

Does math anxiety exist at our technical college?

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MINNESOTA STATE

TOPIC

This study was conducted to see if Math Anxiety existed in remedial math courses at Northwest Technical College enough to warrant intervention to improve success rates

PROBLEM STATEMENT

I have students that come to me in my developmental math courses expressing their frustrations with math. They express things to me like “I never understood math” or “I am a bad test taker”.

OBJECTIVES

The objective of this study was to find out if math anxiety exist at our technical college in the remedial math courses.

SoTL

I used the Abbreviated Math Anxiety Scale developed by Hopko, Mahadevan, Bare, and Hunt for my survey; I conducted my study with my online Developmental Mathematics (Math 0080) course.

I sent out the survey digitally 2 weeks into the course to all my Math 0080 students and they self-reported their own anxiety. I use a Likert scale from 1 to 5, 1 being low anxiety and 5 being high anxiety.

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REFERENCES

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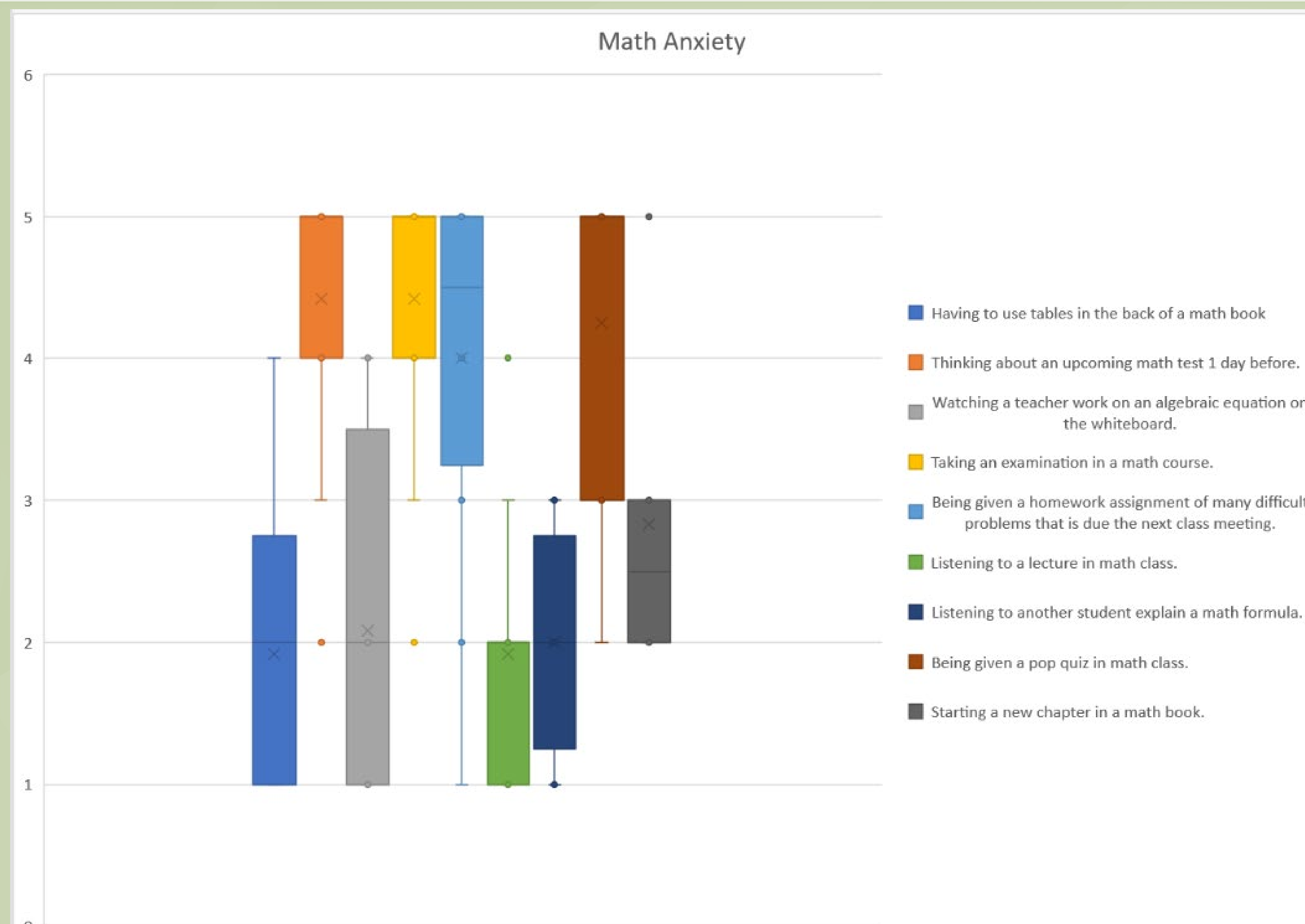


TABLE 1
Factor Loadings of Retained AMAS Items

Item	Factor Loading	
	Learning Math Anxiety	Math Evaluation Anxiety
1. Having to use the tables in the back of a math book.	.52	.35
2. Thinking about an upcoming math test 1 day before.	.27	.86
3. Watching a teacher work an algebraic equation on the blackboard.	.77	.35
4. Taking an examination in a math course.	.22	.89
5. Being given a homework assignment of many difficult problems that is due the next class meeting.	.31	.66
6. Listening to a lecture in math class.	.86	.25
7. Listening to another student explain a math formula.	.82	.17
8. Being given a “pop” quiz in math class.	.29	.84
9. Starting a new chapter in a math book.	.75	.26

NOTE: AMAS = Abbreviated Math Anxiety Scale. Factor loadings in italics specify the designated factor.

At a glance:

QUESTION

Students seem to have more anxiety in the areas of Math Evaluation Anxiety than Math learning anxiety.

SAMPLE

I did this study in the spring semester of 2020. I only got 12 out of the 25 students to participate

Due to the small sample size, I choose not to use the mean scores, thinking a box plot would give me more information. I used the box plot to find which categories had the highest IQR in relation to the other categories, then used the factor loading to find out in which category those questions had the highest factor load.

METHOD

Using the box plot it appears the areas with higher ratings hold a higher category weight in Math Evaluation Anxiety. Thinking about an upcoming math test 1 day before-.86 for factor loading, taking an examination in a math course-.89, Being given a homework assignment of many difficult problems that is due the next class meeting-.66, and Being given a pop quiz in a math class-.84. This would lead me to say Math Evaluation Anxiety seems to be more of a difficulty than Learning Math Anxiety.

CONCLUSIONS

- There is enough information to warrant a deeper study.
- Continue with a study on math test anxiety and some strategies to lower test anxiety.
- This could lead to a more campus wide effort on self-efficacy in other courses.