

RANTHONY A.C. EDMONDS

Diversity Statement

I believe that the foundation of any approach to diversity should be rooted in intersectionality. Rather than subscribing to the rigid classifications that dominate how we contextualize students, black or white, male or female, rich or poor, etc, it is more important to focus on how the intersection of multiple identities, and the privileges and marginalizations associated with each, play a vital role in any student's experience in academia before they ever set a foot inside our classrooms. We must create learning environments influenced by such considerations so that all students have the opportunity to thrive. As a mathematician, I do this by focusing on two things: accessibility and exposure.

I am intentional in involving myself in opportunities that afford me the chance to expose students to mathematics whose experiences mirror my own. To this end, I have worked as an instructor of math and science for two summers for the Academy of Scholastic and Personal Success, a nonprofit college preparatory program for students of color in Cedar Rapids, Iowa, many of whom were first generation African Americans. Before this, I was involved with the Federal TRIO program Upward Bound, which was comprised of low income and first generation college students from central and rural Kentucky. There I tutored math to help improve retention and college readiness. I also did ACT Math Sessions for the YMCA Black Achievers and Black Males Working (BMW) programs in Lexington, KY.

I have also been involved with the Department of Mathematics' Sonia Kovalevsky Day for High School Girls in varying capacities over the years at the University of Iowa and the University of Kentucky, most recently serving as a Co-Organizer for the entire event. In this role I came up with the theme Math Girls R.O.C.K. with a focus on Research, Opportunities, and Careers in mathematics, along with how a basic Knowledge of mathematics can help you in everyday life. We collaborated with undergraduates, graduate students, faculty, and industry professionals for an event that included math talks, poster sessions, and a career panel. We were intentional in inviting all female presenters that would expose to the participants to the wide variety of experiences women from different backgrounds had in pursuing their goals.

Participating in such outreach begs the question: if and when these students pursue mathematics in higher education, to what extent will their instructional environments give them access to succeed? My approach to ensuring equitable, and not just equal treatment, is a pedagogy rooted in Universal Design for Learning (UDL). UDL is a framework that emphasizes accessibility in the design of course materials so that redesign is not an issue for students with special needs. This in turn benefits all students. Through this framework, I create course materials that facilitate learning through different modalities. Central to this is my use of technology to complement in class instruction and to make course materials and resources readily available to students.

I have had success with the use of instructional videos. I implemented these as both the instructor of Basic Algebra in the Fall of 2016 and more extensively in the Spring of 2017 where I used them to partially flip my trigonometry course. In this course, my goal

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for the videos was to increase self-regulation in the students by having them teach themselves new concepts. The flipped instructional period incorporated a lot of group worksheets and team based activities to further reiterate the content in the videos. I was able to work one on one with students on material that challenged them most. These activities and their solutions were all made available online after class. The class notes from the traditional instructional days were also posted online, along with additional resources. This was also characteristic of the Basic Algebra course and of past semesters when I was a teaching assistant for precalculus and business calculus.

How did the implementation of a technology rich course and blended learning help my diverse group of learners? The instructional videos I created were captioned, which would help non-native speakers. I have received comments from non-traditional students on how helpful the online resources were, which ranged from worked out examples to pictures of notes from the chalk board from each class, in helping them study independently. First generation students have told me how much they appreciate having all of the tools they need to be successful. Student athletes or sick students have indicated the usefulness of these resources when they had to miss class. In general, all students benefit from having multiple resources in multiple modalities to facilitate learning.

Another component of accessibility is my humanistic approach. Having an open classroom centered on active learning helps students interact with each other when they might not have otherwise. Last semester, a student with Asperger's Syndrome told me she was not used to working with her peers in a math or class or being able to ask questions in class without the teaching getting flustered. Encouraging mutual respect amongst peers and participation has been a way that I have brought groups of diverse learners together. Using games and nonstandard activities also help reshape how students view learning math. It can be fun! I also try to make math relevant. In the Academy in Cedar Rapids I incorporated a math history fact of the day into each lesson by featuring a prominent mathematician of color, alternating between the past and present. Last year, I dressed up as Katherine Johnson for Halloween in my Basic Algebra course, and showed them a brief video about her contributions to our early space program. I then used it to tie into lesson of the day on word problems involving the quadratic formula.

In sum, I do not pretend to have all of the answers to addressing diversity. There are so many different types of students: those with invisible disabilities, non-traditional students, students from rural backgrounds, students from minority groups, religious and cultural, LGBTQ students, and more. However, by taking a step back from rigid classifications of diversity, and thinking about the multiple identities students can possess and how that plays a part in how they approach learning, I have been able to focus on pedagogical methods that actually take this into account. I have also been able to better relate to students by relating to them humanistically, have encouraged them to have meaningful interactions with one another in class, and have exposed them to contributions to the mathematical discipline by nonstandard historical figures. My hope is that these considerations, coupled with outreach activities, aimed at encouraging more students from disadvantaged backgrounds to pursue mathematics, will help contribute to the dismantling of the barriers that shield students from the beauty that is mathematics.