



Teacher Survey Measures

OUTCOME

► BELIEFS ABOUT STUDENT MATH LEARNING¹

Construct/Subconstruct



Belief that math ability is not fixed

Items:

- Math ability is something that remains relatively fixed throughout a person's life.
- If teachers provide good instruction, all students will be able to master the general math curriculum.
- Math ability is something people have a certain amount of, and there isn't much they can do to change it.
- I can improve my math skills but I can't change my basic math ability.
- In every class, I find a few students to whom I just can't teach math.
- There isn't much I can do about how much math ability I have.
- In math, there will always be some students who simply won't "get it" no matter what I do.



Belief that math involves more than procedures

Items:

- Math involves mostly facts and procedures that have to be learned.
- In math, you can be creative and discover things on your own.
- It is more beneficial to assess a student based on their math problem-solving ability rather than on whether they solve problems correctly.
- There is usually only one way to solve a math problem.
- Students who aren't getting the right answers need to practice more problems.
- It doesn't matter whether students get the right answer as long as they understand the math concepts inherent in a problem.
- It's important for students to complete assignments exactly as the teacher planned.
- To assess students' math understanding, it is important to observe them while they are working and to listen to their math conversations.
- Students who produce correct answers have a good understanding of the math concepts.
- The best way to understand math is to do a lot of problems.
- In math, answers are either right or wrong.

OUTCOME

► SKILL IN ADAPTING CURRICULA AND INSTRUCTION TO MEET STUDENT NEEDS²

Construct/Subconstruct Frequency of using practices to adapt instructional materials and activities to meet student needs

I modify about half or more than half of a typical lesson | Items:

- To make materials more culturally relevant for my students
- To provide more enrichment activities for students who already have mastered the material
- To provide more remediation activities for students who have not yet mastered the material
- To make materials more appropriate for my students with individualized education programs or 504 plans
- To make materials more appropriate for English learners

OUTCOME

► USE OF EFFECTIVE MATH INSTRUCTIONAL PRACTICES¹

Construct/Subconstruct Frequency of using instructional practices that emphasize deep engagement with math content

How often do you ask your students to do the following? | Items:

- Understand math ideas, beyond memorizing facts and procedures
- Explain their answers to others in the class
- Make connections to math concepts from other classes—either classes they’ve taken before or ones they might take in the future
- Discuss possible solutions to math problems with other students
- Make connections between math and real-world situations
- Evaluate the math thinking of other students
- Think about why the steps to solving a math problem or following a procedure work
- Keep working on math problems even when they are stuck
- Argue or defend their approach to solving math problems
- Make connections to math concepts they learned previously in the course
- Determine if their answers to math problems make sense
- Discuss other students’ approaches to solving math problems
- Keep trying to solve math problems even if they think the problems are hard

Notes. All survey items for the outcomes “Beliefs About Student Math Learning” and “Skill in Adapting Curricula and Instruction to Meet Student Needs” are on a scale of 1 (Completely Disagree) to 6 (Completely Agree). All survey items for the outcome “Use of Effective Math Instructional Practices” are on a scale of 1 (Never) to 5 (Almost Every Day).

Endnotes

¹ Stipek, D. J., Givvin, K. B., Salmon, J. M., & MacGyvers, V. L. (2001). Teachers’ beliefs and practices related to mathematics instruction. *Teaching and Teacher Education*, 17, 213–226. https://www.researchgate.net/profile/Karen-Givvin/publication/222146826_Teachers%27_beliefs_and_practices_related_to_mathematics_instruction/links/59e63edda6fdcc0e882482c3/Teachers-beliefs-and-practices-related-to-mathematics-instruction.pdf

² Doan, S., Grant, D., Henry, D., Kaufman, J. H., Lawrence, R. A., Tuma, A. P., Setodji, C. M., Stelitano, L., Woo, A., & Young, C. J., (2020). *American instructional resources surveys: 2020 technical documentation and survey results*. RAND Corporation: Santa Monica, CA. https://www.rand.org/pubs/research_reports/RRA134-4.html



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