

University STEM Students' Discussions of Themselves and People They Know as "STEM People" (or not) Favors Masculine Forms of STEM Participation

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OVERVIEW: Masculinized ideas about what being a "STEM person" means manifest in how STEM students at a Hispanic Serving Institution talk about themselves and others as a STEM person (or not).

AUDIENCE: Doctoral advisors, Formal educators, Informal educators, Parents, Policymakers, Researchers/Researcher supervisors, Outreach specialists

KEY POINTS

- College students see people who they know as STEM people when they display knowledge of facts.
- They consider someone they know to be *less of a* STEM person when they show feminine interests.
- Women are often held to a higher standard than men when evaluating them as a STEM person.
- Gendered characterizations of a STEM person match hierarchies of STEM disciplines.
- Addressing how gendered Discourses show up in casual recognitions may challenge the status quo.

INTRODUCTION: Examining how individuals transitioning to STEM careers perceive themselves and influential figures in their lives as either a "STEM person" or not can expose how dominant and marginalizing STEM Discourses persist even as the disciplines diversify. To explore this, we interviewed 20 college STEM majors at a Hispanic Serving Institution in the U.S. to learn about how they think of themselves and others as STEM people, or not. We looked at how their characterizations aligned with masculine Discourses of STEM and how criteria for being a "STEM person" showed up differently when they talked about men and women.

FINDINGS: Students grounded the way they talked about someone as a STEM person or not in how they thought about that person's intelligence. But not all kinds of intelligence mattered. More masculine ways of showing intelligence, such as knowing facts, qualified, but searching for answers did not. This especially showed up when contrasting mothers and fathers. Despite this preference for factual knowledge, students viewed more masculine disciplines (like physics) as more "STEM" because these subjects were about innovating rather than reciting facts (such as how students described biology). Even when women demonstrated eligible kinds of intelligence, students held them to a higher standard than men. Students valued STEM interest and performance as indicators of a STEM person, but mostly when these characteristics could showcase intelligence. For some female students, interest also helped support STEM identity because it differed from interests of "most girls".

TAKEAWAYS: To suggest that our findings should challenge the field to disrupt what it means to be a "STEM person" is tempting. However, we acknowledge the entrenchment of "intelligence" with "STEM" that pervades every institution concerned with "STEM" and "STEM education". Rather, we believe that this significant intelligence criterion could be co-opted to recognize diverse exercises of intelligence, such as those that shine when maternal caregivers collaborate with their children to find answers.

We recognize the responsibility our findings place on university students who seek recognition from individuals, such as university faculty, who uphold narratives reinforcing masculine dominance within STEM. Our work implies not only a need to change what is recognized as "STEM intelligence" but also to ensure university students are supported with structures that allow them to recognize others as STEM people in more gender-inclusive ways, without jeopardizing their own developing STEM identities. Thus, we suggest that initiatives that support the STEM identity of individual learners also extend their efforts to attend to how focal individuals perpetuate this inclusive understanding of STEM participation to others. Findings also suggest a need to consider how "STEM identity" surveys can account for the differentiation of disciplines that respondents may describe as "more STEM" or "less STEM".