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Abstract: The article discusses the need for writing skills in science and technology professions for college majors in science, technology, engineering, and mathematics (STEM) fields. Topics include the relation between writing and computer coding, the role of written communication as a job skill, and the role of imaginative empathy in STEM fields. Reader comments are included.

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The Importance of Writing in Tech Fields

CAREERS

BACK WHEN I was a grad student in anthropology at the University of California at Berkeley, I taught a writing course. Its theme was medicine, so a lot of pre-med majors signed up. Since it was an intensive summer course, writing assignments were due at the end of each week. Perhaps unsurprisingly, students complained about that, sometimes vociferously.

"We're all science majors," one student said, "so we don't really need to know how to write."

As an assistant professor at a university famed for its engineering programs, I often encounter that same sort of resistance to writing assignments. Most of my students are engineering and science majors taking my course as their humanities requirement. In effect, they are biding their time, just trying to get a decent grade in what they often see as a "nonessential" course.

But why? How is it that students interested in careers in technology don't understand that skill in writing is a crucial part of their future success? I've noticed that this aversion sometimes extends well past the undergraduate years and into the master's and Ph.D. levels.

In an effort to emphasize the importance of effective writing skills, I interviewed three professionals at the top of their tech games. I asked them via email to reflect on their own writing, on the importance of writing well, and on the role of effective

communication skills in their fields.

All three of them agree: Writing skills not only matter in a tech career, they matter a lot. They are important both in routine, day-to-day tasks at a tech company and in terms of the big picture -- like the ability to sell an idea in order to get funding.

Emily Greer, co-founder and chief executive of Kongregate, a popular gaming company, argues that writing skills are crucial. Not only do tech projects require a lot of collaboration among people in different locations -- which itself requires communication skills -- but big projects also require clear writing. As she puts it: "Taking a big project and breaking it down into chunks for different parties to work on takes clear vision and documentation. It's quite similar to a good outline for a paper."

But writing skills in tech go a lot farther than that. Effective writing goes hand-in-hand with effective coding. "A well-written bug report saves everyone hours of time," Greer explains, referring to a report that details all the bugs in a software program. "Clear annotations on code help new people jump in on large projects -- and help the original engineers to remember why they made certain choices long after the fact."

Shay David, co-founder and chief revenue officer of Kaltura, a leading video-platform provider, says the ability to write well in a tech company takes a variety of forms: "Sometimes the output will be more of a laundry list. Sometimes it's a PowerPoint, or even a tweet, or a mood message on a shared message board. But the core of writing, regardless of medium, remains the same: the ability to communicate an idea, with force and clarity and with a voice that over time people recognize as yours."

Writing is thinking, after all, so it should come as no surprise to STEM majors looking to make it big in technology careers that they need to take their writing a lot more seriously. Learning to write well -- clearly, effectively, quickly -- should be an important component of every undergraduate education. STEM students should take more classes focused on thinking through writing, not less.

Lest graduate students and junior faculty members in STEM think otherwise, the same advice applies to them.

Samantha Kleinberg, my colleague at the Stevens Institute of Technology, is an assistant professor of computer science who is a prolific writer. Reflecting on the importance of writing for academics in STEM fields, she has this to say (and it's good enough to quote in full):

"Computer scientists tend not to focus on writing, but I'd argue that writing is our main output. That includes not just research papers, but source code, and documentation for software and data. If you write a program that you want people to use, they need to be able to understand your comments in the code and the instructions on how to run it. While it turned out to be a nice surprise since I like to write, I had absolutely no idea how much writing was required in science when I was an undergrad, and I do think students could be better prepared for it."

Students in STEM fields are generally less prepared to write than their social-science and humanities counterparts. And that's a big drawback for employers. No matter how brilliant you are or how well you can code, if you can't communicate your ideas, you're not a good hire. "I tell my students that it doesn't matter if they have the most brilliant idea ever if they can't express it well," Kleinberg says.

"I always like candidates who have a combo background of STEM and humanities," Greer says. "Extensive reading (fiction or nonfiction) helps build the type of imaginative empathy that allows you to see things from different points of view, to understand how someone else might react to things. And that helps in everything from navigating political waters to product design."

The next time students complain to me about the amount of writing they're doing in my courses, I'll direct them to this column. Writing well is for everyone. Engineers included.

Comment from Raymond Ritchie: In the sciences, essentially all science is now published in English, but it is important to realize that at least 80 percent of your readers are using English as a second language. You need to be able to write simple,

clear English.

Comment from Susan Ramlo: Many of my STEM students aren't thinking of graduate degrees or publications. They are thinking of going into business and industry. But the truth is they have no idea what that really means or what scientists, engineers, and technologists do in "the real world." Well, we spend a lot of time writing. Not writing for publication, but writing reports to share with colleagues and bosses, who might include both the head of R&D and the head of marketing. If you cannot communicate with a diverse set of people, there is no point in having good ideas, because you will have no way to share them with others.

Comment from Philip M. Kober: Communication is an essential skill in almost any field, and students should not be bellyaching when they take writing courses -- they should relish it!

Comment from Angel Jason: "The Importance of Writing Skills in Tech-Related Fields" Hey admin! I completely inspired with your article plus I like to say thank you because You have done a best work by sharing it. Help With Assignment I am very excited to write an article on this topic I shared because I my problem reduced due to your article.

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By THERESA MACPHAIL

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