STATEMENT OF PURPOSE: TEACHING

TRISTAN HOLMES

During my career I have worked for two years with the NSF funded classroom outreach project SUPER-M, served as a graduate teaching assistant at UH Manoa, and as a lecturer at both the community college and university levels. These experiences have led me to develop an approach to teaching mathematics is very successful. I have received positive reviews from all faculty supervisors and colleagues I have worked with, and my open ended student reviews have been positive as well. Not a semester goes by that former students do not reach out to me and tell me that they felt my course was a fulfilling experience for them.

I have had the opportunity to teach highly diverse students during my career. Teaching in Hawaii is unique, as the student population reflects the state's nature as the mixed salad of the Pacific. For many students I have taught, English is not their first language. I have always taken pains to direct my students to to the proper resources they need, and search for the best way to communicate the material to them. There is no reason students from any particular background should struggle to learn mathematics, but it takes a commitment from instructors and campus communities to allow a diverse student body to succeed academically. I have committed myself to this goal my entire career and will continue to do so.

No matter what course I teach, I always do so with the philosophy that mathematics is a language and should be taught as such. Too often it is easy for students to become trapped into thinking of mathematics as a very specific set of algorithms that can only be applied to problems whose solutions they have already seen demonstrated. Students with this mindset inevitably struggle when a problem they are fully equipped to deal with is presented with even minor variations from those they have seen as examples. This is the equivalent of trying to teach a language to non-native speakers by having them memorize a series of phrases to use in given situations with no regard to syntax, word meaning, or grammar.

My first year as a TA the literature we were given included the following advice: "If you have properly established your authority, the students will perceive one of two scenarios, teacher and material versus student or teacher and student versus material." It is a delicate balance to challenge students to take the time and effort to come to an understanding of how and why a given solution to a problem is valid, without succumbing to frustration during the inevitable struggles in this process. I find the best way is to ask guiding questions rather than giving students an answer. This gives students more agency in their learning, and allows them the rewards of discovery for their efforts. Moreover, it prepares them for when they will not have access to a mentor and will need to find guiding questions for themselves that will allow them to find solutions to problems in mathematics, or any field of study.

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