



The Misplaced Student

The Misplaced Student and The Challenged Teacher

Algebra – A Jump in Abstraction!

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Algebra

- Research tells us that algebra is a “gateway” course.
- The earlier children learn math, the better their chances of success.
- Students must have the opportunity to take algebra when they are ready.



Equity, Policy, and Success

- A continued response to the prior lack of access to significant mathematics
- Algebra Project as a civil rights issue
- Tracking that trapped students in lower level math curriculum.
- A rush to high school Calculus – not necessarily advantageous for unprepared students, and not pursued by most students or fields.



Concerns for Students

- Failure in Algebra 1 has a strong negative impact.
- Inadequate intervention or assurance that a student has the prerequisites
- Fail and take the same course next year.
 - This does not focus on prerequisite skills needed.
 - Motivating?

Concerns for Students

- The Algebra 1 course we are discussing is similar to one of the most frequently taken not-for-credit courses in post-secondary education.
- A strong mathematics foundation will prepare students for rigorous algebra courses in high school or earlier.

NCTM's Curriculum Focal Points

- **NMP Critical Foundations for Success in Algebra:**
 - Concepts and Fluency with Whole Numbers
 - Concepts and Fluency with Fractions/Decimals/Percents
 - Geometry and Measurement
- **Curriculum Focal Points would add:**
 - Early work in Algebra
 - Data Analysis and early Probability

Importance of Early Algebra

- **Children should learn:**
 - " $5 + \textit{what} = 12$ "
- **In Algebra 1 textbook:**
 - " $5 + x + 12$ "

Classroom Perspective

- The 10% bar is too low, in fact, this reflects 2nd grade performance as claimed based on NAEP framework of items”
- This is far below the expectations of fluency with numeric concepts and operations – and connections to significant mathematics.
- There are additional students in the average Algebra classroom who may have severe difficulties with the called for prerequisites.

Classroom Perspective

- The report, using the 10% cut, suggests about 2 students per class are far behind the course expectations.
- This is likely to be true in almost every classroom, regardless of subject or age level. The students and teacher face this every day.

Legislation

America COMPETES Act

- Grants enabling schools to have math specialists on hand offering what we know to be the most effective sustained professional development—right in the classroom.
- Funding for targeting those students who need individualized support and instruction from skilled math teachers in smaller settings.

NCTM supports federal funding in next fiscal year.