

National Center on Student Progress Monitoring

Determining Adequate Yearly Progress From Kindergarten through Grade 6 with Curriculum Based Measurement *

Introduction

Progress monitoring is a scientifically based practice that teachers can use to evaluate the effectiveness of their instruction for individual students or their entire class. Teachers identify goals for what their students will learn over time, measure their students' progress toward meeting these goals by comparing expected and actual rates of learning, and adjust their teaching as needed. The benefits of progress monitoring include accelerated learning for students who receive more appropriate instruction and more informed instructional decisions and higher expectations for students by teachers. Overall, the use of progress monitoring results in more efficient and appropriately targeted instructional techniques and goals, which, together, move all students to faster attainment of important state standards for their achievement.

Another advantage of progress monitoring is that its application can be extended to evaluate progress of a student, class, or school toward fulfilling the Adequate Yearly Progress (AYP) requirement of the No Child Left Behind (NCLB) legislation. The NCLB Act requires that all third- through eighth-grade public school students become

proficient in mathematics and reading by 2013–2014. In the meantime, schools must show they are achieving AYP toward meeting the universal proficiency goal. AYP therefore is the annual minimum growth rate needed to eliminate the discrepancy between a school's initial proficiency status and universal proficiency within the established timeframe. So, what constitutes AYP for one school will be inadequate in another context.

In this paper, we provide a framework for applying one model of student progress monitoring, Curriculum-based Measurement (CBM), to effectively and efficiently fulfill the AYP accountability requirement of NCLB and how such an approach may be linked to special education accountability.

Addressing No Child Left Behind and AYP with CBM

Curriculum-based measurement (CBM) is a set of methods for assessing academic competence in reading, spelling, mathematics, and written expression (Deno, 1985). Unlike the traditional assessment that measures mastery of skills, CBM is fluency-based and its scores reflect changes in accuracy as well as in the ease of response. Another distinctive feature of CBM is that each score represents overall competence in

the relevant academic domain. For instance, the overall indicator of reading competence is passage reading fluency because it requires a coordination of multifaceted skills of reading such as decoding, word identification, and comprehension.

A third distinctive feature is that CBM permits *modeling of academic improvement* within an academic year. Individual scores of regularly administered (weekly, monthly, or quarterly) CBM plotted on a graph show the student's rate of improvement as a slope. Also, a goal line that represents a desired rate of improvement can be established by connecting the student's initial CBM score to the year-end-goal (e.g., goals reflecting AYP requirement). When the student's scores fall below this goal line, the teacher deems the present instructional program inadequate to accomplish the year-end goal, and thus, makes changes to the program in an attempt to enhance the rate of learning.

In this section, we explain how CBM can be applied to achieve the AYP requirements in reading; how a school can use CBM to monitor progress of its students toward achieving AYP; and how to use CBM to integrate general and special education accountability systems.

Three Steps for Applying CBM to the AYP Requirement

Step 1: Quantifying initial proficiency status. At the beginning of NCLB implementation, schools assess every student using CBM to identify the number of students who initially meet CBM benchmarks, which represents the school's initial proficiency status.

Step 2: Quantifying the discrepancy between initial proficiency status and universal proficiency (i.e., the 2013–2014 goal). To derive the discrepancy between

initial proficiency status and universal proficiency, schools subtract the initial proficiency status from the total number of students in the school.

Step 3: Identifying AYP. When this discrepancy is divided by the number of remaining years to 2013–2014, the resulting quotient specifies AYP, or the number of additional students who must meet the end-of-year CBM benchmarks in each year for the school to achieve universal proficiency by the deadline.

It is important to also note that the CBM benchmark for proficiency becomes more stringent each year as students advance through the grades and student population in any given school changes each year. Therefore, a school must assess and document the number of proficient students and its corresponding AYP each year based on the current student body.

Multi-level Monitoring of AYP with CBM

CBM measures are simple, easy to learn, brief to administer, highly reliable, and valid. In addition, in contrast to State assessments involving once-per-year testing, CBM provides a multi-level system of progress monitoring within a school year, as illustrated in Figure 1 using the hypothetical Strawbridge Elementary School, that ensures fulfilling of AYP (and universal proficiency goal).

Level I monitoring at the across-year school level. As shown in the top panel of Figure 1, the dotted line, connecting the Strawbridge Elementary School's initial proficiency level at the end of 2004 (257) and its universal proficiency goal for 2013–2014 (498), is the goal line specifying the AYP target *across* years. When data points fall below the goal line, the school can consider reforms to the quality of the overall reading instructional program to ensure achieving AYP and

universal proficiency goal by the 2013–2014 deadline.

Level II monitoring at the within-year school level. As shown in the second panel of Figure 1, a school can also monitor its within-year progress toward achieving the AYP for that year. At the *beginning* of the 2005–2006 school year, Strawbridge Elementary School assesses its student population and identifies 50 students who begin the year having already met the year-end proficiency benchmark. As specified in Strawbridge’s AYP, the target number of students meeting proficiency is 281 for the *end* of the year. A dotted line connecting these points (50 and 281) represents the within-year goal line for the school. This goal line shows, at any point in time, the number of students that need to demonstrate the year-end benchmark if AYP is to be achieved. When data points fall below the goal line, the school can make adjustments to enhance the quality of the instructional program to ensure attaining AYP for the current school year.

Level III monitoring at the within-year teacher level. The third panel in Figure 1 shows the number of students projected to meet the end-of-year CBM benchmarks for one teacher’s third-grade class. In this example of Mrs. Blue class, seven students are identified to have year-end proficiency benchmark (or were projected to achieve this benchmark by June given the student’s current performance and rate of improvement) at the beginning of the school year. By December, this number had increased to 17 students, and the CBM graph reveals that Mrs. Blue is effecting appropriate reading development to meet her end-of-year goal of 22 (of her 25) students achieving the CBM benchmark. If, at any time, the number of students achieving (or on track to achieve) the end-of-year

CBM benchmark were to drop below the dotted goal line, then Mrs. Blue would modify her reading instructional program to effect better progress for the students who were manifesting insufficient growth. This brings us to the fourth panel on Figure 1.

Level IV monitoring at the within-year student level. As shown in the final panel of Figure 1, September score of an individual student (61) is connected to the CBM third-grade benchmark (100) to establish a goal line. The teacher uses this goal line to track the student’s progress throughout the year toward achieving the benchmark (and contributing to the school’s AYP quota). If the student’s progress toward achieving the benchmark falls below the goal line, then the teacher adjusts the student’s reading program to generate better reading development.

Using CBM to Integrate General and Special Education Accountability Systems

CBM can be used to integrate accountability systems across general education and special education. And CBM-based IEPs can account for student learning while increase teacher expectations and effectiveness of special education.

Within the context of a revised IEP system, as with the AYP framework, a student’s initial CBM score is his/her current performance level. A line connecting the child’s current performance level with his/her year-end goal, established on the basis of CBM benchmark, represents a desired rate of progress as a slope. This “moving” benchmark provides the teacher with ongoing information about how high the student’s CBM score must be, on any given date, to achieve the goal (or benchmark). In this way, for any academic domain, all IEP components

(i.e., the current performance level, the year-end goal, and the short-term performance levels by which year-end mastery is monitored) are represented on a single graph. The teacher uses this graph as a “living document” that monitors progress and compares the rate of improvement for different instructional techniques for a given child so that effective programs are derived inductively.

This CBM-based IEP framework can be used to accomplish special education accountability. Moreover, in addition to quantifying growth for individual students under different teaching conditions to derive effective programs for individual children, CBM graph slopes can be used to document how well special education is working as a larger entity or system. An individual’s CBM slope can also be compared to the slope associated with typical development; slopes can be averaged across students for a given special educator to quantify that teacher’s effectiveness; slopes can be averaged across special educators to quantify special education effectiveness for a school district; and so on.

Summary

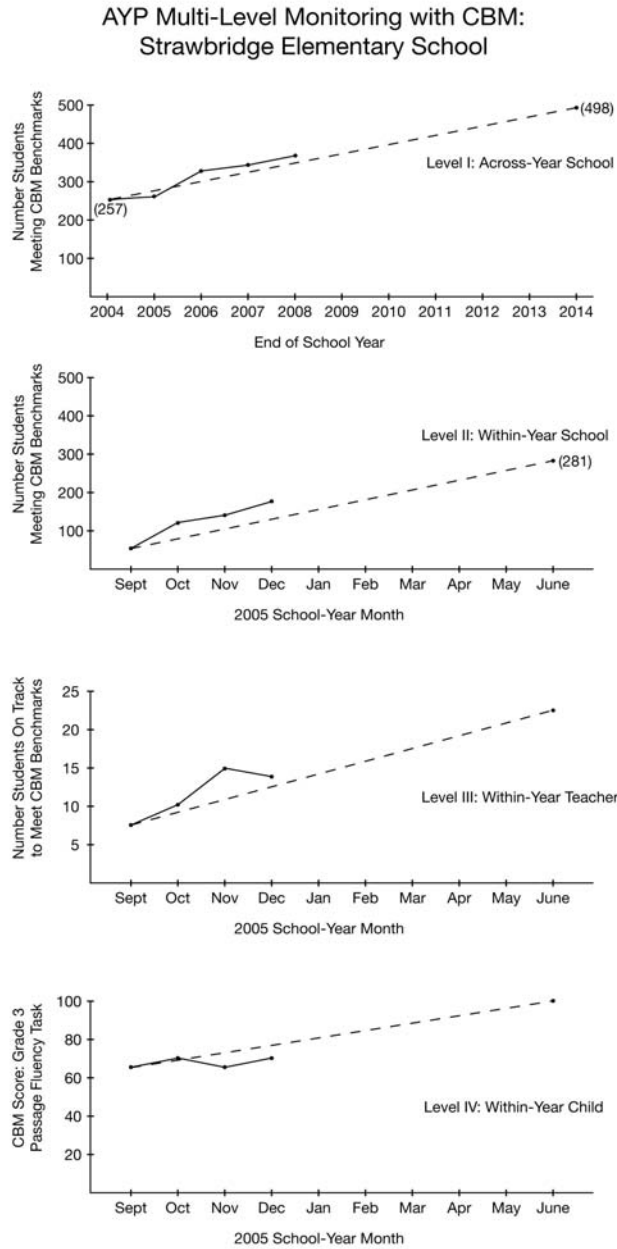
As illustrated above with an example of CBM, student progress monitoring has many tangible advantages in fulfilling the AYP requirement of the NCLB legislation. Moreover, when incorporated into the framework of IEP system, student progress monitoring can instill strong accountability for student outcomes in special education, while providing a basis for integrating general and special education accountability systems.

References

Deno, S.L. (1985). Curriculum-based measurement: The emerging alternative. *Exceptional Children, 52*, 219-232.

*Adapted by Kellie Kim-Sung from Fuchs, L.S., Fuchs, D.. Determining Annual Yearly Progress From Kindergarten through Grade 6 with Curriculum-Based Measurement. In press. *Assessment for Effective Intervention*.

Figure 1



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