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# STEM Students and Faculty See Value in a Classroom Belonging Exercise

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# DO STEM STUDENTS AND FACULTY SEE EYE TO EYE ON THE UTILITY AND VALUE OF BELONGING EXERCISES?



Kaisa Holt, Elizabeth Runkel Baez, Erin E. Shortlidge

## STUDENTS RESPONSES

Three focus groups of PSU STEM students were conducted. Students shared their perceptions of belonging in STEM coursework. They reviewed the OLL exercise and the original data. Finally, they were presented with faculty responses, asked opinions and reactions (E.g. surprised, dismayed, or in agreement with the faculty responses). Collected responses from focus groups are in preliminary coding for analysis. Emerging themes include "Accepting System as is," "Contradictions on Belonging," and "Unsafe Pedagogy."

## EXAMPLES OF FACULTY CODES APPLIED

**"Indifferent, Does not Value Intervention" and "Would not Implement" :**

"No value at all. Everyone has lived their lives, college is a time to focus on the future not the past."

**"Responsive to Intervention"; "Values Shared Experiences"; "Values Awareness" :**

"As I engage with students, I need to have an open mind and heart. I would have answered yes to about 80% of the questions. Faculty and students may not be so far apart."

## STUDENT FOCUS GROUP QUOTES

**"Accepting the System As-Is"**

"I think, at the very least, the faculty should not create [a space] that's hostile... It could be neutral, and I'd be fine with neutral.."

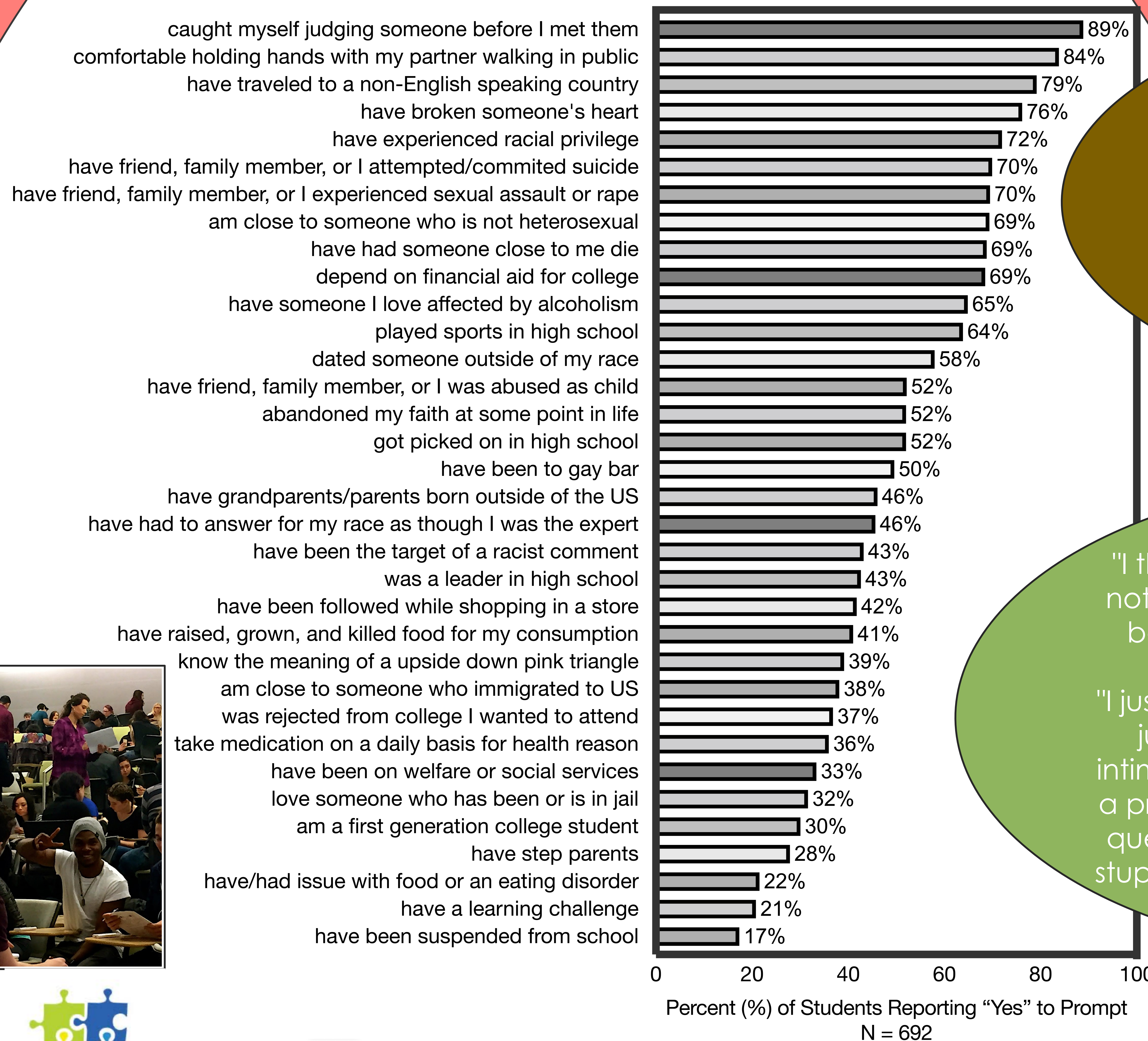
**"Unsafe Pedagogy"**

"I just feel already less than in science classes just because being a woman in STEM is intimidating, but I remember one time asking a professor a question and he shot down my question basically making me feel like I was stupid, and I already struggle with feeling less than in science classes."

## NEXT STEPS

Identify patterns in sub themes from preliminary data. Write manuscript for publication.

Student responses to **OUR LIVES LIVED (OLL) ACTIVITY**  
Percent represents "yes" responses to 34 prompts starting with "I..."



## FRAMING

Understanding and improving belonging in undergraduate STEM classrooms can be critical to student success<sup>1</sup>. Interventions have resulted in reports of increased belonging<sup>2,3</sup>. Thus, faculty have been encouraged to adopt such interventions<sup>4</sup>.

A belonging exercise was used across STEM courses at one university and the data was aggregated. We surveyed STEM faculty's perspectives on the results. Focus groups were conducted with STEM undergraduates on their perceptions of classroom belonging interventions and inclusive teaching.

## OUR LIVES LIVED (OLL) ACTIVITY

An exercise done at start of the course, filled out anonymously as an intervention for belonging. Student responses (n=692) were collected anonymously at PSU as part of regular course activities

- 2017-2019
- Largely undergraduates, ~20% graduate students
- 8 STEM courses/trainings

## FACULTY RESPONSES TO OLL RESULTS

STEM Faculty (n=93) (50% male, 42% tenure track (TT), 27% self-identified as BIPOC) were shown the results along with a description of the activity. Participants responded to a series of questions about their perceptions of the data.

## NOTABLE OUTCOMES

TT participants were more likely to be "surprised" by the aggregate student data than non-TT. The majority (90%) saw some value in OLL, 75% felt they could use OLL or similar in their own classrooms.



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**REFERENCES:** 1) Strayhorn, T.L., *College students' sense of belonging: A key to educational success for all students*. Routledge, 2018. 2) Murphy, M.C., et al. "A customized belonging intervention improves retention of socially disadvantaged students at a broad-access university." *Science Advances* 6.29 (2020): eaba4677. 3) Broda, M., et al. "Reducing inequality in academic success for incoming college students: A randomized trial of growth mindset and belonging interventions." *Journal of Research on Educational Effectiveness* 11.3 (2018): 317-338. 4) <https://studentexperienceproject.org/>  
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