Daniel J. Jinguji,
Statement of Purpose
PhD Application, Computer Science,
Washington State University

"Why is this not clicking for you? I can tell you're intelligent and really working hard … Where's the disconnect?" Duane (a pseudonym) was a student in my Computer Programming II class at North Seattle College. Like many students, he was drawn to computer science as a lucrative, but competitive, field. He is part of the cadre of interested and engaged students whom I've had in my classes. For some of them, things seem to click into place relatively readily; for others, not so easily.

I have spent most of my professional career working as a computer science educator, first in industry at Boeing and Microsoft, and the past fourteen years in academia at North Seattle College. I see myself continuing to work in this field. Duane's story is not unique. Not infrequently, I hear similar stories from other CS faculty. I want to find ways to foster greater student success in computer science and software engineering. I have looked into research in Educational Psychology. However, there seems to be relatively little interest in the post-secondary level in many colleges of education. So, I was encouraged to learn of the work of Dr. Christopher Hundhausen at WSU: his research in applying social learning theory within undergraduate computer science education and his instrumented approach to monitoring student interaction. It seems like a very good fit. In fact, we've been in contact, by both email and phone.

As a state employee, I have used the tuition exemption to study areas of great personal interest, most notably applied linguistics. In fact, I see a synergy between second language acquisition (SLA) and my research interests. There is a shared focus in the development of communicative competence: being able to use the expressive power of the language at hand, understanding and incorporating common idiomatic usage, and entering into a community of practice. At a fundamental level, effective software engineering is more than just getting the computer to jump through the appropriate hoops; it involves communicating with the rest of the programming team, both past and future. (I pick software engineering here because I believe that's the target for most undergraduate students.)

There are techniques from SLA which could be applied in this area of research. For example, I propose using qualitative research methods to examine the flipped-classroom model in light of the Vygotsky's social development theory and then comparing this instructional model with classic lecture-format instruction. If the lecture-based instruction includes in-class pair work, the same ethnographic research methods could be applied to those interactions. This analysis could be used to assess the quality of the students' interaction and its relationship to their performance. I believe we will see that appropriately structured scaffolding in the flipped classroom format fosters more uniform attainment of higher levels in Bloom's taxonomy, moving from remembering and understanding to application and analysis, even toward evaluation.

In this light, the PhD program in computer science at WSU seems to be a natural next step in my personal and professional development. I am excited by the possibilities that it offers, and I believe I can contribute to the learning experience of the other students in the program, as well grow personally and professionally through my participation in this program.

Thank you for the attention to this application. Please do not hesitate to contact me if I can provide any additional information that may help you in coming to a decision.

Respectfully yours,
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