

“What is Equitable Teaching?”: Graduate Teaching Assistants’ Perceptions of Equity

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In response to national movements for social justice in education, there has been an increase in efforts to develop institutional structures to support diversity, equity, and inclusion (DEI) in the classroom. Teachers are tasked with supporting diverse groups of students from varied backgrounds (Ameny-Dixon, 2004). However, research indicates that there is a lack of support to empower practitioners to create equitable learning environments (Perez et al., 2020).

One significant portion of the teaching force in undergraduate mathematics is Mathematics Graduate Teaching Assistants (MGTAs). Iverson (2012) noted that current graduate education is insufficient for developing MGTAs’ skills and knowledge for fostering social change. While there is scant literature on teachers’ conceptions of DEI - the little that exists indicates that many practitioners have varied understandings of these concepts (Bell et al., 2007; Fifty et al., 2022; Garmon, 2005). Therefore, there is a need to explore how to support MGTAs in developing equitable and inclusive teaching practices.

In this study, we investigate MGTAs’ initial conceptions of equitable teaching practices. Additionally, we report our initial observations on how the MGTAs interacted with specific activities throughout a teaching seminar focused on active learning and DEI topics. This work is part of a larger project that aims to design and implement a multi-stage, MGTA professional development program centered on equity and inclusion in a range of academic institutions.

In our initial findings through semi-structured interviews and post-class surveys, we noticed that MGTAs’ conceptions of equity generally referred to a deficit in students’ content knowledge. For example, a significant portion of our subjects thought that equitable teaching involved providing extra office hours or spending more time with students in the classroom based on how well they understood the material. Few MGTAs demonstrated an awareness of differences in student backgrounds and identities that may have impacted their schooling.

We observed that directly discussing the diverse populations that take undergraduate mathematics courses supported the MGTAs in expanding their conception of equitable teaching practices. In particular, providing these MGTAs with descriptions and illustrations of students’ access needs, mathematical backgrounds, and classroom experiences aided the MGTAs in discussing ways in which they could create a more equitable teaching environment.

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Context, Research Questions, & Methodology

Context:

- There has been an increase in efforts to develop institutional structures to support diversity, equity, and inclusion (DEI) in the classroom
- Current graduate education is insufficient for developing Mathematics Graduate Teaching Assistants’ (MGTA) skills and knowledge for fostering social change (Iverson, 2012)

Research Questions

- What are MGTA’s conceptions of *equitable teaching*?

Data Sources

- 31 Clinical Interviews with MGTA at 3 institutions
- Clinical Interview consisted of questions asking about MGTA’s teaching experience and ideas about equitable and inclusive teaching

Working Definition of “Equitable Teaching”

Equitable Teaching refers to focusing on the needs of every individual and ensuring the right conditions are in place for each person to achieve their full potential. An equitable classroom values the unique contributions that students of all backgrounds bring to the classroom and allows diverse groups to grow side by side, to the benefit of all.

Teaching practices include attending to:

- student identity, addressing stereotypes and bias
- intentional language use (e.g., Su, 2015)
- small-group structure and roles (e.g., Brown, 2018; Dasgupta et al., 2015; MAA, 2018; Reinholz, 2018)
- addressing needs of current-day students, including access and resources

What does “Equitable Teaching” mean to you?

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MGTA Conceptions of Equitable Teaching

“How would you describe equitable teaching at the post-secondary level or college level?”

- Overall, the MGTA’s had varying ideas on what “equitable teaching” entailed. Coding revealed overlapping themes.
- Besides “helping students”, there was no one theme that appeared in more than 50% of MGTA’s responses.

Equitable Teaching as...

Using multiple/diverse teaching styles

“Equitable teaching is a way of designing **teaching methodologies** that allow for **multiple methods of learning** from students”

“I think having a **diverse set of ways that you present material**. Some students may be **more visual**. Some students really like to just **hear what you’re saying**. So yeah, providing all the students with the best change to do well in your class I guess.”

“So like **explaining things a different way**, playing a video, and doing something that’s more quiet individual work”

“Split it up so there’s a little of everything for **each type of student**... like for example if I’m speaking a lecture to you, I’m also trying to write down what I’m saying on the whiteboard so that students can get **both audio and visual** there”

Helping students who are behind

“Trying to figure out if there are students who are **falling behind** and figure out how to get them **back on pace**”

“To be equitable you want to make sure, like focus on students that **might not have the material down** and come back to them more often and engage with them more often”

“So students with different backgrounds like there’s a lot of **students with gaps in their mathematical content** knowledge from prior courses and **so being able to help fill those**”

“So equity for me it’s more like I give everybody what they need. So, for example, if I have office hours, and as they come in, if one student, I notice they have **more gaps**, they might need more time to spend with me vs. somebody who has just one or two questions that might be more of like a clarifying question.”

Being accessible and available to students

“Equitable teaching would be providing all of the students with **equal access to a teacher or TA**. So **office hours that are accessible to everyone**. Maybe someone has a job on the side or is on a team or, you know, in the choir, something like that. And making sure you have office hours or **a way to reach you** even when everyone has all these different schedules.”

“I want everyone to be **able to have that opportunity to come and study or ask questions**, or whatever they need to do. So I’ve definitely pushed myself to, **if someone can’t make it to office hours, then I schedule other times**”

Equal access/provision to resources and learning

“Equity is every student has **equal access** to a laptop and reliable internet access or something like that”

“Equity, to me, probably implies a lot of **free available resources**. Things like that are kind of open door policies to allow students to try and **seek out as much support as they can**.”

Involving Active Learning

“Of all of the class, like most of the time where it’s **the most equitable is the active learning process**, because those are designed to be smaller **group work** activities, **working together**, and getting **questions answered**”

“Like **interactive with group work**, or you know, they’re like creative and exploratory ways to engage with the material and those things are helpful for equity and inclusion. Having **students work together and talk to each other and collaborate**.”

“It’s most equitable when we’re kind of in a **discussion mode**. When it’s not me standing up there giving them information. More when it’s **students asking questions or working on problems in smaller groups**.”

Discussion

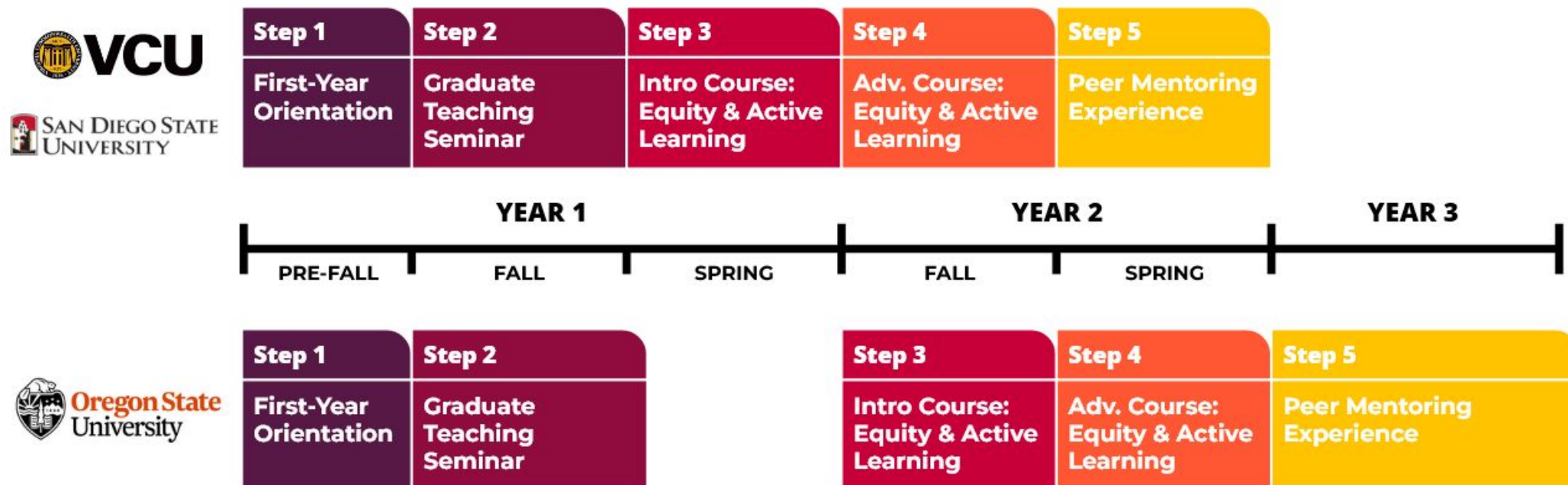
- Few MGTA’s explicitly mentioned an awareness of how students’ identities impact their classroom experience:

“Each student has **individual experiences** that they’re bringing to the classroom and that, if we can **acknowledge those different identities and those different backgrounds**, that **we can help students have access to the material in a better way**.”

- While many MGTA’s explained equitable teaching as “giving according to needs”, most of these MGTA’s associated this with different learning styles (Audio/Visual/Kinesthetic) or helping students who are behind on content knowledge.

The Elite PD Program

- We designed a professional development (PD) program for MGTA’s focused on engaged learning, inclusive teaching, and equity (ELITE PD).
- The ELITE PD program spans 2-3 years and will be implemented at three collaborating institutions with differing contexts.
- MGTA’s who participate in the program will be supported in making incremental changes to transform their teaching and broaden their understanding of equity and inclusion.
- Cohorts will be recruited from each institution and progress through a sequence of PD workshops, classes, and peer mentoring



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