Developing Effective Descriptive Feedback with Classroom Assessments to Improve Student Achievement

Experience the process math coaches use with teachers...

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Assessment Crisis: The Absence of Assessment FOR Learning

If we wish to maximize student achievement in the U.S., we must pay far greater attention to the improvement of classroom assessment, Mr. Stiggins warns. Both assessment of learning and assessment for learning are essential. But one is currently in place, and the other is not.

By Richard J. Stiggins

A real voyage of discovery consists not of seeking new landscapes but of seeing through new eyes. -- Marcel Proust

… In their 1998 research review, Paul Black and Dylan Wiliam examined the research literature on assessment worldwide, asking if improved formative (i.e., classroom) assessments yield higher student achievement as reflected in summative assessments. If so, they asked, what kinds of improvements in classroom assessment practice are likely to yield the greatest gains in achievement?

Black and Wiliam uncovered and then synthesized more than 250 articles that addressed these issues. Of these, several dozen directly addressed the question of the impact on student learning with sufficient scientific rigor and experimental control to permit firm conclusions. Upon pooling the information on the estimated effects of improved formative assessment on summative test scores, they reported unprecedented positive effects on student achievement. They reported effect sizes of one-half to a full standard deviation. Furthermore, Black and Wiliam reported that "improved formative assessment helps low achievers more than other students and so reduces the range of achievement while raising achievement overall." This result has direct implications for districts seeking to reduce achievement gaps between minorities and other students. Hypothetically, if assessment for learning, as described above, became standard practice only in classrooms of low-achieving, low-socioeconomic-status students, the achievement gaps that trouble us so deeply today would be erased. I know of no other school improvement innovation that can claim effects of this nature or size.

To fully appreciate the magnitude of the effect sizes cited above, readers need to understand that a gain of one standard deviation, applied to the middle of the test score distribution on commonly used standardized achievement tests, can yield average gains of more than 30 percentile points, two grade-equivalents, or 100 points on the SAT scale. Black and Wiliam report that gains of this magnitude, if applied to the most recent results of the Third International Mathematics and Science Study, would have raised a nation in the middle of the pack among the 42 participating countries (where the U.S. is ranked) to the top five.

This research reveals that these achievement gains are maximized in contexts where educators increase the accuracy of classroom assessments, provide students with frequent informative feedback (versus infrequent judgmental feedback), and involve students deeply in the classroom assessment, record keeping, and communication processes. In short, these gains are maximized where teachers apply the principles of assessment for learning.


Findings from Ruth Butler’s research on 132 year 7 students:

• Students given only marks made no gain from the first to the second lesson.

• Students given only comments scored an average 30% higher.

• Giving marks alongside comments cancelled the beneficial effects of comments.

What is a possible conclusion one might reach based on the above research?

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Mathematics Framework

Learner Communicates Mathematically

UNDERSTANDING
Comprehending concepts, operations, symbols, and procedures

ENGAGING
Seeing mathematics as useful and doable

COMPUTING
Carrying out procedures accurately, efficiently, and appropriately

REASONING
Using logic to explain and justify solutions to problems

PROBLEM-SOLVING/APPLYING
Devising strategies for solving problems

Mathematics Proficiency For All Students

References


Mathematics Grade 6
Classroom Assessment Based on Standards (MMP 8/06)

<table>
<thead>
<tr>
<th>MPS Learning Target – Number Operations and Relationships</th>
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<tr>
<td>○ Represent and rename numbers, identify prime and composite numbers, and use factors, multiples, and prime factorization to solve and explain problems.</td>
</tr>
<tr>
<td>○ Apply, explain, and evaluate strategies to estimate, compare, and compute fractions, decimals, and percents using a variety of methods (e.g., mental computation, technology, manipulatives) with and without context.</td>
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Name a fraction that is between 1/2 and 2/3 in size:

\[ \frac{1}{2} < \text{____________} < \frac{2}{3} \]

Justify (explain) how you know your fraction is between 1/2 and 2/3.