



**LEARNING
SCIENCES**
INTERNATIONAL

Research Report

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SCHOOL

Teachers Predict End-of-Year Test Scores with Formative Assessment

By Learning Sciences International

Introduction

Here's What We Learned

Having studied classroom formative assessment practices in Canada, England, Israel, Portugal, and the United States, researchers Paul Black and Dylan Wiliam found a common thread. For all age groups, subject areas, and locations, whenever teachers used formative assessment to give students feedback, the students achieved within seven months what would otherwise have taken a full year (Black & Wiliam, 1998).

Research has already shown that...

- There appears to be a link between properly implemented formative assessment and accelerated learning.
- Formative assessment may actually increase student achievement.*
- Students who take standardized tests as a part of state assessments may be more likely to continue making achievement gains. **

It seems pretty clear that students benefit most with a blend of both formative and summative assessment. A vertical alignment is absolutely essential, but it's just as important to know, before it's too late, if that alignment is intact.

Can a student's day-to-day performance on standards-based instruction help predict how he or she will perform on end-of-year testing?

Learning Sciences International researchers set out to answer this question.

*Black & Wiliam, 1998; Crooks, 1988; Kingston and Nash, 2011; Paul and Black 1998
**Wiliam, Lee, Harrison, & Black, 2004

The Process

At the end of each school year, most students take state-issued standardized tests. Many also take periodic district assessments, which provide lagging data that shows overall levels of achievement. Unfortunately, neither of these will help much when it comes to diagnosing areas for individual growth and planning personalized interventions. That's where formative assessment comes in.

It's up to teachers and their leaders and instructional coaches to make formative assessment work. After all, teachers have to create the day-to-day tests, quizzes, and quick checks that keep students on track.

To be truly valuable, formative assessments should:

- Predict both mid- and long-cycle performance—or what Mittler (1973) terms, “assessment for learning,” rather than assessment of learning
- Be standards-based and tightly aligned with critical content and benchmark assessments
- Empower teachers to make in-the-moment instructional decisions to ensure that all students are meeting learning targets

There isn't much research comparing formative assessment data to that of state and district assessments. There has also been a great deal of concern over a lack of rigor in teacher-developed assessments (Penuel and DeBarger, 2016)—and the fact that so much depends on the teacher's subjective perception of each student's progress.

That's why it's so important to consistently

compare classroom performance data to standards-based diagnostic assessments throughout the school year. Any misalignment could potentially be rectified prior to a student's performance on end-of-year testing.

How The Study Was Conducted

Throughout the 2015–16 school year, teachers at a Florida elementary school used the LSI Tracker, a software platform that enables teachers to quickly collect student evidence during instruction, to determine whether students had met standards-based criteria on each performance assessment. LSI researchers then compared the 540 formative and diagnostic assessment scores, matched to standards, to the results of end-of-year state reading and math assessments.

Learning Sciences International researchers studied the progress of 138 students in 6 elementary school classrooms.

Results

Researchers found a positive link between Tracker scores and end-of-year assessment scores. The study found a moderate and significant correlation (.357) between tracker scores and diagnostic student assessment scores. In other words, if a formative assessment score was high, so was the summative assessment score. Consequently, preliminary evidence supported using Tracker metrics to monitor students.

The relationship also held true using OLS (ordinary least squares) regression to estimate controlling for student characteristics. The Tracker score was the second largest predictor of student achievement.

How Does This Advance Education?

This study helps to establish even more evidence that formative assessment can improve student outcomes. In addition, the study proved valuable for teachers in their professional growth. They said the comparison had helped them understand when they were overestimating or underestimating student performance on standards.

Although this study was based on six teachers and 138 students, more studies are being conducted to ensure the relationship holds true across larger sample populations.

		Formative Tracker Average
End-of-year Average	Pearson Correlation	.357*
	Sig. (2-tailed)	.000
	N(Sample Size)	138

TABLE 1: Correlation between LSI Tracker and End-of-the-Year Assessment

	Unstandardized Coefficients		Standardized Coefficients	Sig.
	B	Std Error	Beta	
Constant	.830	.130		.000
Tracker Score	.267	.081	.272	.001
Black	.219	.145	.120	.134
Hispanic	.088	.117	.060	.452
Female	-.030	.093	-.026	.745
SWD	-.415	.115	-.298	.000

TABLE 2: OLS Regression Estimates Controlling for Student Characteristics

Because the LSI Standards Tracker has shown much promise to be a powerful and effective tool for classroom formative assessment, the company is now making it available to schools and districts throughout the United States. Pre-populated with

the standards for all 50 states, any teacher in the country can use it to conduct minute-to-minute monitoring, keeping students on track for deeper learning and success with end-of-year testing.

References

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Wiliam, D.; Lee, C.; Harrison, C. & Black, P. (2004). *Teachers developing assessment for learning: impact on student achievement*. Assessment in Education: Principles, Policy and Practice

To learn more about the LSI Standards Tracker,
call us at 877.411.7114
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