique.

To improve this writing skill, we need first to consider our experience as readers. Everyone is aware of the huge amount of written material to be dealt with; much of it is verbose, far too long for the job it has to do, and—what is worse—confusingly organized. By thinking of our irritation as readers with the inadequacy of many writers, we can learn to be more professional writers ourselves. Read, for instance, this passage:

The principal advantage that the soft contact lens offers over the conventional hard contact lens is increased comfort. The associated benefits of rapid patient accommodation and extended wear times with minimal overwear syndrome are also superior to hard lens experience. However, experience has taught us that

maintaining the soft lens in such an ideal, comfortable state for the patient requires the daily maintenance of a satisfactory care regimen. Of prime importance in such a regimen is cleaning.

Cleaning is even more important for maintaining comfort in soft contact lens wear than in hard contact lens wear. A study of the physical and chemical nature of the soft lens aids us in understanding why this is true.

Soft lenses possess an intricate internal structure with a tightly entwined micropore meshwork and a pore size distribution estimated at 5–50 angstroms, indeed the tightness of the pore meshwork is demonstrated by the relatively slow uptake of water by the lens in becoming fully hydrated from the dry state. In addition, tests in our laboratories have also indicated that—in completely clean lenses—an external solution exchanges slowly with the internally held lens solution.

The subject may be unfamiliar, but that is not the only cause of discomfort. Readers are on the rack as they hang on grimly through interminable sentences such as:

Soft lenses possess an intricate internal structure with a tightly entwined micropore meshwork and a pore size distribution estimated at 5–50 angstroms, indeed the tightness of the pore meshwork is demonstrated by the relatively slow uptake of water by the lens in becoming fully hydrated from the dry state.

They are irritated by the pomposity of:

...requires the daily maintenance of a satisfactory care regimen.

They are repelled by the windy self-importance of:

The associated benefits of rapid patient accommodation and extended wear times with minimal overwear syndrome are also superior to hard lens experience.

These features make reading the passage seem like wading through a quagmire. The feeling is depressingly familiar; but the passage is neither unusual nor untypical. Text-books, journal articles, reports and memoranda too often have the same uninviting style, the same indigestible content. Yet such passages can be written in another way, making them easier to read and therefore more communicative:

The main advantage of the soft contact-lens is that it is more comfortable to wear than the conventional, hard contact-lens. Also, patients get used to it more rapidly, and are able to wear it for longer with only slight adverse effects. However, to keep the soft lens ideally comfortable, the lens must be cared for daily. Cleaning is particularly important—even more important for maintaining the comfort of soft lenses than of hard lenses.

Soft lenses have an intricate internal structure. They have a tightly entwined micropore meshwork, and pore sizes estimated at 5–50 angstroms. The tightness of the meshwork is demonstrated by the relative slowness with which a dry lens takes up water and becomes fully hydrated. Also, our tests have shown that, if the lens is completely clean, an external solution changes places with the internally held solution only slowly.

The difference between these two passages lies in the way language is used, since the technical content is the same in both. They show that it is possible to make the reader's task easier, by using different writing tactics.

III. Causes for Poor Reading:

Why is so much technical writing so difficult to read? If we are to improve writing, it is worth spending time diagnosing the sources of this all-too-familiar failure. The main blame for the poor quality of much technical writing probably lies with educators. The last time most writers were taught about writing was at school, but the ideas of style which the English teacher inculcated in poetry lessons had more to do with long words and roses than with using language to communicate information. Many engineers and scientists were left with the conviction that 'English' was not for them. When

they chose their careers, they thankfully gave up English for the clearer and more precise worlds of physics and chemistry. And the distaste for 'English' often persists into adult professional life.

The legacy from school English lessons includes half-remembered advice about style; such rules as 'never repeat the same word in a sentence', or 'long and unusual words are elegant and interesting'. These maxims are inappropriate to the task of communicating technical information. Yet because writing has not been thought about subsequently, they survive in writers' subconscious minds and creep out unexpectedly. Bad teaching has a lot to answer for. We should review the rules of style learnt at school and re-think the whole process of communicating.

Another problem survives from education. Writing at school or college has a different audience and a different purpose from the writing of a professional scientist or engineer. During fulltime education, laboratory reports, essays or examination papers are written to be read by people who already know the information. The readers are concerned with assessment, and writing is a process of display; students aim to impress with their sophistication and knowledge. The natural tactics are to use as much information as possible, to embed it in sophisticated language with complex structures, and to use recondite (!) vocabulary. There is nothing wrong in these tactics; they are the inevitable result of a system where learning and assessment go hand-in-hand. But the result of having no other training in writing is that most students emerge from full-time education with a writing style designed to impress rather than to communicate.

In professional life, the aim and audience for writing are different. For the first time, the new professional scientist or engineer is writing for people who do not know the information. The readers do not want to assess, they want to learn and use information for their own purposes. But usually no-one warns young writers that their tactics must change. What is needed is simplicity, not sophistication; the minimum, not the maximum of information is best. Most writers carry on writing in the way that brought rewards before, and this seems to us a major reason why so much professional writing is less effective than it could be.

IV. Authority and Tradition:

Technical writing is often poor because writers are frequently not given a clear enough brief for the job. Asked to 'write a report on production', they may not be told for whom, why, and for what purpose. Is the report for technical staff, or line management? Is it for record purposes, or for some important board-level decision? How much detail is going to be needed? What facts are important? All these questions will affect the tactics adopted in writing the report. Without this information, only an approximate and confusing report can be written. Vague and inadequate specifications invite poor reports.

Some writers feel that the manager's blue pencil is hanging over them. Over-editing is discouraging for writers, and makes them afraid that their careful judgements about content and tactics will be wasted. We often find writers discouraged about the finer skills of writing because they know their well thought-out choice of words will be butchered by hatchet-men higher up the hierarchy. It is suggested, that you discuss a synopsis with the person who commissioned the report, before drafting the full text. This will usually remove distrust and misunderstandings about aims. But when you, the writer, are in the Manager's chair yourself, be aware of the effects of over-editing on your staff.

Another reason why writing is often poor is that scientists and engineers tend, when writing, to take cover in a familiar and 'traditional' style. It is odd to think of the scientific community doing anything because it is traditional, rather than for good reasons, yet when it comes to writing, it is often tradition and not reason that prevails. A modern scientist, describing the atomic structure of matter, might write:

It is hypothesized by the present writer that in essence the initial format of material substances was relatively dense, massive in weight, durable, and particulate in form; the extreme manifestation of hardness being displayed by resistance to diminution in size due to abrasive processes and by counter fragmentation systems.

Science was not always reported like this. The passage is, in fact, a 'modernized' version of a

sentence from Isaac Newton. In the 17th century Newton wrote:

It seems probable to me, that God in the beginning formed matter in solid, massy, hard, impenetrable, moveable particles;...even so very hard, as never to wear or break in pieces.²

The 'tradition' of verbose writing is a modern one. It has been pilloried often enough, but many writers still turn to it. Newton did not feel the need to obfuscate his meaning with inflated style; the simple language of clear thinking was exciting enough without decoration. Too many modern scientists and engineers seem to need to wrap up their meanings. We presume they think it makes their writing more impressive; but every writer knows how depressingly easy to write—and how meaningless to read—such a verbose style is. Writing is often poor because of thoughtless use of a 'traditional' style.

A final reason for the poor quality of much scientific and technical documentation is that some writers do not want their style to be transparent, or their meaning easily understood.

A major psychological obstacle is fear of authority—of being fired, of not being promoted, of being disciplined, of displeasing a supervisor.³

When presenting the case for clear and simple expression to seminar groups on writing in industry, we are frequently surprised at the resistance. Outspoken members of the seminar often say that clear writing lets the manager see just where things went wrong, and what mistakes were made. Wrap it up in flowery language, and managers will not notice the defects of the work. This argument is a sad underestimate of the quality and intelligence of those who have been promoted, and is a sign of a depressing lack of professionalism.

Such an attitude is not confined to engineers and scientists. In many other spheres, language is used for protection rather than for communication. Complex slang which confuses the outsider is one example. Cockneys talking in rhyming slang use language to identify themselves in their group, and to confuse outsiders. Language can be a wall as well as a window, and scientists and engineers sometimes use it in this way. An industrial relations manager graphically expressed it:

Specialists like to hold information to them like a hot water bottle.⁴

Wrong attitudes, then, as much as poor skills are at the root of much of the indigestible writing from which we all suffer. Misunderstanding of the importance of communication, lack of confidence in the use of the language code, half-remembered and misdirected education, discouragement from managers, protectiveness in the face of probing readers—all these result in thoughtless adoption of a traditional, verbose and long-winded style. Traditional attitudes and tactics must be rethought because they are inefficient. They waste time and energy for the reader, and in the modern world the reader has less and less time and energy to waste. As Magnus Pyke wrote:

There is too much published and the pebbles of information are lost in the shingle...Printing was a long time coming; but now it has started, like the Sorcerer's Apprentice, there is no stopping it.⁵

V. Conclusion:

We can conclude this discussion of what communication is, and why it often goes wrong, with the answer that scientific and technical writing often fails because writers do not think enough about their real purposes, about whom they are writing for, and about the nature of the code they are using. Remember, first, that you are trying to communicate information, not just to make information available on paper. To do this effectively, you must re-think many assumptions about writing.

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