Marilyn Burns

2010
Annual Conference
Summative Assessment

Too little . . .
Too late
Formative Assessment

Formative Assessment

Definition from The Council of Chief State School Officers (CCSSO)

Formative assessment is a process used by teachers and students during instruction that provides feedback to adjust ongoing teaching and learning to improve students’ achievement of intended instructional outcomes.
Diagnostic Assessment

• To determine prior knowledge and misconceptions before instruction

• To identify students who would benefit from intervention and determine their specific needs
Math Solutions Gates Grant

Middle School Math Reasoning Inventory (MSMRI)

Web-based formative/diagnostic assessment to provide teachers information and insights into the numerical understanding and skills of their incoming middle school students.
MSMRI Content

- Addition/Subtraction
- Multiplication/Division
- Fractions/Decimals
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Why does it focus only on numerical understanding and skills?

Why face-to-face interviews?

Why web-based?
Imagine sitting face to face with a student who is in sixth grade. You’re interested in learning about his or her understanding and skills with fractions.

Think of 3–5 questions you might ask.
Fractions Assessment

• Conceptual Understanding
  Meanings of fractions
  Meanings of mixed numbers
  Equivalence
  Locating fractions on a number line

• Number Sense
  Comparing
  Ordering
  Estimating

• P & P Computation
  Addition/Subtraction/Multiplication/Division
  Note for Division: only whole number divided by fraction and fraction divided by whole number

• Problem Solving
  Determining fractional parts of sets
  Solving problems in contexts
Proficient students of all ages expect mathematics to make sense. They take an active stance in solving mathematical problems. When faced with a non-routine problem, they have the courage to plunge in and try something, and they have the procedural and conceptual tools to carry through. They are experimenters and inventors, and can adapt known strategies to new problems. They think strategically.
Gates Foundation Grants

• Development and testing of assessments and instructional tools in math and literacy

• Research and field testing to ensure the assessments and tools are effective, aligned with standards, and internationally benchmarked

• Work with partners to make them universally available to teachers, districts, and states
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Links to References

• Snapshots of Students’ Misunderstandings, Marilyn Burns

• Looking at How Students Reason, Marilyn Burns

• Mental Math, Marilyn Burns


• Formative Assessment: A Process for Improving Teaching and Learning, NYSED
To download slides from this presentation, visit
www.mathsolutions.com/presentation