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Computer Science & The Writing Center

On the day of my very first Writing Center appointment this fall, I logged into the Writing Center website to see that someone had signed up for an asynchronous appointment. Excited, I opened the appointment slot to see who had signed up. The first thing I noticed was that this individual was a senior Computer Science major, and as I scrolled down, I read what they were hoping to work on in their appointment: a senior Computer Science Project Proposal. I actually laughed out loud to myself, and thought "How could anyone possibly think that I, a Creative Writing major, could help them with a Computer Science Senior Project?" After giving myself a few minutes to stress, I opened the prompt and the paper that the student had attached. I reminded myself of the Writing Center's philosophy: if you write, you belong here. This student had made an appointment with me to work on their writing, so it was my job to do the best that I could with little knowledge on Computer Science.

I read through the prompt and the project and found that I actually did have writing advice and suggestions for this student. There were a few grammatical errors, some moments of confusion for me as a reader, and some areas where what the prompt asked for was not addressed specifically enough. After spending an hour reading through this student's work, I realized that even though I had no knowledge of Computer Science, I could still offer them help as a Writing Associate. Thinking back, I would have found it helpful if there were some sort of guide or brochure on Computer Science Project Proposals that I could have referred to during my session.

This experience led me to what I decided my final research project would be about: How can the Writing Center be beneficial to Computer Science students? Do these students even use the Writing Center, and do their professors encourage it? And lastly, are there certain assignments that all Computer Science majors have to complete?

Writing in Trinity's Computer Science Program:

To begin my research project, I first looked into our own Writing Center's data to see if Computer Science majors even used the Writing Center, and if so, how often? These statistics come from the scheduling and data collection service that the Trinity College Writing Center uses, which is called WC Online. According to the Writing Center website, so far this semester (September through October 2020) there have been only three appointments with Computer Science majors. To put this in perspective, there have been 104 appointments with undecided majors, which was the highest category. Next, I looked at a span of 5 years (October 2015 to October 2020) and found that there had been about 151 appointments made with Computer Science majors, in comparison to around 2,000 undeclared/ undecided majors. I also looked at last year's fall (2019) and spring semester (2020) to see if there was any difference based on the time of year, but 8 appointments were made in fall 2019 and 8 in spring 2020 as well. What I understood from these numbers was that we do see CS majors in the Writing Center, just not very often. I wondered if this was because they did not see the Writing Center as a place where they could come for guidance on their assignments, if professors recommended it, or because Computer Science majors simply do not write often. It is important that writing centers are not just about learning to write, but that we also challenge students who come to our center to

become better students and writers overall. If we can serve this population of students, it will in turn benefit our center and campus overall.

After looking through this data, I reached out to Computer Science professors to see what their opinions of the Writing Center were, and to see whether or not they thought a project on this would be helpful for the students and faculty. Professor Spezialetti thought that "the Writing Center is terrific and I routinely recommend it to students." She also stated that she is "zealous in terms of stressing the importance of communication skills to [her] majors and reinforcing the notion that those skills are a major way in which they can distinguish themselves in the professional realm." Spezialetti informed me that the only class that traditionally uses any sort of writing is the Senior Seminar, which was the class that my tutee had come to me for. I also exchanged emails with Professor Syta, who said "In most of my classes, I do not send students to the Writing Center. However, I am teaching a first year seminar on cryptology this semester and I required all of my FYSM students to have an appointment with the WC. I also think that our students could use some help in their Senior Seminar where they are required to put together a Senior Project Proposal." She then informed me that she would most likely be leading the Senior Seminar next year, and therefore thought working with the Writing Center could be very helpful for her students. What I understood after speaking with these professors was that the Writing Center is not something in the front of their minds, as for the majority of the major requirements, no writing is involved. However, Spezialetti brought up an interesting point that I think our Writing Center strives to advertise: everybody writes, and at some point, everybody *needs* to write in some way or another. Both of these professors had positive thoughts and reactions about the Writing Center, and felt that if their students could use it as a tool, they should do so.

Next, I reached out to a student in the Computer Science major to see how students view the Writing Center. Emily Capprini, a junior Computer Science major, explained to me that she had never actually been to the Writing Center, and that none of her classes had ever required her to go. She told me that the only time one of her professors had recommended the Writing Center to her was during her Freshman Year Seminar. As a first-year mentor herself, Emily encouraged her Freshman Seminar to make appointments at the Writing Center, because although she had never been, she had always heard positive things about it. She did, however, say that she would consider going to the Writing Center during her senior year for her senior project, as she had gotten used to not writing for the majority of her required major classes. I was not surprised by these answers after viewing our Writing Center's Computer Science data; these students do not see that the Writing Center is a place that would be beneficial for them because of the lack of writing in their curriculum. How though, can these students spend years without writing, and then be tasked with the writing in their Senior Seminar?

One way to look at this research project may be to argue that Computer Science majors actually do not need the Writing Center, since for the majority of their time at Trinity, they are not writing. However, in the article, "Writing in the Computer Science Curriculum" the author describes the importance of what Professor Spezialetti was concerned with: all students need writing skills, whether this is during their time at Trinity, or in the professional realm. The article was first written by William Taffe, a Computer Science professor who saw importance in writing skills for all majors. The original article was written in 1989, and Taffe reacted to it again eight years later. Taffe explains that, "Our Computer Science students need strengthened communication skills, not only for personal enrichment, but also for professional activity" (Taffe 155). This is what Professor Spezialetti wanted for her students as well; writing is a real-world

skill that cannot be avoided, and therefore should be important in every undergraduate curriculum. Taffe also said that, “A student's lack of facility with the technical language *can* be mistaken by the instructor for an inability to organize thought; likewise, disorganized thinking may be passed off as merely a lack of writing skill” (Taffe 155). In my conversation with Emily, she expressed concern for her confidence in her own writing skills. She described to me that besides the writing requirements at Trinity, none of her classes really have any writing assignments, so by the time senior year comes around, writing a final project seems very daunting. Taffe looked back on the article he wrote eight years later, and again agreed with himself that, “as computer professionals [students] will have to write proposals, reports, documentation and other forms of tangible instantiations of their ideas, and they begin to put some effort into writing clearly and expressively” (Taffe 161). So, even though writing and Computer Science may not seem related, they always will be in professional settings. This is what the Senior Seminar at Trinity seems to prepare students for with the Senior Project Proposal.

Since this seemed like a project that every Computer Science major would have to complete, I decided to focus my project on how Writing Associates can understand project proposals, and how they can be of service to these Computer Science seniors. What helped me during my appointment was comparing every part of a project proposal to aspects of an academic paper. For example, I thought of how the project statement, which is where students are expected to state the problem they are trying to solve in one concise sentence, is similar to a thesis, where students summarize their arguments in one or two sentences. So, following this paper, I have broken down the expectations of a project proposal in a table, compared to parts of a typical

academic paper. I acquired the rubric for the project proposal from CS students in the Senior Seminar currently.

Professor Syta has taught this seminar in the past, and provided me with information on other required writing assignments Computer Science majors may face, such as a final report, which is 5-6 pages describing the student's overall project. For this assignment, she informed me that there is stress put on the formality of the writing, and the rubric warns students to research the difference between formal and informal writing styles. It also stressed the importance of the assignment being visually appealing and easy to follow. Syta's version of this class also required a revised version of the original project proposal, which would involve interpreting the professor's feedback. A few years ago when Syta taught this course, she actually required her seniors to go to the Writing Center for these assignments, similar to how she is currently requiring her freshman to do so. All of these aspects of the assignments in the Computer Science Senior Seminar are what the Writing Center is equipped to help with. Even though these assignments are not typical papers, Writing Associates are more than qualified to advise on aspects such as formal tones, visual styles, and interpreting feedback.

Adapting Writing Center Practices:

After taking all of this information in, it is clear that as a Writing Center, we may need to look at our current practices to see how they could be improved to include this population of students. This reminded me of the reading we had earlier this year, "New Media Matters" and the importance of multiliteracy centers. Though outdated, this article discusses the idea that writing centers can be open to new media, which the author defines through, "1) their digital-ness; 2) their conscious materiality or form; 3) their multimodality; and/or 4) their rhetorical means"

(McKinney 31). The author discusses how in colleges, “the norm” used to be “typed, double-spaced, thesis-driven texts on 8-by-11-inch, stapled, white paper” (McKinney 31). They then argue that, “we should train tutors to work with new media… practically speaking, this would mean that tutors would also be trained to work with texts that are not traditional, paper, alphabetic, text-only, academic print essays or assignments” (McKinney 31). I agree with the author’s argument here; writing centers should be accessible for all students, and associates can be helpful with the knowledge they already have on assignments other than typical academic papers. The author later states that, “I think all tutors should be trained to work with these texts and that these texts have unique features, which means some of our traditional tutoring practices will not work” which I do not completely agree with (McKinney 32). The purpose of my project is to show Writing Associates that we already have the tools and skills to help students with new media projects, even when it seems like we have little knowledge. Most assignments in college have an argument that students need help communicating to their audience. If we keep this in mind as a baseline, tutoring on new media is not as challenging as it seems. One piece of advice I found useful was, “instead of asking tutors to read aloud, we can ask tutors to talk aloud as they negotiate a text—a subtle yet important change” (McKinney 39). When students talk through their argument, and what they want to get across in their assignments, it is easier for both tutor and tutee to have a successful session, as they then know what the goals are.

As an English major, it has always been drilled into my head that revision is one of the most important parts of the writing process. I have always been encouraged to have others read my work, ask for feedback, and really focus on the process of writing a paper rather than the product at the end. Pieter Toth, an educator, defines the difference between process and product pedagogy simply. A process is “a series of steps designed to lead to a particular outcome or goal.

It is exploration, a journey, it is fluid, dynamic." On the other hand, "A product is the outcome or goal of a process. It is static, solid, fixed in a single moment, a snapshot, usually an artifact created through that process" (Toth). In my personal experience with my appointment, it seemed like the student I was working with was given an example of a project and a rubric, and all that the professor expected was a final product. There did not seem to be any emphasis on the process of writing. However, in Syta's class a few years ago, she had a project proposal assigned, as well as a revised project proposal, which focuses more on the process than the product, since the student is able to look at feedback and improve their work. One aspect of the process that is apparent in the project proposal rubric is the section for the student to evaluate their personal timeline, so that they know when they will be expected to complete each part of the project. Something that I think should be stressed during these Computer Science Senior Seminars is that there is so much value in talking through your work with someone else, or even having them glance over it. Someone else looking at your work always makes you realize or think about something that you hadn't thought of before. In the future, it may be important that the Writing Center and Computer Science Department have a greater dialogue with one another so that the department and students are aware of how the Writing Center can be of use to their majors. Also, Trinity's Writing Emphasis II requirement is fulfilled by the Computer Science Seminar for these students. This makes it even more relevant that their students should utilize the Writing Center so that this requirement is properly fulfilled, and that they leave this class confident with writing for their field.

If someone were to continue this project in the future, receiving more input from Computer Science professors would be very helpful. I personally struggled with hearing back from professors, though all of the information they provided me with was extremely helpful. I

think it would be interesting if a Writing Associate were to meet with the head of the Computer Science department to hear what they think about writing and Computer Science, and how the Writing Center could be more involved with this major. This project has also led me to wonder whether or not our Writing Center should offer any major specific tutors, or list tutors majors when students are booking their Writing Center appointments. I personally believe that all Writing Associates will have successful appointments with all students regardless of their majors, but it would be interesting to see how students, especially Computer Science students, feel about going to a tutor with background knowledge on their subject matter. What I have gathered from talking to students and faculty in the Computer Science program is that the Writing Center may not seem helpful for their program, as most students do not have many writing assignments, but that if we are prepared, we can be very helpful to the department, and all students overall.

Computer Science Project Proposal Versus Typical Academic Paper:

Below is the rubric for the current Computer Science Project Proposal in comparison to the typical academic papers that writing associates may encounter. It is my hope that these comparisons will be helpful for Writing Associates to look at if they have appointments with this assignment, like I did earlier this year. The rubric was provided to me by Computer Science seniors and professors.

Computer Science Project Proposal	Typical Academic Paper
Title - Capture the key concepts of the proposal - Clear & concise - Reflect the focus of the project - Put the most important words first - Finalize the title after finishing your proposal	Title - Clear & concise - Should reflect the key argument of your essay - Sometimes helpful to come back to the title after finishing the paper - Interesting enough to grab your reader's attention

Project Statement
- State the problem you are trying to solve in one concise sentence
  - "The purpose of this project is…"
  - "... For this reason, I intend to develop…"
	Thesis
	- State the argument you are trying to prove about your topic in one or two sentences
	  - "This theme can be shown through…"
	  - "I believe that…"

Background
- Briefly explain the domain and connect of the proposed project
- Show how your project
  - Supports your hypothesis
  - Extends previous work
  - Avoids previous mistakes
  - Is unique to previous approaches
	Background
	- What context is needed so that the reader can understand your argument?
	- Brief summary of the plot of a novel?
	- Brief summary of the history of an issue you will be discussing?
	- Definitions of concepts and words you will be referring to?

Project Goals & Objectives - Goals: short but general statement of intent	Supporting Paragraphs - What do you need to say so that the goal of arguing your thesis is

- Objectives: very specific statements that define the practical steps you will take to achieve your goals	accomplished? - What specific evidence will be used to support your thesis/ argument?

Significance
- Explain the importance and relevance of your project
  - Why now?
  - Who would use it?
  - Who would be benefited?
	Significance
	- Why should the reader care about your argument?
	- Who is your audience?
	- "So what?"

Methods & Procedures
- Describe steps you are planning to take to make your ideas come to fruition.
- Section used to judge the validity of results and conclusions
- This section of your proposal may have multiple elements
  - Specific algorithms used
  - Technologies and tools
  - Access to data samples
  - Data analysis
- Justify your method choice
- Show you understand the principles
- Prove feasibility of your project
	How will you prove your thesis?
	- Through evidence such as quotes from sources?
	- Through personal experiences and opinions?
	- Include relevant details to your topic
	- This element is slightly harder to compare because methods & procedures are aspects of scientific writing, but overall they can be seen as a check on your argument, which will have multiple elements and methods in terms of an academic paper

Expected Outcomes - Explain what you would like to see to declare success at the end of the year. - A software system - New technology - Real-world applications	Conclusion - What "bigger picture" or "zoom out" moment does your paper lead you to? - Are there any real-world applications for your ideas?
Timeline - Include a detailed timeline for your project throughout the year.	Introduction - What should the reader expect from this paper? - Do they know what they will be reading about after the introduction, and in what order?
Special Considerations - Include anything likely required by your project: - Books	Sources - Where are your sources from? - Do you need to explain the background of where you found your

- Special equipment - Software tools - Tutorials or courses - May include project budget if applicable	sources? - Do you need to reference why the evidence you are providing is useful for your argument?
References - Attach a bibliography relevant to your proposed project. - It should reflect the current state of technology on the proposed topic. - Use Chicago style citations (see under Resources on the course website)	References - Bibliography of sources used - What kind of citations does your professor prefer? MLA? Chicago?

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