

FORMS OF ORGANIZATION OF MATHEMATICS TEACHING IN ELEMENTARY GRADES

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Abstract. Mathematics is a fundamental subject that plays a crucial role in the cognitive development of students. In elementary grades, it is essential to lay a strong foundation in mathematical concepts and skills through effective teaching methods. This article explores various forms of organization in mathematics teaching for elementary grades, highlighting their benefits and implications for student learning.

Key words: mathematics, mathematical concepts, visual approaches, research-based teaching strategies.

Introduction. There are many methods to help your child with first-grade math. You can fill in a number grid puzzle, build objects with logos and measure, and play Number Hunt, Hopscotch, Is It A Number, and Find A counting game for kids. You can also ask basic addition and subtraction problems using treats to keep kids interested. It is well established that younger students are concrete learners and can more easily grasp mathematical concepts through hands-on and visual approaches. The use of manipulatives, such as counting bears of different colors, can be used to teach basic counting and sorting concepts. Math can be challenging for many students. At the same time, integrating research-based teaching strategies can significantly improve their understanding of the material throughout their primary and secondary education. A strategy is how you mess with the numbers, how you use relationships and connections between numbers to solve a problem. There are a handful of important strategies for each operation. Often a strategy is categorized, described, or named by the first thing you do with the numbers. The youngest students are at the onset of their math literacy, and teaching strategies for kindergarten math must be developmentally appropriate. Start with imparting basic ideas such as counting and number recognition before moving on to more advanced concepts. Connecting mathematical concepts to real-life examples can make them more meaningful and easier to grasp for kindergarten students, while incorporating games or activities has the added benefit of making math instruction more fun and engaging. Counting or shopping games involving bills and coins of different values supports an increased understanding of counting, addition, and subtraction. Likewise, cooking games involving ingredients can help teach concepts of measurement such as weight and volume. Ongoing support and reinforcement of new ideas are essential to help kindergarten students retain what they have learned.

Materials and methods. Regular and consistent review of learned material can reveal whether individual students need additional instructions or practice. Continuing elementary math strategies should build on what early childhood students have already learned. Games and real-world examples continue to be effective, as are hands-on and interactive activities involving manipulatives. Encouraging students to take ownership of their ongoing education and math studies will help enable them to successfully meet the expectations and demands placed on them in higher education. Provide opportunities for the personal exploration of mathematical concepts through individual study and solo projects. This can be especially effective when coupled with collaborative efforts, such as having students review each other's work and discuss any errors or differences in understanding. Using increasingly complex real-world situations, such as statistical analysis of sports or finance, emphasizes the utility of mathematical concepts in everyday life. Similarly, algebra teaching strategies incorporating technology such as loan calculators and online stock trading simulations increase engagement and retention of learned concepts for secondary school students. Numeracy

intervention strategies are useful to help students struggling with math. Practical approaches will depend on each student's specific needs. They should be tailored to individual learning styles and the concepts with which that student is experiencing difficulties.

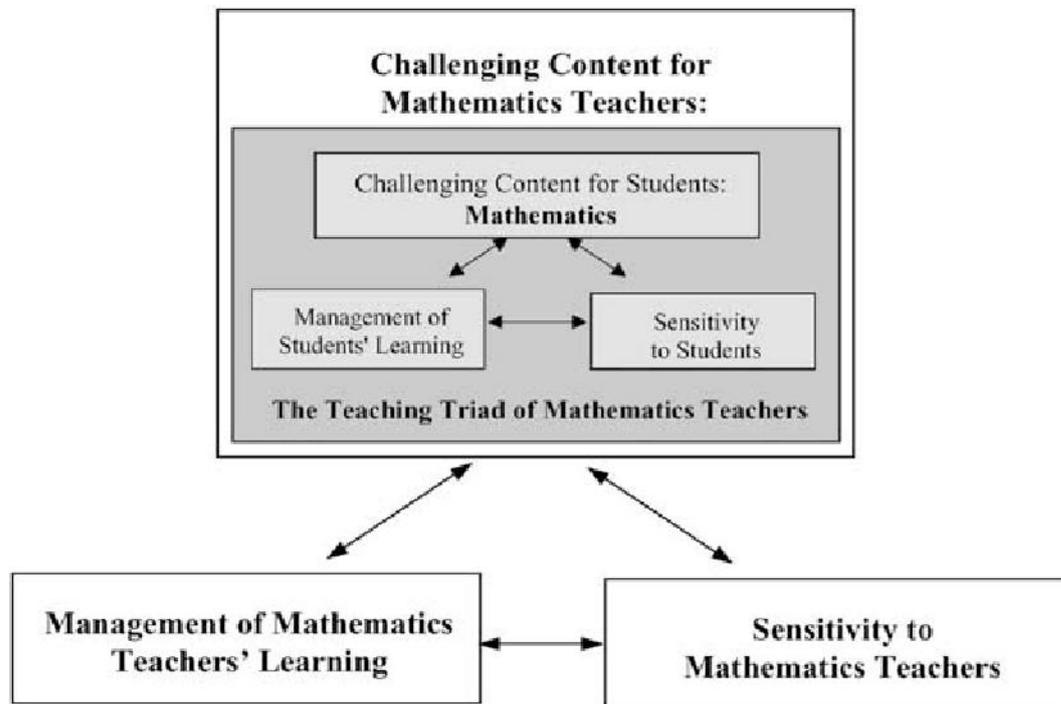


Figure 1. Challenging content for Mathematics teachers

The ability component of mathematical potential includes domain-specific and domain general components. Domain-specific components comprise learning-based mathematical knowledge, problem-solving proficiency, argumentative and modelling skills. No less important is students' mathematical creativity, which can be considered one of the mechanisms of knowledge development. Domain-general characteristics include working memory, pattern recognition and visual processing, which have been demonstrated to influence mathematical processing. A math intervention strategies list should include tools that address the needs of individual students. Visual aids like graphs and diagrams and adaptive software that responds to a particular student's performance are effective techniques. Students who need to solidify their understanding of specific topics or improve individual skills will benefit from additional practice opportunities. For students struggling with previously introduced concepts, reviewing the material using different approaches, examples, and explanations can be helpful. The most effective math intervention strategies will vary depending on each student's specific needs and learning style. Students may require different approaches to find what works best for their challenges. Overall, teachers should encourage students to persevere through the challenges they may face in understanding math concepts while promoting a growth mindset and providing ongoing support. The ultimate key to success lies in balancing traditional and modern methods and using various approaches to suit each student's individual needs and learning styles.

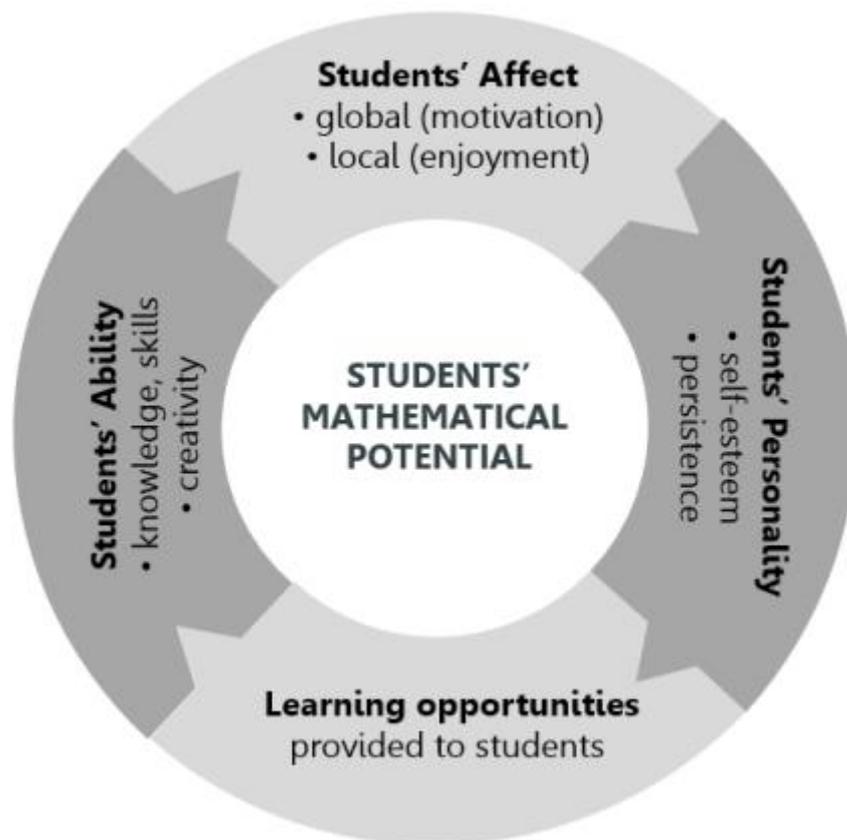


Figure 2. A Student's mathematical potential

These should gradually become more complex and involve more functions with variable solutions. The continued use of manipulatives and visual aids is most effective when employed alongside traditional methods such as worksheets and classroom instruction. Technology-based instruction, which often involves online math games, virtual manipulatives, and videos, can further help keep students engaged and actively learning. Collaborative learning furthers critical thinking and problem-solving skills. One excellent way to keep students involved is by encouraging them to work in pairs or small groups using educational apps or online resources. As students' progress through high school and prepare for a university education, independence and individual responsibility become essential. Development of mathematical potential is associated with advancement of positive affect in a person. Affective characteristics include global structures like beliefs, motivation, and attitudes toward mathematics, and local characteristics such as joy or dissatisfaction associated with progress in solving a particular problem. Motivation is one of the major conditions for the development of mathematical ability. Intrinsic motivation is associated with excitement, courage, and joy in the process of mathematical activity, and is an important construct that reflects the natural human propensity to learn and assimilate. Extrinsic motivation refers to performance of an activity in order to attain some outcome, such as high-test scores or pleasing parents or teachers. Students' potential at a particular moment is the function of students' educational histories that formed their knowledge and skills, affective and personality characteristics. At the same time, the advancement and realization of students' mathematical potential depends on the learning opportunities provided to them by the educational system and the extent, to which these opportunities fit their potential. Learning opportunities are multifaceted due both to the complexity of the construct of mathematical potential and to the variety of views on what mathematics should be taught and how it should be taught. However, there is a consensus in the mathematics education community that learning

opportunities have to be challenging, that is, to include cognitively demanding tasks which are approachable for students and evoke in student's internal motivation to overcome the difficulties.

Conclusion. The forms of organization in mathematics teaching for elementary grades discussed in this article offer a range of options to engage students in meaningful and effective learning experiences. By utilizing whole-group instruction, small-group activities, independent practice, technology-enhanced instruction, and real-life applications, teachers can cater to the diverse needs and learning styles of their students. Implementing a combination of these forms can foster a positive mathematics learning environment, enhance conceptual understanding, develop problem-solving skills, and promote critical and creative thinking. Ultimately, the use of these various forms of organization in mathematics teaching can pave the way for students' success and enthusiasm in the subject, laying a solid foundation for future mathematical learning.

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