

Perspective

Motion sickness as metaphor: Engaging with diversity in STEM

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Introduction

Science Technology Engineering and Math (STEM) continue to work to increase the diversity of the fields, yet there are still significant historical and societal hurdles to overcome before we reach full representation throughout STEM. The concept of science identity has become a point of interest in this process; it has been suggested that development of one's identity as a scientist is critical to persistence in the field. Metaphors that are rooted in bodily experience can provide a starting point to understand abstract concepts, including science identity and how we as STEM educators respond to increasing diversity within our fields. Given the history of STEM being predominantly populated by people who are white and male, disorientation or discomfort with increasing diversity is not unexpected, and many women and people of color report discrimination and marginalization as a part of their experience in STEM.

Here I present a neuroscience-based metaphor that can serve as a starting point for understanding some of the potential disorientation or discomfort that we may experience as we engage with the increasing diversity of STEM and acknowledge this experience as a normal but temporary part of the process of growth and development as a field. We are in the midst of a cultural shift in the fields of science, technology, engineering, and math (STEM), where we recognize a need to increase diversity and access to education and research benefits and are actively working to implement change across disciplines. Clearly, we still have work to do if we believe that representation matters and that progress in STEM can benefit from diversity and equal representation of the broader population.

The metaphor present here is only a starting point to understand an abstract and possibly unconscious personal response rooted in a history of exclusion and racism. Like all metaphors, it is necessarily incomplete, and does not strive to explain how the history of STEM has influenced science identity, nor does it seek to explain precisely how we as a field can keep moving forward with a push to be more inclusive and representative of our broader national population. But it does provide a concrete reference point to understand one of the abstract ways in which we might respond to the push for diversity and inclusiveness in STEM.

This work requires deep evaluation of ourselves and how our training has shaped how we encounter the world; the people we trained with and continue to work with shape our expectation of who can and should be instrumental in the future of the field. Like through this metaphor, can start the process of reflection and reevaluation of our practices, thus leading to real and important change in how we support building a more diverse and inclusive discipline.

