EduStax by OpenStax

About our project

We embedded math narratives into our AI lesson planning tool to impact teacher and student attitudes on struggle and mistakes. We conducted qualitative and quantitative research with 37 teachers in TX and we are measuring impact with pre- and post-surveys and classroom records of teacher behavior.

Top learnings about impact

- In qualitative interviews, teachers indicated that they already had positive attitudes towards mistakes and struggle, seeing both as opportunities for deep learning. However, this may be due to demand characteristics; they did indicate that their patience for mistakes did have a limit as the year went on, and did express some discomfort with their students' strong negative emotions around failure. The interviews indicated that they anticipated the tool having a stronger impact on their students' emotions rather than their own.
- Teachers indicated that the tool would support and enhance their efforts to communicate the value of mistakes and struggle to their students.
- Although we narrowed our scope to focus on mistakes and struggle, the teachers spontaneously mentioned other aspects of the math narrative project, including elevating student agency, building relationships, alleviating negative affective responses in math, and rethinking their own capability.
- Teachers predicted the EduStax activities would promote creative agency, reduce test anxiety, and reduce students' negative affective responses to being wrong.

"[EduStax] incorporates the students, it allows them to take ownership of their learning, becasue they're creating, which is the space that we want them to live and thrive in."

"It takes away all the stigma behind... standard testing. [The students are] creating it. They're assessing themselves... There's peer assessment."

"This activity lends itself to discussion with their peers, and so I think they would be more apt to work together and seek help from one another."

"[Students] would definitely be more willing to ask for help, because they feel more supported in their learning, and not just graded and critiqued on accuracy."

Top learnings about process

- Our interviews suggested a ceiling effect for teacher attitudes; even if we do impact them positively, the positive skew for these beliefs will make it hard for our existing measurement tools to document the change.
- The results suggested we may be more likely to observe a measurable change in students' attitudes than in teachers', even though the tool is teacher-facing.

Link to full qualitative study results:

Demo Video of EduStax:

THE MATH NARRATIVE PROJECT