Moving Math: Interactive Teaching Aids for Visualizing Algebra

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Ignorance Is NOT Bliss [Professor Beck, Professor Traver]

Abstract

This project addresses the difficulty students have visualizing algebra. An online Algebra Scale and a set of Algebra Tiles were designed and developed. These tools were provided to a local 8th grade classroom, where they were used for three weeks. Our results show that students who used the teaching aids improved, and enjoyed the tools. However, they did not improve significantly more than the students who did not use the teaching aids.

Background

- American 15 year olds rank 27th out of 70 nations in math¹
- Algebra is a gateway to higher math²
- Algebra Visualization tools improve understanding³

Methods

- Develop teaching aids for Algebra I topics
- Test these teaching aids in a classroom and gather quantitative results and qualitative feedback
- Move these teaching aids online, opening them up to students around the country

Results

“I strongly feel that [the teaching aids] WORK to help demonstrate the idea of weights to keep a scale balanced”

-Mrs. Bement (8th grade teacher)

- Students taught with the teaching aids did not improve significantly more than those who were not
- Students thought the teaching aids were “Cool” and “Helpful”
- Hands on Algebra Tiles kept students focused

Improvement With Teaching Aids

References

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