

## PROSPECTIVE MATHEMATICS TEACHERS' CONCEPTUALIZATIONS OF EQUITY

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Keywords: Equity and Diversity, Teacher Education - Preservice

Prospective mathematics teachers (PMTs) may have early and frequent opportunities to observe and teach in mathematics classrooms. What is often lacking, however, are their opportunities to examine and discuss inequities that exist in the classroom. This paper explores 30 PMTs' (19 from a university (U) and 11 from a community college (CC)) conceptions of equity, utilizing two of Gutiérrez's (2012) four dimensions of equity, namely access and power. Specifically, we investigated and compared their proposed responses to two hypothetical vignettes (Max, 2017) from mathematics department conversations regarding calculator usage and mathematical discourse.

**Vignette 1**-Ms. Lopez: I encourage some, but not all, of my students to use calculators in class. If I don't let these students use calculators, they can't contribute to the problem solving we're doing. Mr. Parker: I too have students who benefit from the use of calculators, but I think fairness is really important. Depending on the lesson, I either let all of my students use calculators or none of my students. This way no one ever feels cheated.

**Vignette 2** -Ms. Booth: Because I know more mathematics than my students and they look to me as the expert, I do most of the talking. It's important for students to hear the correct uses of mathematical language so I model that as much as possible. Ms. Sutherby: Students will learn mathematics by using the language themselves, even if imperfectly, so I let them talk as much as possible.

Preliminary analysis revealed that the majority of the PMTs explicitly agreed with one teacher's approach (U = 84% and CC = 64% for access and U = 63% and CC = 45% for power). PMTs considered equality, creating more interactive learning environments, and classroom resources with respect to calculator usage. Most of the PMTs viewed fairness as equality and expressed a desire to create an interactive learning environment (U = 79% and CC = 55% ) while less than 10% of the PMTs from each group favored only encouraging some students to use calculators. More PMTs from the community college (36%) preferred a balance of both approaches than those from the university (11%). The equality responses included: "I agree with Mr. Parker and think if I do allow students to use their calculators it should be everyone, so no one feels left out or as Mr. Parker said cheated out of the test" (CC). Modeling correct language and allowing the students to talk during class were both important factors in PMTs' views on mathematical discourse. In the discourse vignette, 63% and 45%, respectively of the PMTs supported having students do most of the talking, none of the PMTs encouraged the teacher-majority approach, and 37% and 55% of the PMTs preferred a balance of the two approaches. The student majority approach responses included: "Classroom conversation should be about creating new knowledge. ... I want my students to feel comfortable about sharing their thinking, therefore, I want them to do most of the talking..." (U). Additionally, the elementary PMTs from CC were less likely to relinquish power regarding whose voice dominates in the mathematics classroom, however, all PMTs were aware of and thinking about some equitable issues.

### References

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