

Helping Graduate Students Become Successful Writers: A Graduate Writing Center Deploys both Disciplinary Writing Consultants and Generalists to Best Meet Disciplinary Writing Needs

D4. PANEL • ROOM 4 (LEAGUE 1ST FLOOR)

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Way back when I had a real job as a practicing engineer, my primary function was to build HMIs—human-machine interfaces—for industrial plants. These interfaces allowed the operators to control the machinery within the plant through touch screen computers, mounted wherever. To do my job successfully, I needed to design these things well, or if not well, then correctly. Most of these operators had, at best, a high school education. So while they were very proficient at their work, they also required a high degree of consistency and intuitiveness within every interface that they used because for every action that they wanted to perform on these interfaces, whether it was to turn a cooling fan on or off or to lockout the machine so that a maintenance crew could do a repair, if the requisite reaction did not occur, we could end up with tens to hundreds of thousands of dollars' worth of damage or loss of life. So the idea of audience was really central to all of my projects, and while I was working on the components of the project that would be closest to the operators, the idea of audience was never lost at any point on any of the engineers on the project, because the project itself was born from needs the customer. They supplied us with the design requirements and we filled them. But not one of us would think of or use the word “audience” over the much more concrete word “customer.”

Then when I became a graduate student, my audience became my peers, an audience I was now simultaneously a part of—and I must say, an uninformed member of that audience. As I started hanging around these folks at the writing center, my lack of awareness really started to make sense. Because what I discovered is that I had a distinct lack of knowledge about the design requirements of my new job—being a graduate student. The entire concept of writing a research story rather than a research report were alien to me; though I might have been making good rhetorical moves (or bad ones) it was

entirely unconscious. I had absolutely no context in which I could apply these ideas and yet I as a grad student I am expected to create knowledge and then to share it, and while I have so many classes and resources available for creating knowledge, the resources available for the sharing part are lacking to say the least.

So as a fledgling grad student I did the next logical thing, which was to look at the literature. It had already been published, therefore whatever these contents were, they must've met muster, so what I saw I emulated. But that was one of the traps I fell into as a graduate student, because at least in my field, it turns out very few others have figured out what writing well and correctly meant, either. Instead what I find is a modern or even sometimes hypermodern way of writing that emphasizes data over conclusions. Data over arguments. Data over speculations. One paper I read examined how several types of antennas caused heating in the head, simulating a cell phone. After reading this paper, I can tell you exactly what the material properties were for the simulated antennas, how long any given wire was in a circuit or how the antennas were oriented to the head. I can tell you which antenna caused the most tissue heating and how much power the antenna consumed to do it. What I can't tell you is much of anything about what the author thought about the results or how they affect the field or discipline.

The funny thing for me is that after I had begun consulting, I later went through this paper and annotated it from top to bottom as part of an effort within our center to document what is and isn't working in different disciplines as guides for students and future consultants. And these notes caused me a fair bit of consternation because obviously as a training tool I wanted to be clear and consistent and form a coherent critique of the paper but I had hard time nailing down exactly how to say what it was about the paper that I thought the author did poorly. There were really obvious things, like metadiscourse littered throughout various sections or the introduction completely neglecting the significance and merit of the issue. But the paper presented its data very well with all the information I could want about how the antennas caused tissue heating and given that this was something I've seen time and again in the literature I had difficulty deciding on whether or not to say the paper was written badly. The funny part was that two days after I finished writing up my notes, my colleague Phil who is

absent today gave me a book called “Writing Like an Engineer” by Dorothy Winsor. I didn’t get very far into it but within the first seven pages that I read that day I picked up very quickly on one of Dorothy’s premises, which is that engineers like to have data speak for itself. This book, being published in 1996, saw and labeled exactly the phenomenon that I had just struggled with.

And while this pursuit of objectivity leads many engineers astray, and we can see the evidence in the literature, this anecdote also highlights what I as a consultant can provide to a writer. Prior to working at the writing center, in my old role as a peer reviewer, my focus was on looking for that wellness and correctness in a paper, but as a consultant I’ve learned that these two ideas are really functions of understanding. Can my reader understand my writing? This very simple concept is one I’ve learned from our generalists and I’ve stolen many others: writing is a skill, writing is a recursive process, writing is a social activity. Furthermore, just as Dorothy Winsor gave me a name for the criticism I wanted to make on that paper, that simple act of labeling and naming concepts can be of great assistance; where once my clients may have thought of an introduction as a “start, a middle and an end” they are now able to recognize that it needs a setup, a funnel and a challenge and what their readers’ expectations are for each.

My background as an engineer also gives me the opportunity to advise clients about the technical details of the writing, essentially extending my consulting role past writing to the technical content as well. I do have to say I don’t like to think of it this way because there’s a certain amount of weight that the idea of “peer review” carries from the ideas of “wellness” and “correctness” and I’d rather frame the issue under the tenet that clear writing evolves from clear thinking—we can’t explain what we can’t understand. The second anecdote I would like to torture you with is one of an international student who I met with over the course of a whole semester, who is trying to identify disease in soybean plants using digital images. Essentially they reduce a photo of a soybean plant to a green-scale—like black and white except green and not-green—then measures how green the photo is, all in MATLAB (which is a very glorified calculator with a built-in programming language). In our first session I learned that the disease causes yellowing and that he was using an extremely convoluted method of translating the photos to

this green-scale, and this method was causing some degradation of the processed data. I didn't understand this method, so I asked them to explain it and then in order to suss out the merit of this method, I asked why they hadn't used a simple built-in function that MATLAB has for analyzing images. Turns out they had no idea the function existed—they simply had access to this tool, MATLAB, and one of their lab mates suggested using it. Whereas for me this was a little algorithm I learned to use during my undergraduate signals and systems class.

The moral of this story is that any sophomore or junior level electrical engineering student could have helped my client solve the problem. But when I look at graduate writing through the lens that Enrico-as-Matt described, where the knowledgeable, the advisors, the mentors, lack self-recognition of that tacitly acquired disciplinary knowledge and where these self-same individuals present research as a test, it becomes much more plausible that these “solution-producing interactions” occur with a disciplinary writing consultant. And the big advantage of my role as a disciplinary consultant is that given this same story, with the exception that my client meets a generalist consultant, they never get to leave our center with a solution to their technical problem. And no amount of writing is going to fix a flawed methodology.

The flipside to this is that I am not a plant operator. To return that ever-present issue of audience, my services require a continuous re-evaluation of my assumptions—while my understanding of the engineering writer's content allows me to bring the large palette of tools I've acquired as a consultant to bear, my technical knowledge can interfere with my perspective on the writing because I am a close peer, whereas academic writing must necessarily be able to communicate across the disciplines.

Fortunately, I am able to lean on my generalist colleagues not only as a personal resource to engage in that re-evaluation process but also as a resource for my clients, who can always use a non-discipline audience member. And not only that, but we've also seen some clients who have learned to transition between consultants to take advantage of those different perspectives—in one session, they solicit the advice of the disciplinary consultant to ensure the scholarly elements are correct but in the next they will use a generalist to ensure the writing is understandable by a non-disciplinary reader.