

Chapter 2

History of Education

2.1 Chapter Preview

To illustrate the need for a problem-solving approach in schools and for the use of curriculum-based evaluation (CBE), the present state of education, including statistics about student performance and explanations for low school performance, is discussed within this chapter. Strategies for improving outcomes in schools are discussed and the problem-solving model (PSM) is introduced. The PSM can be applied at both the systems and individual levels, with the system laying the foundation of support for the individual.

2.2 The State of Education

It is no secret that schools are struggling in the USA. Any educator can attest to the challenges that schools face and the unsatisfactory outcomes for students. For instance, the 2011 National Assessment of Educational Progress (NAEP) results indicated that only 34 % of fourth-grade students in the USA scored at or above proficient (see Table 2.1). Massachusetts was the top-scoring state with 51 % of its fourth graders that scored at or above proficient. So the *best* state had only half of its fourth graders at a proficient level in reading. The lowest state was Mississippi with only 25 % of its fourth graders at or above proficient in reading. Eighth-grade students' scores on the NAEP were similar, as the percentage of students scoring at or above proficient also was 34 %. The highest state again was Massachusetts with 46 % of eighth-grade students proficient in reading and the lowest was Mississippi with 21 % of eighth-grade students at or above proficient [National Center for Educational Statistics (NCES) 2011a]. Mathematics scores on the NAEP are relatively higher, with 40 % of fourth-grade and 35 % of eighth-grade students scoring at or above proficient (NCES 2011b).

Given the overall low performance of students on the NAEP, it is not surprising that the average graduation rate is 75.5 % (NCES 2011c; Viadero 2011). However, there is considerable variation among state graduation rates, with Nevada scoring

Table 2.1 Percentage of high school dropout rates and percentage of fourth and eighth-grade students scoring at or above proficiency on the National Assessment of Educational Progress among US students

	Dropout rates	NAEP			
		Reading ^a		Mathematics ^b	
		<i>Fourth</i>	<i>Eighth</i>	<i>Fourth</i>	<i>Eighth</i>
General population	4.1 ^c	34	34	40	35
Students with disabilities	26.2 ^d	11	7	9	9
Students with second language	24.5 ^e	7	3	14	5
Caucasians	2.7 ^c	34	43	52	44
African Americans	6.6 ^c	16	15	17	14
Hispanics	6.0 ^c	19	19	24	21
American Indian, Alaska Natives	6.3 ^c	18	22	22	17
Asian Americans	2.4 ^c	49	47	62	55

^a NCES 2011a; ^b NCES 2011b; ^c NCES 2011c; ^d OSEP 2011; ^e Kim 2011

the lowest at 56 % and Wisconsin the highest at 90 %. The encouraging news is that the status dropout rate¹ of students has declined since 1990, going from 12.1 % in 1990 to 8.1 % in 2009 (Viadero 2011). However, there remains a considerable gap among ethnic groups and event dropout rates,¹ with nearly three times as many Hispanic and African-American students dropping out of high school compared to Caucasian students (see Table 2.1) (NCES 2011c). Viadero (2011) reports that there is a 17.6 % status dropout rate among Hispanic students and 9.3 % among African-American students compared to 5.2 % among Caucasian students and 3.4 % among Asian-American and Pacific Islander students. Additionally, a study by the National Center for Research on Evaluation, Standards, and Student Testing examined dropout rates across three cohorts and discovered that students who speak a second language have a dropout rate of 24.5 %, compared to a dropout rate of 15 % among non-second-language learners (Kim 2011). Job for the Future (n. d.) summarizes the state of graduation eloquently: “For every 10 students who enter eighth grade, only seven graduate high school on time, and only three complete a postsecondary degree by age 26” (p. 2).

As if those numbers are not troublesome enough, a comparison between the USA and other developed countries reveals more dismal findings. UNICEF (2002) examined the performance of teenagers (14 and 15 years old) in reading, mathematics, and science and ranked the United States 18th out of 24 countries after averaging the findings of five different international studies on education (including scores on the NAEP). Additionally, the results of the Programme for International

¹ *Status dropout rate* refers to the percentage of students within a certain age range who are not currently enrolled in high school and have not earned a high school diploma or equivalency. This is different than the *event dropout rate*, which is the percentage of high school students who left school in a given year and did not earn a diploma or equivalency.

Student Assessment (PISA) indicate that the United States is not heading in a positive direction. The PISA is an international assessment administered on a rotating schedule that measures performance of 15-year-old students in the areas of reading, mathematics, and science. Over 65 countries are included and between 4,500 and 10,000 students are sampled from each country. In reading, the USA ranked 15th in 2000 and then ranked 17th in 2009 (Fleischman et al. 2010; OECD 2001). The USA's performance in mathematics also decreased from a ranking of 24th in 2003 and 31st in 2009 (Fleischman et al. 2010; Lemke et al. 2004). Performance in science decreased in the USA from 21st in 2006 to 23rd in 2009 (Baldi et al. 2007; Fleischman et al. 2010).

2.2.1 Students with Disabilities and Second-Language Learners

Performance trends for students with disabilities are even worse. The 2011 NAEP results show that an average of only 11 % of fourth-grade and 7 % of eighth-grade students with disabilities scored at or above proficient in reading. In mathematics, 17 % of fourth-grade and 9 % of eighth-grade students with disabilities scored at or above a proficient level (NCES 2011a). The graduation rates for students with disabilities are somewhat encouraging, depending on your point of view. The percentage of students who exited special education by graduating with a high school diploma increased from 43 % to 56.5 % from 1997 to 2006. The percentage of students who exited special education by dropping out of high school decreased from 49.5 % to 26.2 % in that same time frame (OSEP 2011). The overall graduation rates may be low, but they are trending in a positive direction.

NAEP results for students who speak a second language are equally low. Only 7 % of fourth-grade and 3 % of eighth-grade English language learners (ELLs) scored at or above proficient on the NAEP in reading, and 14 % of fourth-grade and 5 % of eighth-grade ELLs scored at or above proficient (NCES 2011b).

Achievement results only paint half the picture of the state of public education, as there is a historical concern over the identification of students who require special education services (Merrell et al. 2006; Reschly 2008; Tilly 2008). Special education services are provided to students with disabilities to ensure a free and appropriate public education. Since its inception, there have been fluctuations in the identification rates of eligibility categories. For example, the category of learning disability (LD) currently accounts for almost half (44.6 %) of all students identified as eligible for services. This statistic may not seem alarming in and of itself, but what is alarming is the 272 % increase in identification of LD since the installment of special education. This identification increase can be compared to no change in identification of students under speech-language impairment (SLI), a 25 % increase in identification of students under emotional disability (ED)/Disturbance and a 60 % *decrease* in identification of students classified under intellectual disability. Additionally, health impairment, which is a category for students with chronic health issues, had a 460 % increase in identification rates (US Department

of Education 2012). The changes in rates of students served under various eligibility categories have raised questions about the accuracy and subjective nature of referrals of students to special education (MacMillian et al. 1998; Johnston 2011; Merrell et al. 2006; Ortiz et al. 2008).

Concerns about special education also extend to students with diverse backgrounds, as there is an apparent bias for identification of minority populations (Ortiz et al. 2008; Rhodes et al. 2005). Overrepresentation of minorities in special education has been a concern for over three decades for several reasons, including questions about unreliable and invalid assessments, weak or inappropriate psychoeducational practices, misunderstanding of the needs of ELLs, and a difficulty among practitioners to distinguish typical language development from an LD (Sullivan 2011; Zhang and Katsiyannis 2002). In fact, American-Indian/Alaskan-Native students are 1.56 times more likely and African-American students 1.46 times more likely to be identified for special education compared to other ethnic groups (a risk ratio of 1.0 indicates the risk is similar between two groups). African-American students are 2.28 times more likely to be classified under the category of ED and a staggering 2.75 times under intellectual disability, compared to 0.85 and 0.62, respectively, for Caucasians (OSEP 2011). Sullivan (2011) examined the rates of ELLs vs non-ELLs classified for special education under LD, Mild Mental Retardation (MMR), SLI, and ED categories from 1999 to 2006. She found that ELLs are 1.82 times more likely to be identified for LD compared to non-ELLs. ELLs also were 1.63 and 1.30 times more likely to be classified under MMR and SLI, respectively. ELLs were estimated to be less at risk for ED, as the risk ratio was 0.12 (Sullivan 2011). Samson and Lesaux (2009) discovered a grade-based change in risk for ELLs and special education. They found that ELLs are underrepresented in kindergarten, have similar rates in first grade, but are overrepresented by the third grade compared to native English speakers. This change in representation is believed to stem from the shift from “learning to read” in early elementary grades to “reading to learn” beginning in the third grade (Carnine et al. 2009).

In summary, the majority of students in the fourth and eighth grades are scoring below a proficient range in reading and mathematics. Achievement data for students with disabilities and ELLs are lower. Graduation rates are trending upward, but significant variation in graduation rates exists between states and between ethnic groups. Historical trends in eligibility categories show drastic changes in the rates of identification under certain eligibility categories, and students with diverse backgrounds and languages have an increased risk for identification. Given those statistics, it is not surprising that education in the USA ranks in the lower half compared to other developed countries.

2.3 Why are Schools Struggling?

Given the state of affairs in schools, it is logical to ask *why* schools are not doing well. Several possible explanations are discussed next: (a) teacher attrition, (b) a changing student population and pressure for schools to provide more than academic

services to students, (c) isolation among staff and fragmented school structure, (d) a historical focus on labeling and entitlement vs problem solving and instruction, and (e) inadequate educator training in regards to scientific practices and limited use of effective practices.

2.3.1 Teacher Attrition

Poor student outcomes may be related to the turnover of newly employed teachers and the retirement of veteran teachers without a substantial workforce to take their place (Carroll and Foster 2008). A remarkable 33 % of new teachers leave the profession in their first 3 years of employment and 50 % leave within 5 years (Gonzalez et al. 2008; Wolfe 2005). More modest estimates of teacher attrition among new teachers are between 10 % (Kaiser 2011) and 20 % to 25 % (Grissmer and Nataraj Kirby 1987). Other research has reported that approximately 8.0 % of teachers leave the profession entirely and 7.6 % leave for a new school annually (Keigher 2010). Whether teachers leave because of retirement or because they have taken a position elsewhere, teacher attrition has doubled since 1990 (Carroll and Foster 2008). This constant turnover puts a strain on schools, can prevent continuity from year to year, and reduces the number of veteran and highly skilled teachers within a school (Barnes et al. 2007).

2.3.2 Changing Student Population

Another reason that schools struggle to perform well may be related to their difficulty keeping up with the rapid change in demographics. No longer is the average student Caucasian and from a two-parent home. Consider the following facts. In 1950, 89 % of the population was Caucasian (Gibson and Jung 2002); today, that number is at 75 % (US Census Bureau 2011a). Additionally, the percentage of students living in two-parent homes held steady around 90 % from 1880 to 1970, but the 2009 census results indicated just under 70 % of children live in two-parent homes (see Fig. 2.1; US Census Bureau 2011b). That change is a decline of 20 % in just over 40 years after remaining consistent for nearly 100 years. In 2010, the student population comprised 60 % Caucasian, 20 % Hispanic, and 14 % African American. By 2050, those rates are projected to be 46 % Caucasian, almost 30 % Hispanic, and 15 % African American (Ortiz et al. 2008). The population is changing, bringing with it different background knowledge, different cultural values, and various primary languages of students. This change in population requires a change in instruction that educators may not be fully prepared to handle (Merrell et al. 2006). Teacher preparation programs have been described as “largely inadequate” in preparing teachers to work with diverse students (Ortiz et al. 2008, p. 1729). Most programs do not have a large percentage of students with diverse backgrounds, nor do they offer more than one course or even one chapter in a book on multilingual assessment and cross-cultural competency (Ortiz et al. 2008; Rhodes et al. 2005).

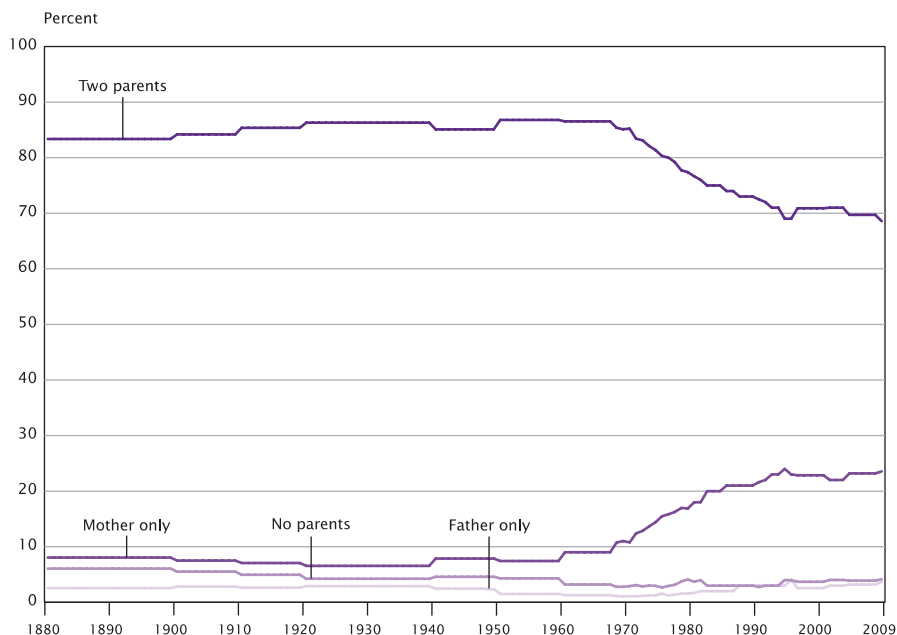


Fig. 2.1 Historical living arrangements of children from 1880 to 2009. (US Census Bureau 2011b)

Consequently, teachers may not be fully equipped to support appropriately the range of diversity in their classroom (Rhodes et al. 2005).

In addition to the shift in demographics is a change in the challenges students face. Aside from academic difficulties, students today come to school with substantial social, emotional, and behavioral needs. These needs are forcing the traditional focus on academics to change. In fact, schools have become the “de facto” mental health delivery system. Of the 20% of children who receive mental health services, 70–80% of them receive that treatment within the schools (Hoagwood and Johnson 2003). Bullying, aggression, and violence are tremendous concerns in schools, and student problem behavior is the number one concern among teachers (Horner et al. 2005; Landers et al. 2008; Sugai and Horner 2006). As a consequence, schools do not have the luxury of just teaching academics and instead, also must focus on the social, emotional, and behavioral health of their students (Horner et al. 2005). Perhaps not too surprising is the idea that disrespect toward teachers from students is a large reason teachers report burnout from their job (Landers et al. 2008). Additionally, not all schools have the same resources to support the issues that students bring. Rhodes and colleagues (2005) point out this disparity between schools, as many children from diverse backgrounds are in schools that have neither the resources nor the low student–teacher ratios of higher income schools. These complex issues from diverse student populations create instructional challenges that influence student outcomes.

2.3.3 Isolation Among Staff and Fragmented School Structure

Another factor contributing to struggling schools is the historical nature of how schools were (and perhaps still are) structured. Elmore (2000) describes a “buffer” in public education that led to an avoidance of scrutinizing instruction and practices in schools. Decisions about what students should learn and how they should be taught were left entirely up to individual teachers. Describing a challenge of education, Hattie (2009) states, “...teaching is a private matter; it occurs behind a closed classroom door, and it is rarely questioned or challenged” (p. 1). This exercise in freedom led to some unintended consequences (Schmoker 2006). Teachers essentially worked in silos, as they taught in isolation with limited feedback or input from administration. Collaboration was low among staff and the result was a loosely connected set of classrooms that varied widely in their practices and effectiveness (Chenoweth 2009; Schmoker 2006; Newmann et al. 2001). As schools felt pressure to improve student outcomes and demands for accountability increased, they would adopt various programs and initiatives that were difficult to integrate. This movement created a fragmented system with teachers pulled in numerous directions (Newmann et al. 2001). Teachers were burdened with various initiatives, resources and time were spread too thin, and as frustration with one initiative mounted, efforts were abandoned to take up another initiative that would hopefully solve the school’s ills (Newmann et al. 2001). Intentions were good, but the disorganized nature of the school system limited the success schools could achieve (Johnston 2011; White et al. 2012).

2.3.4 Historical Focus on Labeling and Entitlement

When the directive to provide all students with an appropriate education arose out of Public Law 94-142, there was a necessary push to identify students with disabilities and provide appropriate services to them. That push may have come at the cost of focusing too much on labels and not enough on effective instructional practices. Special education has been criticized for waiting to provide services until the gap between expected and actual performance is large enough to be called a disability (Johnston 2011; Merrell et al. 2006; Reschly 2008; Tilly 2008). In many cases, a child had to fail for more than 1 year before being referred for an evaluation to consider eligibility for special education services (Nelson and Machek 2007). The result? A problem that is larger than it was when the student was first identified as struggling and a problem that is very difficult to remediate.

The practice of identifying students as eligible for special education services was not only criticized as a “wait-to-fail” model, but also as a process of information gathering that did not inform instruction (Johnston 2001; Reschly 2008). Many of the assessments used to identify students as eligible for special education services were summative and measured aptitude. The results rarely contributed to

a meaningful instructional plan (Braden and Shaw 2009; Johnston 2011; Merrell et al. 2006). Instead, the assessment results contributed global statements about a child's learning capacity compared to a normative sample (e.g., your student scored in the x th percentile) (see Inset 2.1) (Hosp 2008; Ysseldyke et al. 2010). Many teachers were justifiably frustrated when little helpful information was produced from such extensive evaluations and schools were criticized for identifying and admiring students' difficulties in education without offering real solutions (Johnston 2011; Tilly 2008).

2.3.5 Inadequate Educator Training on Scientific Practices and Limited Use of Effective Practices

Another factor contributing to poor school performance is that some teachers are not trained adequately in research-based/effective instructional practices (Johnston 2011). Consider the area of reading. Despite the fact that teaching reading requires knowledge of the "Big 5" areas of reading (i.e., phonemic awareness, phonics, fluency with connected text, vocabulary, and reading comprehension) (Carnine et al. 2009; Hattie 2009), only 15% of teacher-training programs exposed future teachers to those "Big 5" sufficiently (Walsh et al. 2006). The National Council on Teacher Quality examined syllabi from 72 education schools (a total of 227 courses) and discovered that only 23% used textbooks rated as "acceptable" and there was no clear consensus on a seminal text in reading. Out of 227 courses, 154 of them used a text unique to their course, indicating that universities are using a wide range of texts and have not accepted the certainty of empirical research. Texts used ranged from those written based on personal opinion to those with outdated research, and statements in some of the syllabi examined blatantly ignored the reading research. Despite the certainty of the research on effective reading instruction, only one in seven universities taught teachers the science of reading (Walsh et al. 2006).

Inset 2.1 What Is a Percentile?

A percentile is a number used to describe how an individual's score on a test compares to others who took the same test. The percentile indicates the percent of scores or data values in a set that are less than or equal to that value. For example, a score at the 60th percentile is the same or better than 60% of the individuals who also took the test.

If teachers are not trained well, then it is not surprising that ineffective or non-supported practices would continue to be used in schools. Ash et al. (2009) illustrate the lack of use of research to guide practice in the classroom. They analyzed the reading practices of 80 teachers and 27 literacy coaches from elementary and middle schools and found that almost half of the teachers and literacy coaches sampled

used *round robin reading (RRR)*, an ineffective reading strategy in which students are called upon one-by-one to read portions of a text aloud. Of the sample that used RRR, 21 % of them reported being unaware of the research related to RRR, and 30% of them *knew* that the research showed RRR is ineffective, yet they still reported using it.

Use of unsupported practices is not limited to teachers, and teachers are not to blame for the use of such practices. A somewhat intuitive theory that came out of special education law was that each student has a certain capacity for learning that can be unlocked with the right instructional program. By assessing intrachild and cognitive abilities, educators believed they could provide each child with a specially designed program that would maximize learning, particularly those identified as having a disability. This theory, aptitude-by-treatment (ATI), argued that certain published, norm-referenced tests could be used to predict the success of certain interventions over other ones for particular students. Individualized instruction could then be planned based on the results. Griffiths et al. (2007) summarized the logic of ATI eloquently: “ATI logic contends that certain measured aptitudes (measured internal characteristics of children) can be logically matched with certain instructional approaches to produce differential benefit or learning with the student (p. 15).”

However, over 30 years of research have not supported ATI (Braden and Shaw 2009; Merrell et al. 2006; Reschley 2008; Ysseldyke et al. 2010; Stuebing et al. 2009). Griffiths and colleagues again provide an eloquent (and blunt) statement: “It is a myth among special educators, school psychologists and the neuropsychological field, that modality matching is effective and can improve student learning” (p. 15) (see also Gresham and Witt 1997). Still, the focus on assessing processing and cognitive abilities remains in practice (Fiorello et al. 2006; Restori et al. 2008), despite the lack of empirical support for ATI or learning styles (Braden and Shaw 2009; Pashler et al. 2008; Restori et al. 2008).

These findings illustrate two issues: first, some educators will continue to use disproven practices, even if they know the research, and second, a portion of educators have finished their training program or continue to work without having been exposed to relevant research. Just like other professions, educators require ongoing training on current, evidence-based practices to ensure effective and contemporary practices are used. Ensuring training and implementation of effective practices enables students to have the best chance at success.

2.4 What to do About it?

The purpose of this chapter is not to beat up on public education. The fact that many people work in education because of their resolve, passion, and dedication to helping students is not in question. Instead, the concerns in schools are described to create the impetus for change. The urgency and need for more effective practices in schools must be understood. As educators passionate about our roles, it is unsettling to know that so many students are failing. Even more unsettling is that

use of ineffective practices, making decisions in the absence of good data, and the inconsistency of teacher training all are very real problems today. Continuing to do “business as usual” will result in nothing more than mediocrity. As Mark Twain once said, “If you do what you’ve always done you’ll get what you always got.”

Having been reminded of the challenges educators face, we hope to have sparked enthusiasm for participation in educational reform. This book supports one part of that reform: using assessments that are focused on problem solving and that have high instructional relevance. Assessment should provide information that guides educators in identifying *what to teach* and *how to teach*. We have painted a grim picture of education, but we also offer hope and direction. Although there are many ways schools can improve performance, we outline 3 strategies before offering a conceptual framework for reform and refer to these strategies as *improvement practices*.

2.4.1 *Improvement Practice 1: Increase Collaboration Among Staff*

Because schools have operated in silos and teachers have historically been isolated from each other (Hattie 2009; Johnston 2011; Schmoker 2006; White et al. 2012), the first improvement practice is to break down those barriers and increase the amount of collaboration among staff (Goddard et al. 2007). DuFour and Marzano (2011) describe *professional learning communities* (PLCs) as one avenue to increase collaboration and support among staff (see also DuFour 2004). PLCs are defined as any combination of “individuals with an interest in education” (DuFour 2004, p. 6). Often, this is viewed as a grade-level or department-level team of teachers and educators. Within PLCs, teams work together to answer three questions:

1. What do we want each student to learn?
2. How will we know when each student has learned it?
3. What will we do when a student experiences difficulty in learning it?

As PLCs answer these questions, they encounter two insights. First, they quickly find out that it takes all of them working together to effectively answer and respond to those questions. No single teacher alone can answer all three of those questions as effectively as the team. After discussing the curriculum and standards that they want students to learn, teachers create common formative assessments (or use ones already created) to answer the second question. To answer the third question, teachers are faced with what DuFour refers to as an “incongruity between their commitment to ensure learning and the lack of a coordinated strategy to respond when some students do not learn (DuFour 2004, p. 8). The result is that teachers realize they must work together to provide additional time to students who have not yet learned the content. Teachers within a PLC become more collaborative and conversations among them focus on data to determine if students have learned the content and on sharing ideas, resources, and support for each other. Collaboration inevitably results in answering the three questions previously.

Second, as PLC members embrace the notion of those questions, their focus shifts from teaching to *learning*. Perhaps this shift is subtle, but it can create a belief that all students can learn with the right support, and it can break down the distrust or lack of collegiality in schools (Marzano 2003). Instead of confusing collegiality with congeniality, or with collaborating on nonacademic topics, the collegiality and collaboration that are essential to the success of PLCs deals with openly trusting each other as professionals. The PLC members work together to analyze and improve their classroom practices. They engage in an ongoing cycle of questions about instruction and student learning, they believe and trust in each other and ultimately, the result is improved student achievement (DuFour 2004; Ainsworth and Viegut 2006).

Goddard and colleagues (2007) conducted a study that looked at the connection between collaboration and student achievement. Using hierarchical-linear modeling, a statistical process that accounts for nesting issues among schools (e.g., one school may have confounding factors relative to another one that can influence results, such as one school with a lot of students from wealthy families compared to a school with a lot of students from poverty), the authors found a connection between fourth graders' achievement in mathematics and reading and the amount of teacher collaboration. Schools in which teachers collaborated more frequently on issues related to curriculum, instruction, and professional development had students who scored higher on the state assessment examination. Although this research is preliminary, it lends credit to creating a school environment of collaboration and its association with higher student achievement (Stiggins and DuFour 2009; Yates and Collins 2006).

2.4.2 Improvement Practice 2: Ensure Effective Practices

The persistent use of ineffective practices was discussed earlier (Ash et al. 2009; Pashler et al. 2009), and it should be very obvious that if schools are to get better results, ineffective practices must be replaced with effective practices. Ash et al. (2009) make recommendations to increase the use of effective practices by teachers. They point out that simply sharing the research may not be enough to ensure teachers adopt effective practices. They state that teachers should be encouraged to explore the research, gather data to evaluate their own students' progress, and have ongoing professional development to align their previous knowledge with new knowledge. Yoon et al. (2007) conducted a review of the research looking at the link between professional development provided to teachers and student achievement. Their conclusion was that teachers who received an average of 49 hours of professional development raised their students' achievement by 21 points. Although the studies included in their analyses were only at the elementary level, this is evidence to suggest that training (which leads to improved practices) can impact student achievement.

2.4.3 *Improvement Practice 3: Increase the Connection Between Assessment and Instruction*

Finally, schools can examine the alignment between their assessment and their instructional practices. Historically, assessment in education was used to either document the occurrence (or nonoccurrence) of learning after the fact, largely for accountability purposes, or to qualify students for extra services, such as special education, second-language support, or the talented and gifted program (Howell and Nolet 2000; Merrell et al. 2006). The schedule and purpose of assessment created schools in which timely feedback about student learning was limited and information that was beneficial for instructional planning was weak at best (Merrell et al. 2006; Pashler et al. 2009; Reschly 2008). To improve student outcomes, teachers need information collected readily and efficiently so that they can make adjustments to their instruction *while* they provide it (Hosp 2008; Ysseldyke and Christenson 1988). This calls for a shift from “assessment *of* learning” (i.e., using the results of assessments to document that learning occurred) to “assessment *for* learning” (i.e., using the results of assessment to adjust instruction while it is actively occurring to ensure learning) (Stiggins and Chappuis 2006).

This third improvement practice simply states that what is taught should be measured and what is measured should inform what is taught. This improvement practice requires use of assessments intimately tied to instruction that generate data with high-instructional relevancy. (We use the term “high-instructional relevancy to refer to data that provide teachers with information about *what to teach* and *how to teach*.) Historically, problems have been defined as residing within the child and assessments reflected that belief (Reschly 2008; Ysseldyke and Christenson 1988). Educators looked within the child and tried to identify innate, biological, or cognitive reasons to explain poor student performance. Terms such as “slow processor” or “visual learner” were used to describe students, but offer little information about what academic skills students need to learn or what is actually being taught in the classroom (i.e., the curriculum). Information about instruction was limited (or nonexistent), so teachers were not offered helpful solutions about how to work with students who were struggling academically (Reschley 2008; Tilly 2008).

To address these shortcomings, educators can use assessments to examine and measure *alterable* factors that contribute to student learning. The effort moves from focusing within the child to describing problems as the difference between what is expected and what occurs using observable and measurable terms. Vague descriptions such as “he struggles in reading” become, for example, “he is reading 50 words correctly per minute and he should be reading 100 words correctly per minute” or “she can’t focus on anything” becomes “In mathematics class, she attends to task 45% of the time and she should attend at least 80% of the time.” Defining problems in observable and measurable terms leaves little room for error in interpretation, provides a clear goal to work toward, and makes teaching the skills concrete and clear for students’ need (Howell and Nolet 2000; Ysseldyke and Christenson 1998).

2.5 Use of the PSM

To enable use of the three aforementioned improvement practices, schools can adopt the PSM. The PSM provides a continuous improvement framework that could correct many of the issues faced by schools today. The PSM can be applied at two levels: at the systems level, *systems-level problem solving*, and at the individual level, *individual problem solving*. (Please note that we refer to the classroom and group levels as part of the systems level).

The PSM is described in detail in Chapter 3. It is a four-phase heuristic model that outlines steps to take to identify, quantify, intervene with, and evaluate a problem. Problems are defined as the gap between the expected performance and the observed performance, and data are gathered to verify (or disprove) hypotheses about the presumed causes of the student's learning. Interventions are designed based on the results of data gathering and analysis and the student's progress is tracked to ensure learning taking place and that the original hypotheses generated about why the problem exists are true. The PSM ensures that problems are clear, objective, and defined with instructionally relevant terms (Shinn 2008).

2.5.1 *Systems-Level Problem Solving*

Given the fragmented nature of some schools and the lack of clear use of data and effective practices, it is not surprising that many schools need whole-school reform to improve student achievement and outcomes (Newmann et al. 2001). Applying the PSM to the whole school rests within a tiered model of prevention, which we refer to as Multi-Tiered System of Support or MTSS (Barnes and Harlacher 2008; Brown-Chidsey and Steege 2010; Horner et al. 2005; Reschly 2008; Tilly 2008). We will discuss MTSS in more detail in the next chapter, but MTSS is a schoolwide service delivery model. With MTSS, schools reconfigure how they deliver services into a leveled model in which students are matched to a corresponding level of instruction (called tiers). There is a focus on prevention, data-based decision making, and use of the PSM to improve practices and outcomes for students.

The installment of this model into a school is not just about using the PSM, but includes improving the use of research-based practices, increasing collaboration among staff, and aligning assessments with instruction. This model provides an overarching umbrella within which the three improvement practices can be conceptualized. Schools progress through the steps of the PSM to ask if their school as a whole is achieving high standards. The four phases of the PSM are applied to the entire school, but educators also can apply the phases to any particular student or group of students. The application of the PSM to the individual student is the focus of this book, but it is the culture and philosophy behind MTSS that provides the context in which problem-solving assessments are used.

2.5.2 Individual Problem Solving

When using the PSM at the individual student level, educators follow the same process as described for systems-level problem solving. Obviously, the unit of analysis is much smaller at the individual level, but the steps of the PSM are the same. The problem initially is identified and analysis of why the problem is occurring is undertaken. A thorough analysis of all the relevant, alterable variables contributing to the student's learning is conducted, from which instructional plans are created or adjusted. Finally, ongoing monitoring of student learning and instructional fidelity is conducted to ensure the instructional plan results in student progresses toward (and ultimately reaching) his or her goal.

2.6 Purpose of the Book

If schools are to use the PSM at both the system and individual level, they require assessments that align with that purpose. Summative assessments and assessments that focus on unalterable or intracognitive variables have less relevance to problem solving and often schools lack in assessment tools that allow for effective problem solving. It is in this gap between what schools need and what they have that the purpose of this book was born. We believe that CBE can fill a void and provide schools with an assessment process that allows for effective problem solving.

2.7 Summary and Key Points

Schools in the USA are troubled with a number of issues, including low academic performance and high rates of violence, bullying, and problem behavior. Contributing factors include the isolation of teachers, changing student population, teacher attrition, and a historical focus on entitlement and labels. To improve schools, we outlined a schoolwide approach of implementing MTSS (systems-level problem solving) and an individual approach of using CBE (individual problem solving).

Key Points

- The USA is ranked 18/24th in education between developed countries.
- Fewer than half of US fourth- and eighth-grade students are performing at proficient levels in reading and mathematics.
- Students with disabilities and ELLs perform lower than students without disabilities and those who speak English as their primary language.

- ELLs are almost twice as likely to be identified for special education identification and are three times more likely to drop out, compared to other ethnic groups.
- Schools are dealing with teacher attrition, inadequate teacher training, and isolation in their classrooms.
- MTSS is a schoolwide approach for service delivery.
- Schools could potentially improve outcomes through use of the PSM, increased collaboration and use of data for decision making, and consistent use of research-based practices.

<http://www.springer.com/978-1-4614-9359-4>

Practitioner's Guide to Curriculum-Based Evaluation in
Reading

Harlacher, J.E.; Sakelaris, T.L.; Kattelman, N.M.

2014, XVII, 303 p. 97 illus., Hardcover

ISBN: 978-1-4614-9359-4