



Growth Mindset = Females in STEM

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Abstract

The goal of future teachers is to be able to familiarize students to the many endeavours they can achieve. Over the years, there has been a misrepresentation of females in STEM fields, especially those from Hawaiian descent. This research explores the dynamics of a fixed mindset and the effects it has on female students and how growth mindset can bridge the gap.

Introduction & Research Question

From implicit stereotypes to cultural beliefs, our future female students need the guidance and encouragement to strive for excellence. There is a common implicit stereotype within our society that boys=math and science and females=art and writing (Nosek, 2002).

Among elementary school students, females are less likely to report that they excel in math or science (Degol, 2017). This recurring self-concept has created a stigma that has followed females, young and old, in and out of the classroom. After many years of women proving that they are on equal footing as their male counterparts, why is this still an implicit belief?

In the state of Hawai'i, female students are competitively aligned with their male peers. If this is the case, then changing the narrative is necessary and achievable with implementing growth mindset in the classroom.

Research Design & Data Collection

The research project was focused around two questions:

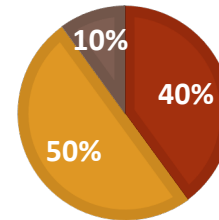
- What are student's mindset on their abilities in math and science?
- What are some effective methods in promoting growth mindset in female students?

Twenty fourth graders responded to a 5-question survey. The data collected displays a correlation between female student self-concepts and their abilities in both content areas.

Results

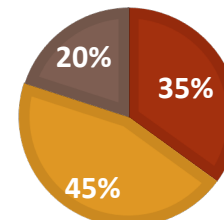
MATH SURVEY ON SELF-CONCEPT

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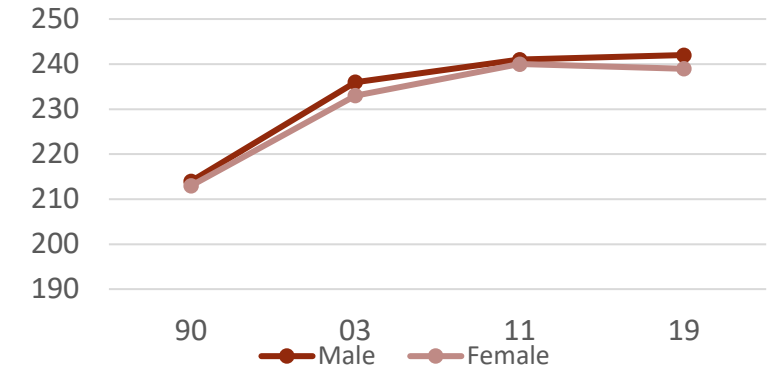


SCIENCE SURVEY ON SELF-CONCEPT

■ VERY ■ SOMEWHAT ■ NOT



NAEP Report Card: Mathematics



Discussion

After reviewing the survey results and analyzing the NAEP Report Card, it was clear that female students feel they lack academic aptitude.

Prior studies have supported the presence of a gender x mindset interaction on math performance (Degol 2017). It is a teacher's role to make STEM accessible therefore, bridging the gap of females in STEM.

Conclusions

Teacher's role in promoting growth mindset is to put an end to the bad at math self-concept (Shaughnessy, 2014).

- Growth mindset must focus on improving students' skills and less on outperforming others or proving their intelligence.
- Increasing culturally relevant lessons with place-based texts and observation-based science that are aligned with the new NGSS (Kerr, 2018).
- Promote long-term engagement with student understanding of how it can prepare one and help others (Froiland, 2016).

References

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