Technical Writing Tips – Avoiding Common Pitfalls[1]

Perhaps you will find it surprising but there is a lot of writing going on in this class. That is by design – most of engineering students do not like writing and are not good writers and therefore need practice. Your writing TA will attempt to provide useful feedback but you may need more help than you can get from her or me in this course. In such cases I would strongly encourage you to contact PSU's Writing Center http://www.writingcenter.pdx.edu/ and seek help. They also have some useful tools and resources, such as a Guided Tour, http://writingcenter.pdx.edu/resources/guide/index.php and video tutorials http://writingcenter.pdx.edu/resources/video/index.php . They also publish a book on "Ways of Writing" which should be available from PSU Bookstore.

To illustrate the importance of writing and communication skills, here are the results from a survey of Oregon high-tech companies:
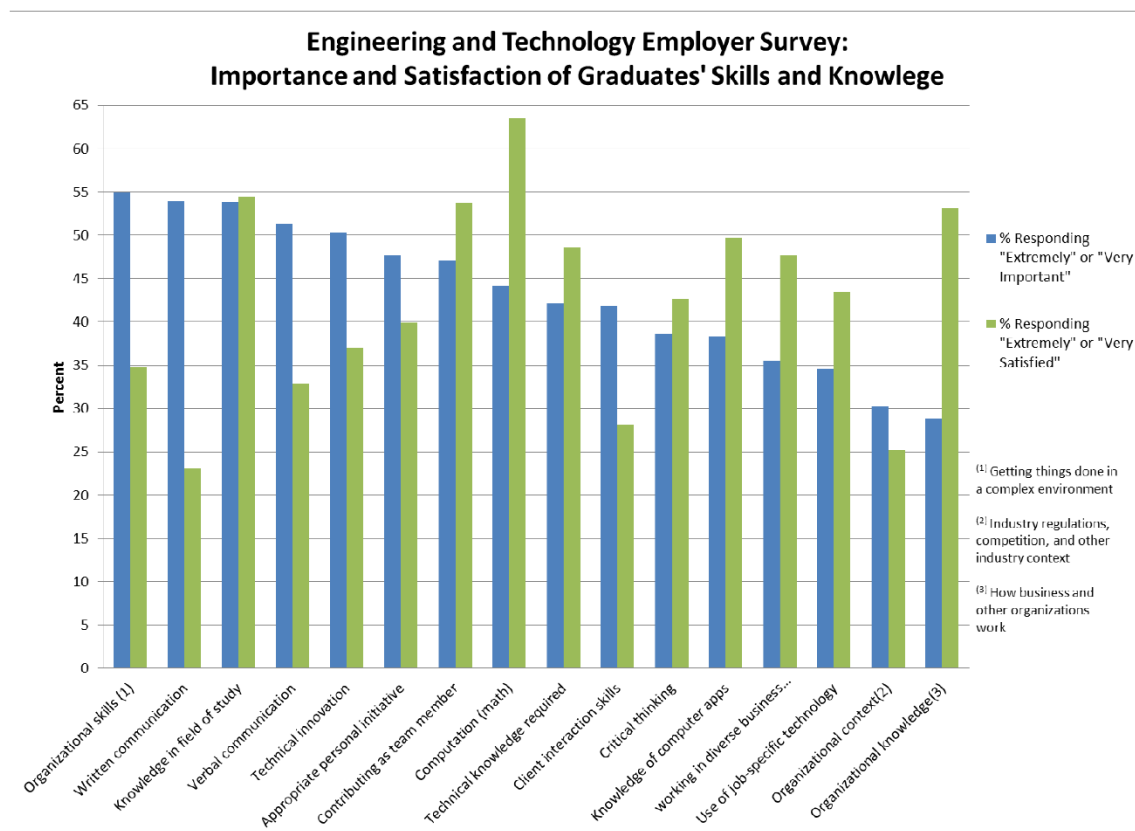

Figure 1. Oregon high-tech industry response to what is important for their employees and how satisfied are they with recent hires.

The second most important skill that employers are looking for is writing. It is also the one that they are least satisfied with. Conclusion: good writing and communication skills are essential for your future career advancement.

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[1] Mostly taken from prof. M. Holtzman's notes

- **Three C-s of technical writing**
  - **Technical writing needs to be <u>clear</u>, <u>concise</u> and <u>correct</u>**
  - **You can add "concrete" to this list …**

- Use your spell-checker – but don't depend on it

  "The amount of grammer and usage error's today is astounding. Not to mention spelling. If I was a teacher, I'd feel badly that less and less students seem to understand the basic principals of good writing. Neither the oldest high school students nor the youngest kindergartner know proper usage. A student often thinks they can depend on word processing programs to correct they're errors. Know way!"

- Don't be unnecessarily verbose, pretentious or creative

  "I utilized a multi-tined implement to process a starch resource."

  "It has been posited that a high degree of curiosity proved lethal to a feline."

  "Even with the most sophisticated experimental protocol, it is exceedingly unlikely that you can instill in a superannuated canine the capacity to perform novel feats of legerdemain."

  Isn't this a pretty font?

- Avoid: jargon, slang, clichés and redundant phrases

  "red in color"   "on a monthly basis"   "24/7" "reinvent the wheel"

  "at that point in time"   "glitches or bugs"   "but seriously"

  "very unusual"   "due to the reason that"   "down to brass tacks"

  http://suspense.net/whitefish/cliche.htm (lots of examples)

- Don't be vague

  "We measured performance parameters such as gain, bandwidth, etc."

  "We didn't do any further testing on this part for various reasons."

  "We measured A, B, C and D. This is important because … "

- Don't overuse the passive voice. In scientific writing, passive voice is often used to imply objectivity. However, passive writing can be longer, clumsier, less emphatic and less clear than active writing.

"Why was the road crossed by the chicken?"

"Seeking to improve the amplification, the input was adjusted to achieve maximum amplitude."

- ■ **Use gender-neutral language**   Instead of :

"If an engineer has an advanced degree, he will start at a higher salary," try:

> If an engineer has an advanced degree, he or she will start at a higher salary
>
> If an engineer has an advanced degree, they will start at a higher salary
>
> An engineer with an advanced degree will start at a higher salary
>
> Engineers with advanced degrees start at higher salaries

- ■ **Always cite sources!**

Put word-for-word quotes in quotation marks; longer quotations may be separated from the rest of the text and italicized, e.g.

> *"A common mistake that people make when trying to design something completely foolproof is to underestimate the ingenuity of complete fools." (source??)*

Provide a reference for paraphrased material

- ■ **Use a writing guide**

that or which ?   who or whom ?   it's or its ?   hyphens ?   semi-colons ?

Elements of Style by Strunk and White - the best $5.99 you'll ever spend!

Some good online sites:

> Common grammar FAQ
>
> > http://alt-usage-english.org/fast_faq.shtml
>
> Common Errors in English Usage
>
> > http://www.wsu.edu/~brians/errors/
>
> Writing Technical Articles
>
> > http://www.cs.columbia.edu/~hgs/etc/writing-style.html
>
> Tips for Writing Technical Papers
>
> > http://infolab.stanford.edu/~widom/paper-writing.html
>
> Guide to Grammar and Style
>
> > http://andromeda.rutgers.edu/~jlynch/Writing/index.html

Example: how many errors in this paragraph?

Once preleminary working criteria has been established it is important to develop an overall goal for the "design process". Basically this should be a statement of objectives which can be evaluated as the design process evolve. Establishing such a goal for the project provides a means of evaluating. monitoring, and changing, if necesary, the focus of the process as it evolves through the various stages of design.

There's an app for that: (http://www.editorsoftware.com/)
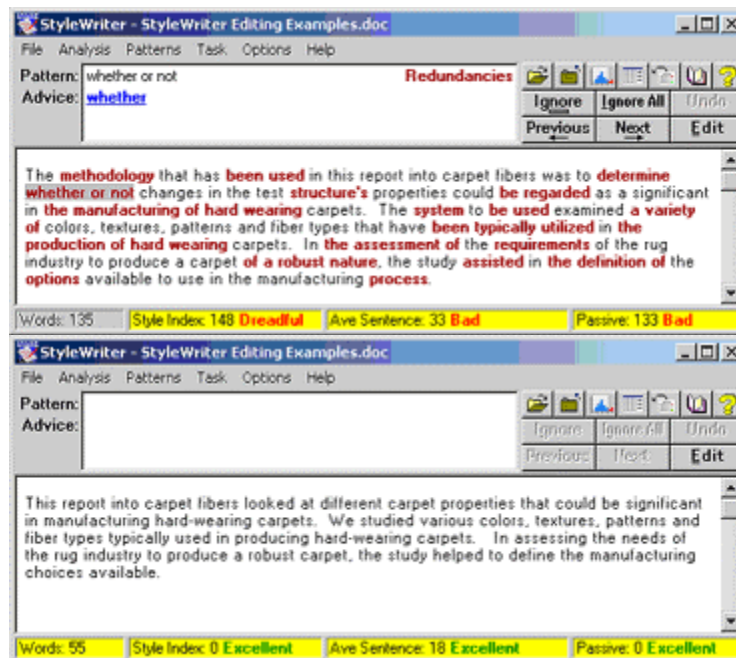

Figure 2. Using software to correct style and other errors.

One more example of really bad writing (from Yahoo! Answers)

'A sentence, be it long, medium, or short, -- or even really, really short -- that noticeably uses or employs significantly and excessively way, way many more words, or phrases, or clauses, and/or adjectives, etc. than are necessarily requisite to get the point of the aforementioned sentence -- that is to say the crux, the focus, the meaning of the aforementioned sentence -- across clearly, plainly, and/or distinctly, is a discursive, long-winded, and, dare I say, "VERBOSE SENTENCE".'

Group discussion

What do you find most challenging about writing: what to say, spelling, grammar rules, English vocabulary, references, structure, other? What can you do about it?