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Statement of Teaching Philosophy

Introduction

"Mmmm wonderful, thank y'all for these suggestions!" I say as I finish writing 'clear lectures' on the board. I turn back to the class and, seeing no hands, prompt "Ok, now I have a question for y'all… What about grading, do you expect lenient grading from me?" A brief silence follows, then a quipped voice from the back of the class: "It'd be nice!" A chorus of laughter, my own laugh in harmony. "Heard, it would be nice… and I worry that your learning might not benefit from lenient grading." I pause, collect my thoughts, and continue: "I'm wondering about 'fair and consistent grading' – I imagine that's something y'all expect from me?" I observe a mixture of smiling and begrudging head nods, so I continue: "I'm seeing head nods" and proceed to write 'fair and consistent grading' on the board.

I am currently teaching Math 112 as an instructor of record for the second time, and I tried something new in our first class. Even before going over the syllabus, I ran a discussion activity. I asked students to reflect on two questions – first individually, then in groups, and finally as a class: 'What expectations do y'all have of me?' and 'What expectations do I have of you?' I enjoyed this 'expectations activity' as an indirect way of building community norms, a process in which I work to center student agency alongside instructor guidance. Plus, I saw how the activity provided a low-stakes, concrete way for students to start talking to each other, and thereby begin building relationships.

Positionality

I see relationship-building as an essential element of effective teaching, and I see my "positions" in the world as underpinning how I relate to students. I am a White, American, transgender, queer, able-bodied, first-generation graduate student. While my transgender identity has disconnected me from nuclear family support, I grew up in a middle-class household and I could take advantage of opportunities without pay throughout my childhood. My high school offered two calculus classes, both of which I took. I recognize that my lived experiences and my relationship with mathematics differ – at times substantially – from my students, and I aspire to center gratitude, humility, and celebration when I engage with these differences.

Student experience and classroom environment

I strive to get to know my students as people with lives outside of the classroom: I administer a getting-to-know-you survey, I learn my students' names, and I attentively create space for students to share about themselves. Relationship-building matters to me because it can support a sense of safety in the classroom, which I view as essential for students to engage in the vulnerable process of learning. Indeed, I believe that in learning we must admit – to ourselves and to others – that we don't yet know and might need help in knowing. I see great

vulnerability in these admissions, so I work to cultivate a class in which students feel safe to learn and grow.

Likewise, I want students to feel they can bring their authentic selves into our classroom. I include a "mathematician blurb" in weekly course announcements to support this feeling. Each brief "blurb" introduces a modern-day mathematician, highlighting both the math they study and their unique identities, journeys, and perspectives in the field of math. I aspire that my students come to view themselves as doers of math, and I see the impact when students know about mathematicians with whom they can identify.

When I taught Math 106 as an instructor of record in Fall 2022, for example, I designed and ran a "Visibility Lab" that tied into the weekly blurbs. The lab had students choose a mathematician, write/record/draw a small piece about the mathematician, and then share their piece with one another in groups a week later. Several of my students discussed – with vulnerability – a deep sense of connection to their mathematician based on shared identities and common lived experiences. Another student danced a little jig to celebrate an 'aha' moment around an in-class concept applied to their mathematician's research area. I see such moments as powerful motivators for students to continue to engage with challenging material, especially students who have absorbed narratives that math "isn't for them".

Student learning and assessment

I am a mathematician as well as a teacher. The former identity informs my desire to actively and accurately assess student learning in measurable ways. This semester, for example, I am assessing over various timelines. Day-to-day, I assess by listening-in on student conversations, by chatting with students directly during groupwork, and by conducting casual in-class polls – "thumbs up for 'yes', thumbs down for 'no', and thumbs sideways for 'not sure'". Week-to-week, I assess by reviewing the weekly 'check-in' at the end of each problem set. And month-to-month, I assess with exams.

I used to dislike in-class exams as an assessment tool. I worried that they could heighten student anxiety, have inequitable impacts on various student populations, and take up valuable class time. I maintain these concerns, and I have simultaneously come to value how exams can help me check-in on students' unassisted learning, as well as provide students with a system of accountability. This semester marks the second time I've taught Math 112 – a coordinated course – and I set a goal for myself of working to further alleviate the potential downsides of exams.

For example, in the syllabus and during the first class, I highlighted the universal benefit provided by the on-campus Testing Center, not only to students with academic accommodations

but also to anyone who must make-up an exam for a conflict/illness. I see this as proactively easing student anxiety around the many "What if I ___?" scenarios. As another example, I took a moment after our first midterm to discuss the utility of assessment, both for me and for the students themselves. I reasoned that if we maintain awareness via the day-to-day and week-to-week check-in tools, then the month-to-month assessments can feel less daunting. I've noticed an increase in student engagement in the weeks since then, and I'm excited to feel a different energy going into the second midterm. Lastly, I have written and provided practice exams to facilitate student preparation, careful to include questions of the same types (e.g. True/False) and quantity they will encounter in the exam itself.

I identify my complicated relationship with exams as also arising from my concern that exams cannot adequately assess the many "soft skills" I see in the math classroom. I aspire that my students develop their abilities to communicate with precision, think logically and analytically, sit productively in confusion, take careful notes, and use abstraction as a problem-solving tool. I do not imagine that students have "mastered" these skills by the end of the course. Rather, I see my classes as facilitating students' life-long journeys in developing and applying them in students' own ways.

Exploration and curiosities

I'm excited to explore innovative teaching methods. For one thing, I'm curious to explore alternatives to traditional math exams: perhaps replacement with distributed low-stakes quizzes, exams with a structured "work-in-groups" portion, or emphasis shifted to presentations or projects. I'm also curious about increasing student agency in how they demonstrate their understanding, such as projects where students choose their medium (like my above "Visibility Lab") or perhaps a course structure that lets students choose their grading scheme. Third, I'm curious about incorporating reflective portfolio work, both to help me assess students' soft skills development and for students to engage metacognitively in their learning. I see the weekly check-ins I wrote for my current Math 112 problem sets as a mini-version of this, and I'd love to grow it. I am generally excited about methods that foster student metacognition as I want to empower students to self-assess their development.

I propose to explore some of these practices in a Bass Instructional Fellowship, for which I am applying to teach "Math 185: The Art of Proof" in Fall 2025. I think of the course as "mathematics for poets" – or, an introduction to mathematical proofs as creative endeavors. The course text would be the open-access book *An Introduction to Proof via Inquiry-Based Learning*, and I'm excited to have structured my proposed syllabus around discussion-based learning with distributed quizzes and ample student presentations. I've included this proposed syllabus in my application package for reference.

Lastly, I am increasingly interested in higher-level, data-informed techniques for assessing the impact of my teaching practices. My interest got me involved in the multi-institution "Achieving Critical Transformation in Undergraduate Mathematics" project (*ACT UP Math*) a year and a half ago, for which I am currently working with two faculty on a qualitative analysis of data from focus groups with some of our students. I advocated that we investigate students' emotional responses as part of our analysis because I see emotions as intertwined with learning, engagement, and sense of belonging. I have felt both challenged and inspired by meticulously reading student responses, and I look forward to learning from our analysis.