
Effective Schools, Common Practices

Twelve Ingredients of Success
from Tennessee's Most Effective Schools

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Introduction

In Tennessee, school effectiveness is measured by the Tennessee Value-Added Assessment System (TVAAS), the most sophisticated educational accountability system in the country. Unlike achievement test averages and percentages of students performing at grade level (measures strongly related to social and economic differences among students' families), value-added systems such as TVAAS measure year-to-year gains in achievement.

The obvious question is: what does value-added data contribute to our understanding of a school's performance? The simplest answer is that it is like judging educational progress by looking at the speedometer and not just the mile marker. Value-added data tells you how fast students are moving in your school. Combined with the mile-marker information, value-added can tell you how much kids in your school typically advance within the time available. In fact, by using current TVAAS progress rates, schools can provide parents with estimates of long-term outcomes for individual students (Education Consumers Foundation, 2007).

The important point is that there are significant differences among schools in the rate at which they help their students advance. Some schools make the most of their students' developing years and learning opportunities, and others do not. And, again, value-added measurements avoid data being skewed by the economic and social differences that characterize the students and their families because they compare each student's progress to her or his previous achievement, rather than a state or national average.

Because value-added gain is such an important indicator of school quality, the Education Consumers Foundation recognizes the principals of the highest-performing elementary and middle schools in Tennessee by giving them a cash award¹. The award is based on their school's performance according to the Tennessee Department of Education's TVAAS database. Across the state, principals of 18 schools have been honored in each of the last two years.

Although TVAAS can tell us which schools are helping their students the most, it does not explain why those schools are exceptionally effective. For that information, the Foundation visited the principals of the six schools that have won the Foundation's Value-Added Achievement Award for the last two years in a row.

The following report summarizes what was learned from those visits.

¹ For more on the Foundation's Value Added Achievement Awards, visit <http://www.education-consumers.org/tproject/vaaa.htm>.

How Tennessee's Most Effective Principals Explain Their Success

The following report describes what we learned from the principals of the top-performing schools about the practices that they believe are key ingredients to their success. As it turns out, 12 of the practices they talked about were common to all six schools.

Interestingly, these 12 practices include no new innovations. They are all either time-honored elements of the schooling craft or practices that have been known in the educational research literature for decades. Many have new names or have been repackaged as part of a new program, but virtually all have historically been associated with effective schooling. Collectively, they produce what seems to be the core characteristic of their success: **student persistence to mastery**.

Most are facets of what is variously called data-driven decision making², data-driven school improvement³, or data-driven instruction⁴ – schooling practices that have been known to educational researchers since at least the 1970s. For example, the Effective Schools movement originated with a widely read article⁵ by Harvard professor Ronald Edmonds in 1979. Despite their demonstrated effectiveness, Effective Schools and kindred approaches⁶ to schooling were the subject of much scholarly criticism (e.g., Ralph & Fennessey, 1983) and never gained a widespread following within the schools (Watkins, 1995).

How and why it has been necessary for schools to rediscover these long-available practices is a question that goes beyond the scope of the present report, but clearly one that warrants further study.

Keys to Success

The principals and staff of each school were very forthcoming in describing their approach. Each school had an inventory of practices that they believed were especially important to their success. We have listed only those that were found in all six schools.

The 12 practices are grouped according to their intended role in school performance. Practices 1 - 6 involve the use of student progress data to guide instructional decision-making. Practices 7 - 9 involve the use of student progress data to improve the performance of teachers whose students are

2 <http://www.e-lead.org/resources/resources.asp?ResourceID=21>

3 http://www.mcrel.org/PDF/SchoolImprovementReform/5002RR_NewEraSchoolReform.pdf

4 http://www2.edc.org/asap/data_subtheme.asp?pkTheme=38

5 <http://www.ed.utah.edu/ELP/CourseMaterials/Cori6010F06/effec.pdf>

6 http://goliath.ecnext.com/coms2/gi_0199-1193785/Reframing-education-how-to-create.html#abstract

performing below expectations; these include mentoring and other resources. Practices 10 and 11 are designed to keep parents informed about their child's progress and to strengthen their involvement with their child's schooling experience. Practice 12 is a systematic school-wide program that tracks data on student effort, cooperation, and involvement in learning activities.

1. The top-performing schools use progress tests that assess the same skills that are tested on the state's Tennessee Comprehensive Assessment Program (TCAP) examinations.

Routine achievement testing is a well-known feature of effective instruction, and all six principals reported that they went beyond what was required by the Tennessee Department of Education in this area. The supplemental assessments they use allow educators to gauge student progress, provide learner feedback, and fine-tune instruction.

Schools Visited for This Report

The Education Consumers Foundation sent a researcher to visit six elementary and middle schools in Tennessee for this report. The schools were selected on the basis of their exceptional effectiveness in raising student performance. Each of the principals of these six schools are two-time consecutive winners of the Foundation's Value-Added Achievement Award. The award recognizes the principals of the schools with the highest three-year average TVAAS performances in reading and math. Based on this criterion, each of these schools by definition has been among the top-performing schools in the state for at least four years running.

Schools include:

Amqui Elementary

2006: 1st Place, Middle Division, Elementary
2007: 1st Place, Middle Division, Elementary
Grades K-4
Brenda Steele, Principal*
319 Anderson Lane
Madison, TN 37115
Metropolitan Nashville Schools

Hardy Elementary

2006: 1st Place, East Division, Elementary
2007: 1st Place, East Division, Elementary
Grades K-5
Natalie Elder, Principal
2100 Glass Street
Chattanooga, TN 37406
Hamilton County Schools

Joppa Elementary

2006: 3rd Place, East Division, Middle
2007: 1st Place, East Division, Middle
Grades K-8
Curtis Wells, Principal
4745 Rutledge Pike
Rutledge, TN 37861
Grainger County Schools

Collinwood Elementary

2006: 2nd Place, Middle Division, Elementary
2007: 2nd Place, Middle Division, Elementary
Grades K-4
Gail Bell, Principal*
450 North Trojan Boulevard
Collinwood, TN 38450
Wayne County Schools

Holladay Elementary

2006: 2nd Place, West Division, Middle
2007: 1st Place, West Division, Middle
Grades K-8
Marty Arnold, Principal
148 Stokes Road
Holladay, TN 38341
Benton County Schools

North Stewart Elementary

2006: 1st Place, Middle Division, Middle
2007: 1st Place, Middle Division, Middle
Grades K-8
Deborah Grasty, Principal
2201 Highway 79
Big Rock, TN 37023
Stewart County Schools

** Gail Bell (Collinwood Elementary) and Brenda Steele (Amqui Elementary) are no longer with the schools listed here; the rest of the principals continue to lead their schools.*

Chattanooga's Hardy Elementary, for example, uses ThinkLink⁷, a proprietary assessment program, to test student math and reading skills. ThinkLink questions are similar to the types of questions on the TCAP exams. Holladay Elementary, in Holladay, uses CompassLearning⁸ tests, which allow them to measure progress on the state objectives. Big Rock's North Stewart Elementary purchased manuals that provide additional information on the TCAP standards, objectives, and testing procedures from McGraw-Hill, publisher of the TCAP. All teachers were provided with a copy, and tests containing the types of questions suggested by the manuals were developed by grade-level teacher committees.

The use of supplemental assessments is well known in the educational research literature. A study by Barth et al. (1999), found that 94% of the high-performing schools in its sample used standards and guides similar to those noted above to assess student progress. They enable educators to identify and correct student learning problems before they become performance problems on the TCAP tests.

2. The top-performing schools require students to meet higher-than-minimum mastery criteria on student progress tests.

Criterion-referenced tests⁹ are used to define mastery for each type of knowledge or skill measured. Student progress is judged by comparing each student's raw scores, i.e., the actual number of questions answered correctly, to a criterion that is set by state standards to demonstrate mastery of the measured knowledge or skill. A student is not considered to have mastered a skill until he or she correctly answers between 80 and 100% of the test questions for that skill. All of the high-performing schools set their mastery criterion well above the minimum 80% required by the state. For example, first and second grade teachers from Nashville's Amqui School reported that they used a mastery criterion of 100%.

Higher mastery standards promote overall learning success by ensuring that students have a solid foundation for each subsequent step in the curriculum (Brophy, 1982).

The principals and teachers interviewed were uncertain about why Tennessee set 80% as its mastery criteria for the TCAP examinations, but all agreed that effective instruction requires minimums that are well above those now recommended by the Tennessee standards. Insufficient mastery – especially in basic skill areas – inevitably produces gaps that interfere with subsequent learning.

The desirability of high mastery expectations is consistent with research on top-performing schools. A review of high-performing, high-poverty schools by the Center for Public Education (2005) found that “fundamental to high-performing schools is the culture of high expectations shared by

7 <http://www.thinklinklearning.com/>

8 <http://compasslearning.com/>

9 Criterion Referenced Test: A test that provides scores referenced to an established criterion (a fixed point), as opposed to an NRT or Norm Referenced Test that references scores to the average of a group.

the school's principal, teachers, staff, and students. Central to this culture is the conviction that all children can achieve and succeed academically." (Page 3)

3. The top-performing schools employ practice-intensive learning activities that target the types of skills required by the examination.

Whether the activities are tutoring, small reading groups, or computer-based practice programs, all six of the top-performing schools reported that they provide practice-intensive learning activities. Examples include:

- Amqui Elementary uses reading groups, tutoring, and intersession classes to provide additional practice focused on each child's specific learning deficiencies.
- At Collinwood, students are assigned to reading groups that provide practice designed to correct specific types of errors that students are making on their reading tests.
- At Hardy, administrators require teachers to provide learning activities that target each student's skill deficits. Teachers tell the computer lab instructor which types of skills their students need and the lab instructor directs them to the correct activities.
- Teachers at Holladay Elementary use their computer lab to give students practice in responding to questions similar to those they have missed on math or reading tests.
- At Joppa Elementary in Rutledge, administrators ask teachers to recall any TCAP questions that were unexpected in order to ensure that students are skilled in the areas required by the test. For example, if there is a larger-than-expected number of word problems on the math portion of the TCAP examination, students are provided additional practice with word problems and with the type of vocabulary used in the questions. The goal of this effort is to ensure that the skill is being taught the same way it is tested.
- North Stewart Elementary uses the Accelerated Math¹⁰ and Study Island¹¹ programs to provide practice tests and exercises that are keyed to the TCAP objectives. North Stewart's parent-teacher organization bought Study Island two years ago; since then, language arts scores have improved.

Again, all of these practices are consistent with decades of educational research findings. Greenwood (1991) reviewed a number of studies in which increased academic responding¹² is correlated with greater student achievement. For example, one of the cited reports showed that procedures such as peer tutoring increased academic responding from 39 to 68% with a corresponding increase in oral reading scores from 24.4 to 48.1 correct words per minute.

10 <http://www.renlearn.com/mathrenaissance/default.asp>

11 <http://www.studyisland.com/>

12 Academic Responding: Active student responses such as writing, oral reading, asking and answering questions, and participating in academic games or tasks. In other words, practice of the skills that the students need to learn.

Ericsson, Krampe, and Tesch-Roemer (1993), in their study of expert performance, found that the number of hours of methodical practice associated with higher levels of competence in a variety of skills areas, including athletics, chess, music, and physics. For example, by age 18, expert pianists had accumulated 7,606 hours of practice while amateur pianists had accumulated only 1,606 hours.

In a 1999 survey, Barth et al. found that 78% of top-performing, high-poverty schools said that they provided extended learning time for their students, and 80% of those reported that they used state standards to design their curriculum and instruction.

Additional research evidence pertaining to practices one, two, and three

The first three practices highlighted in this report are elements of teaching methodologies that have been known to educational researchers for generations. Historically, they have been known as mastery learning (Bloom, 1988; Guskey, 1990; Kulik, Kulik, & Bangert-Drowns, 1990; Walberg & Haertel, 1997; Waxman & Walberg, 1999), formative assessment (Fuchs & Fuchs, 1986; William, Lee, Harrison, & Black, 2004), and fluency building (Binder & Johnson, 1991). Used in combination, teaching to mastery, the use of formative assessments, and practice that brings students to an acceptable level of fluency ensure that foundation skills are well established before students are permitted to advance in the curriculum. The effectiveness of this general approach to teaching has been recognized since at least the early part of the twentieth century. For example, the notion of the school curriculum as a ladder of measurable objectives to be mastered by the student can be seen in the work of Ralph Tyler¹³ in the 1930s and 1940s.

4. In the top-performing schools, the principal receives frequent reports of individual student progress with respect to the attainment of Tennessee's curriculum standards.

In addition to end-of-the-year TCAP reports, the principals in the top-performing schools typically receive progress reports at least every six weeks from reading and math tests such as ThinkLink, STAR reading and math¹⁴, DIBELS¹⁵ Reading, Accelerated Math¹⁶, Running Record¹⁷, Lexia, Orchard¹⁸, and Study Island. The progress of at-risk students is monitored every two or three weeks. Principal and teacher attention to and engagement with student progress is unmistakable and unrelenting.

13 http://en.wikipedia.org/wiki/Ralph_W._Tyler

14 <http://www.renlearn.com/>

15 <http://dibels.uoregon.edu/>

16 <http://www.renlearn.com/mathrenaissance/>

17 <http://www.readinga-z.com/guided/runrecord.html>

18 <http://www.orchardsoftware.com/>

- Amqui's Brenda Steele receives information on student progress from 1) student report cards every 6 weeks, 2) reading and math STAR test scores three times per year, 3) Running Record reading scores every six weeks, and 4) minutes from weekly meetings in which teachers plan interventions for students whose progress is insufficient.
- Collinwood's Gail Bell receives quarterly data on reading and math progress from report cards. She also gets reports on reading progress on the DIBELS reading tests from the DIBELS website for each K to 4th grade student. In addition, Ms. Bell gets daily information on student progress from a staff member assigned to be the school's "Literacy Leader." Finally, annual reports of pre- and post-test scores from the [Saxon](#)¹⁹ math program are routinely examined.
- Hardy Elementary's Natalie Elder receives scores from ThinkLink Tests three times per year and biweekly for at-risk students. DIBELS reading scores are reported to her once per month.
- Marty Arnold, principal of Holladay School, receives both STAR reading and math scores as well as Accelerated Reader reports for all students three times per year. First graders are tested more often. Teachers report every three weeks on students who are not meeting standards.
- Curtis Wells at Joppa Elementary gets student progress data from midterm report cards, weekly grade-level meetings, and monthly support team meetings. He gives special attention to the progress of at-risk students identified from yearly TCAP tests. The progress indicators on which he relies include the average percentage scores for individual students, test scores from Orchard, Lexia, and ThinkLink, and three-time-per-year reports of math and reading scores.
- Deborah Grasty, principal of North Stewart Elementary, reviews student report cards and computer reports from Accelerated Math and Study Island tests every six weeks. These tests provide information on the number of students who have mastered each skill, the number of objectives that a particular class has mastered, and lists of students who have mastered each objective. She compares the number of skills the students have mastered during those six weeks to the previous six weeks.

By virtue of their close attention to individual student performance, the principals of the top-performing schools are able to identify individual learning problems and take action before students fall behind. Each principal makes use of frequent student progress reports to evaluate ongoing school performance and to make operational changes in instruction when needed.

These practices are entirely consistent with educational research findings. In a survey of 21 high-poverty schools that scored above the 65th percentile on national achievement tests, Carter (2000) found that principals personally monitor student progress as a routine part of their instructional leadership.

19 <http://saxonpublishers.harcourtachieve.com/en-US/saxonpublishers.htm>

5. In the top-performing schools, teachers receive frequent reports on the progress of each of their students.

In addition to the assessment data reviewed by the principals, teachers get weekly and monthly measures of student progress in reading and math from computer-based reading and math tests, tests provided by textbook publishers, or from teacher-made tests. Again, this information helps them identify student learning problems and take corrective action before students fall behind. It also allows them to identify when students are ready to move ahead.

- At Hardy Elementary, teachers test reading skills of at-risk students every two weeks, grade level students monthly, and above grade level students every two months.
- At Joppa Elementary, math teachers give Accelerated Math tests weekly and scan each student's tests into the computer. Accelerated Math provides detailed scores and includes a list of the objectives each student has and has not mastered.
- North Stewart Elementary's teachers give Scott-Foresman reading tests weekly. The results are used to monitor student performance on specific reading objectives and overall progress relative to Tennessee's standards.

A number of studies have shown that routine tracking of student progress relative to state standards is widely used by high-performing schools. In a survey of 366 top-performing or most improved schools, Barth et al. (1999) found that "Nearly every school in our survey (94%) uses standards to assess student progress with 77% offering regular mechanisms for teachers to analyze student work against state standards."

6. In the top-performing schools, teaching practices are adjusted when a student makes insufficient progress towards a curricular objective. Students simply are not permitted to quietly fail.

At Amqui Elementary, the principal uses student progress data to assign students to the appropriate teacher or instruction group. Teachers make decisions about what skill to teach and what procedures to use on the basis of student progress data. Children having difficulty meeting state standards are identified and recommended for tutoring during or after school. Teachers review student progress daily. Learning activities are systematically altered for those making insufficient progress.

At Collinwood Elementary, students not reaching benchmark scores on the DIBELS²⁰ are assigned to reading groups, provided additional reading practice, given additional practice time in the computer lab, and placed in after-school tutoring.

Hardy Elementary's non-proficient students are placed in a recovery class. Recovery classes have

²⁰ <http://dibels.uoregon.edu/>

smaller instructional groups that use more hands-on materials. Hardy has switched to a year-round calendar with shorter breaks, thus permitting teachers to provide remedial activities during its three-week intersessions.

Interventions at Hardy are based on the types of reading errors that a child is making (meaning, structural, or visual); assignments to small instructional groups are made on the basis of the identified errors. Intervention typically consists of practice exercises focused on each child's specific skill deficiencies.

At Holladay Elementary, the reading teacher in charge of the computer lab identifies reading errors with the help of computer-based diagnostic tests. Customized prescriptions for intervention are provided and discussed with teachers.

Curtis Wells at Joppa Elementary uses TCAP scores to identify students who need help and to assist teachers in planning changes in the student's learning program. Teachers meet weekly in grade-level groups to review weekly assessments and plan changes.

Students are placed with particular teachers on the basis of TVAAS scores, and Wells makes a special point of not placing any student with a low-performing teacher two years in a row. Teachers then group students for instruction on the basis of ThinkLink and Accelerated Math tests.

Joppa uses weekly reading assessments to identify reading problems. The first tier of intervention is to move the student into an appropriate group for in-school tutoring. Students who need additional assistance are assigned to the computer lab for work with the Title I reading teacher. He tests the students' fluency and comprehension, and then assigns computer-based practice exercises to address specific learning deficits. Individual student progress is tracked on a graphic display.

At North Stewart, teachers develop a plan for each child who has not reached proficiency on a particular state objective. The plans are built around the question, "What am I going to do differently to improve this student's outcomes?" Teachers often work collaboratively on plan development.

North Stewart uses TCAP scores and STAR reading tests to assign students to groups that address their specific deficits. Planning and placement is initially undertaken in the summer and adjustments are made throughout the course of the school year. North Stewart also offers advanced classes for math and language arts.

The data-based instructional decision-making found in all six of these high-performing schools is entirely consistent with the practices of high-performing schools around the United States. According to the Center for Public Education (2005), "the fundamental purpose of testing at high-performing schools is to diagnose and guide the instruction of individual students. Teachers use assessment data to identify where students should improve and adjust their teaching strategies accordingly (page 5)."

Additional research evidence pertaining to practices four, five, and six

Practices four, five, and six make use of teaching processes that are well known to the educational research literature. They include curriculum-based measurement (Elliott & Fuchs, 1997; Fuchs, Deno, & Mirkin, 1984), adaptive education (Wang, 1992; Wang & Zollers, 1990), and data-driven instructional systems (Halverson, Grigg, Prichett, & Thomas, 2005). This relatively recent research was preceded by individually prescribed instruction in the 1960s and 1970s (Lindvall & Blovin, 1967), data-based instruction²¹ of the 1970s and 1980s, and programmed instruction in the 1950s and 1960s (Holland, 1960). All entail frequent monitoring of student progress for the purpose of adjusting instruction and optimizing learning outcomes for each student. The extensive literature cited in these several reports clearly documents the long-time availability and effectiveness of these practices.

7. In top-performing schools, student progress data is used to assess each teacher's classroom effectiveness. Teaching performance is tracked continuously by the principal or by colleagues who are assigned to monitor teacher and student progress.

For example, Holladay Elementary's Marty Arnold examines TCAP and TVASS data on a student-by-student and teacher-by-teacher basis. Using the TCAP data, he has devised a system of comparing local scores to national scores. He also compares the criterion-referenced test scores for each objective to the county and state averages. Deficits are highlighted and teachers are furnished a list of students who are below proficiency on each standard.

Debbie Grasty at North Stewart Elementary also reviews TCAP and TVASS scores to identify differences in achievement gains for various student subgroups across the full array of curriculum objectives and sub-objectives. Teachers at North Stewart undertake a similar review with their individual classes.

The teacher assessment practices used in these and the other high-performing schools studied are similar to those discussed in a recent California study. In a study of 257 elementary schools, Williams and Kirst (2006) found that principals of high-performing schools review a variety of student test results to evaluate the effectiveness of their teachers.

Surprisingly, the practice of assessing teacher performance on the basis of learning outcomes is a fairly sharp departure from traditional practice. For example, the National Council for the Accreditation of Teacher Education and the National Board for Professional Teaching Standards both rely on a portfolio methodology for assessing teacher quality. Historically, teacher performance has been measured by observer ratings of the individual's adherence to various teaching models and use of "best practices" – criteria that have little or no proven relationship to student learning.

21 http://books.google.com/books?id=3r6nHsw_5TgC&pg=PA532&lp=PA532&dq=%22data+based+instruction%22&source=web&ots=IM6Yw75gwq&sig=KDx4q0v5weZzUdLUQ28LMq6W7gw

8. In top-performing schools, the principal and other teachers routinely work with struggling colleagues to improve their teaching skills.

Teachers whose students are not progressing satisfactorily are observed and mentored by the principal and/or effective peers. Typically, they receive feedback and advice regarding their teaching and classroom behavior management practices. Principals and experienced teachers observe their performance, make recommendations, and help with the creation of personal improvement plans. Some schools provide coaching and training in the course of weekly grade-level planning sessions. These sessions and in-service training are often arranged by experienced teachers.

Amqui's Brenda Steele observes teachers and reviews student progress data daily. She takes notes on what the teachers say and how students respond. The teacher is also asked to evaluate her or his own performance and then meet with the principal. During the meeting, Ms. Steele typically asks questions such as "Why is this student not paying attention?" and "What could you do about it?" She then suggests ways to improve teaching or classroom management that are tailored to the teacher's situation. Other help is provided by teachers from the same grade and by mentor teachers. Ms. Steele occasionally asks the struggling teacher to observe another teacher who is teaching the same lesson.

Teachers say they never feel isolated. Other teachers offer to help them. They attend weekly planning meetings where teachers work together to solve student learning problems. Ms. Steele assigns mentors to new teachers and will tell them whom to observe to get information about teaching procedures. Often, she will demonstrate how to teach a lesson herself.

Collaboration and mentoring are also important elements of scheduled in-service training. Ms. Steele will ask everyone to observe a teacher who has been exceptionally effective in teaching a particular skill. If a teacher has attended a workshop, Ms. Steele will ask that teacher to train others or share what she or he learned with her or his team. At Amqui Elementary, professional development is continuous and focused on producing better teaching and better outcomes.

Collinwood Elementary's Gail Bell and two of her Title I teachers visit classrooms weekly to observe and provide feedback on each teacher's performance. Teachers who need assistance receive coaching and additional resources. In some cases, struggling teachers are paired with a more experienced teacher. In-service training time is used to address improvement needs on a teacher-by-teacher basis.

At Hardy Elementary, administrators do classroom "walk-throughs" followed by teacher meetings at which observations and improvement needs are discussed. A consulting teacher is assigned to any teacher who needs to improve his or her teaching procedures or strategies.

School administrators also meet with teachers at particular grade levels to pinpoint any student learning deficiencies that are discovered in the testing data. Each week, a member of the administrative staff and the consulting teacher meet with grade level teachers to discuss teaching/learning problems encountered by individual teachers or by all students at a given grade level. The educational needs of both low- and high-achieving students are considered. For high-performing students, the question is "Are they advancing fast enough?"

If students in a given class are performing below expectations, Holladay Elementary's Marty Arnold makes classroom observations. Typical problem areas include lesson design, teaching strategies, and classroom management. He takes a coaching approach to improvement and begins with what the teacher is doing right. Holladay's in-service training program is informed by his observations and by the pattern of strengths and weaknesses that are evident in the TCAP data.

At Joppa Elementary, Principal Curtis Wells observes his teachers at least once per month and provides additional feedback on the basis of informal observations. If the teacher's students are having problems, Mr. Wells will make a classroom observation, assign a mentor teacher, and provide in-service training targeted to specific performance problems such as reading instruction, classroom management, or the use of student performance data. He expects teachers to use research-based classroom strategies and resources, and his current staff development goal is ensure that every teacher knows how to use student progress data to make teaching decisions.

Deborah Grasty at North Stewart Elementary tries to observe each teacher every two days! If a teacher's students have low TCAP scores, she focuses on various aspects of how the teacher is delivering his or her lessons: Is the teacher providing practice and testing at least once per week for the skill that is being taught? Is the teacher asking higher-order questions? Is he or she using effective classroom management techniques?

Ms. Grasty provides teachers with immediate feedback and written recommendations on how to improve. New teachers are assigned a mentor during their first three years. Any teacher who has a child with an academic or behavioral problem is invited to come to the weekly meetings of the Student Assistance Team for help. The team typically asks questions about the teacher's teaching and classroom management procedures and suggests alternative approaches. The teacher is asked to come back the next week to report on her or his progress.

The value of mentoring and other forms of teacher assistance provided by the top-performing schools has been shown in several studies. Parsons, Reid, and Green (1993) demonstrated that when teachers were provided with feedback on their teaching methods, their students made greater progress than when the teachers were not provided with feedback. Also, when observers provided regular feedback to teachers on how well they implemented teaching procedures, their students' skills improved more than when those same teachers did not get observer feedback.

Several researchers report that collaboration and teamwork among school staff are widely found in high-performing schools. Also, building-level professional development at high-performing schools appears to be directly linked to the adoption of effective teaching practices (Center for Public Education, 2005). A recent study, however, (Goddard, Goddard, and Tschannen-Moran, 2007) appears to indicate that despite its popularity, some teacher collaboration may only be moderately related to student achievement. The critical factor seems to be the type of collaboration. Tennessee's top performers engage in face-to-face discussions of specific learning challenges and do so on a regular basis.

9. In top-performing schools, principals obtain supplemental budgetary support for the training and materials required to improve teacher performance.

Each of the top schools has been effective in procuring the supplemental resources necessary to ensure adequate progress for all of its students. The help has been in the form of Title I funding, grants, and partnerships with community businesses and parent-teacher organizations. The funds have been used for teacher training, tutoring, computer labs, and other forms of assistance. Hardy, Joppa, and North Stewart require that any new materials or programs be supported by scientifically credible evidence of effectiveness.

Although not a surprising finding, the experience of the top-performing schools is consistent with the often-replicated conclusion that effective schooling can be costly. Adequate resources are essential – especially when new instructional materials and practices are introduced and a number of teachers need to be brought up to speed. Williams and Kirst (2006), for example, found that schools whose principals said their districts provided up-to-date instructional materials and support for supplemental instruction had higher student performance scores.

Additional research evidence pertaining to practices seven, eight, and nine

Practices 7, 8, and 9 are supported by the effective teaching and effective schools literature (Hawley et al., 1984; Marzano, 2000; Scheerens, 2000; Scheerens, 2004). They are the foundations of the accountability and continuous improvement processes that are used by high-functioning schools. In the top-performing schools, principals and teachers work together with a focus on student learning. Data is the guide to decision-making, whether the issue is the recognition of effective teaching, the need for collegial assistance, or the procurement of supplemental resources. Again, data-driven schooling is not new to the educational research literature or the experience of educators, but only recently has it begun to regain the attention of teachers and principals.

10. Top-performing schools regularly inform parents about their child's performance and seek to work with parents whenever children are progressing insufficiently.

Teachers at Amqui School send weekly progress reports to parents. Principal Brenda Steele regularly mails congratulatory postcards to parents: "Your child was a star student at school this week because _____." Amqui also reports each child's annual achievement scores to his or her parents.

Amqui teachers also tell parents what they can do to help their child succeed, such as reading to them for 20 minutes each night or helping them become more organized. They also give students nightly homework assignments.

At Amqui, parents meet with teachers at least twice during each school year. When a child needs extra help, Principal Brenda Steele insists on meeting with parents – and she doesn't take “no” for an answer.

Teachers at Holladay Elementary report student progress to parents every three weeks and Joppa Elementary sends parents grade cards every four and a half weeks. Joppa also invites parents to a support team meeting if a child is having difficulty.

North Stewart sends parents a newsletter each week. Some teachers send parents weekly printouts of their child's grades.

A number of studies have shown that effective schools around the U.S. maintain a high degree of parent involvement. Jesse et al. (2004) surveyed nine high-performing middle schools that served high-poverty Latino students. Parents of these children reported that they were regularly contacted by the schools. According to Carter (2000), a high degree of involvement with school is required of parents whose children attend “no excuses” schools.

Home-school collaboration is a practice with proven effectiveness. In a review of 18 studies that examined home-school collaboration, Cox (2005) found that the schools that regularly communicate with parents via daily notes and frequent student report cards had the best outcomes. In a study of middle and elementary schools, Sheldon and Epstein (2005) found that schools with the greatest improvements in math achievement assigned homework that required parents and children to interact.

11. Top-performing schools survey parents at least annually to assess satisfaction with the school's services.

Collinwood Elementary surveys parents annually while Holladay and Joppa send out parent surveys twice a year. Joppa's surveys address parent support issues and student safety. North Stewart Elementary provides for ongoing feedback from parents through its website.

Numerous studies have shown that parent survey data can play a useful role in maintaining positive home-school relationships. Sheldon (2003) examined the relationship of the quality of school, family, and community partnership programs with student performance on state achievement tests in a group of 82 elementary schools. His definition of partnership programs included arranging for two-way communication channels so that families have several ways to ask questions, obtain information, and give input.

The results seem to indicate that the creation of partnerships was worth the effort. Sheldon (2003) found that the schools that were the best at maintaining open communications had the highest percentages of students scoring at satisfactory or above in reading, writing, math, science, and social studies.

Additional evidence pertaining to practices 10 and 11

As documented by Cox (2005), Sheldon (2003), and similar studies, keeping parents informed of student progress is vital to parent collaboration, and ultimately to student success. It is a belief that is widely held by teachers and supported by research (Jeynes, 2005).

Systematic assessment of parent satisfaction has also been found to be associated with improved student behavior (Pelham et al., 2005). Wolf (1978) argued that parent satisfaction should be seen as a form of social validation for school interventions. In his view, efforts to improve student achievement cannot be sustained without parental acceptance and cooperation; thus, parent satisfaction is a vital indicator of a school's effectiveness.

12. Top-performing schools have school-wide programs that reward positive social and academic student behavior. Principals monitor the success of these programs, collecting data on the number and type of student referrals for problem behavior.

Amqui operates a "Thumbs Up Program." If an entire class has good behavior throughout the day, students receive "thumbs up" pictures. These may be exchanged for incentives such as pencils.

At Collinwood, students earn points for working as a team and following teacher directions the first time they are given. Also, teams are rewarded for achieving reading goals. Students who reach academic proficiency goals are given parties. Students who complete a grade level above their placement win the principal's award.

Hardy uses a school-wide classroom management system called Eagles. Each child has a clothespin with his or her name written on it. Teachers tell their students to move the clothespins up or down on a wall chart that displays the number of eagles that the child has earned that day. The clothes pins are moved up when a child has complied with a teacher request, helped another student, picked up the classroom, or stayed on task. Children receive a daily behavior report that shows the number of eagles they have earned. These reports are sent home to the parents. Eagles are exchanged for prizes.

Hardy also has a "Rapid Rewards" program. Every four and a half weeks, students who earn satisfactory grades for academic and social skills receive special privileges, such as coming to school without a uniform or playing games.

At Holladay, students get points for mastering Accelerated Reading tests. Every six weeks the school holds a recognition assembly. Students' names are posted on the STAR board. Stars are earned for making Honor Roll, good behavior, and doing one's homework. There is a separate board for posting the names of students who have made academic or social improvements.

At Joppa, students earn tickets for positive behaviors such as helping the teacher. The tickets can be exchanged for activities such as movies and popcorn, wearing pajamas to class, or special field trips. Joppa also provides incentives for teachers. Every ticket that a teacher gives a student for positive

behavior is entered into five monthly drawings for \$20. The more tickets the teacher gives students for their positive behavior, the better the odds that the teacher will win a \$20 prize.

North Stewart also has a Positive Behavior Support program. One of the rewards that students can earn is the opportunity to plant flowers with the custodian. That costs 25 tickets. When a student has mastered 150 accelerated math objectives, that student gets to be assistant principal for a half day.

Numerous studies have demonstrated the value of school-wide positive behavior programs. In a survey of exemplary Brownsville, Texas, schools conducted by Hopkins (1999), 100% of school administrators reported that teacher-provided praise for student learning contributed strongly to student success. According to Luiselli, Putnam, Handler, and Feinberg (2005), the key features of school-wide Positive Behavior Support (PBS) programs include 1) setting consensus-driven school-wide behavioral expectations, 2) teaching critical interpersonal skills, 3) providing systematic positive reinforcement for meeting and exceeding performance criteria, 4) monitoring intervention efficacy continuously through data collection and analysis, 5) involving all stakeholders in the formulation of discipline practices, and 6) reducing and eliminating reactive, punitive, and exclusionary strategies in favor of a proactive, preventive, and skill-building orientation. Luiselli et al. (2005) found that elementary students' reading comprehension and math scores increased by 18 and 25 percentile points respectively after only eight months of PBS implementation.

The Evidence Base for Practice 12

School-wide Positive Behavior Support programs have been developed and evaluated over the past 30 years (Lassen, Steele, & Sailor, 2006). They include a variety of components designed to establish and strengthen the social and academic behavior needed for active participation in learning activities. A recent meta-analysis documents the effectiveness of such programs (Marquis et al., 2000).

School-wide behavior management programs are among the best known of evidence-based schooling practices. Those with the strongest empirical support have been developed by practitioners of applied behavior analysis (Baer, Wolf, & Risley, 1968, 1987). Despite their demonstrated effectiveness, however, they are not universally used in schools. Proper implementation is essential to their effectiveness and teachers are not often afforded the necessary training.

Summary and Conclusions

Each of the six schools highlighted in this report has brought about extraordinarily high student achievement gains over the last two years. They are among the highest-performing in Tennessee. In several cases, they were able to achieve these gains despite student populations that included a high proportion of students from low-income families, a known risk factor for school failure.

The principals who lead them were not able to provide the interviewer a formula for success, but the practices and procedures they described all centered around repeated objective measurement of student progress toward objectively stated outcomes – an approach to teaching that has been well known to the educational research community for forty years (Brophy & Good 1986) and one clearly demonstrated by the findings of the massive Follow Through project (Watkins, 1995).

Whether the educational practices identified in these interviews are uniquely responsible for the greater effectiveness of these schools cannot be scientifically affirmed without experimental evidence, i.e., the kind of studies now being gathered by the What Works Clearinghouse,²² part of the National Institute of Education Sciences. What can be said, however, is that these ingredients are being used in some of Tennessee's most effective schools, and the principals of these schools believe they are important factors in the success of their respective schools.

Why these practices are only now being rediscovered will almost certainly be the subject of continuing scholarly debate. What can be safely said, however, is that at least in Tennessee, value-added educational accountability is the key factor in encouraging their apparent resurgence. Without accountability, schools, like other institutions, gravitate toward that which is most comfortable to the institution, not necessarily that which is the best product.

The good news is that Tennessee's value-added database provides an unprecedented opportunity to examine the question of which teaching practices are being used by effective schools, and whether these practices are among the old and discarded or the new and unique. Indeed, the present report is a first small step in uncovering those relationships and, perhaps, a reasonable starting point for schools that seek to improve (Carnine, 1993).

Finally, the findings of value-added research will offer an important window into the effectiveness of the teacher education curriculum. Instead of examining teacher quality issues through the traditional prism of theory and philosophy, the question of which approaches to teaching and which training programs best serve Tennessee's public schools can now be answered by looking at data drawn from real students at real schools. Tennessee would provide an enormous service to the cause of educational improvement on a national scale by applying its TVAAS database to these questions.

Whatever the precise causes of their success, the schools that are the subject of this report have clearly found shared principles and practices that yield the student persistence to necessary to produce academic mastery. All of them collect frequent data on student performance and make changes in how they operate when students are not learning. In the words of Amqui Elementary's Brenda Steele, "We do what it takes."

22 <http://ies.ed.gov/ncee/wwc/>

References

- Baer, D.M., Wolf, M.M., & Risley, T.R. (1968). Some current dimensions of applied behavior analysis. *Journal of Applied Behavior Analysis, 1*, 91-97.
- Baer, D.M., Wolf, M.M., & Risley, T.R. (1987). Some still-current dimensions of applied behavior analysis. *Journal of Applied Behavior Analysis, 20*, 313-327.
- Barth, P., Haycock, K., Jackson, H., Mora, K., Ruiz, P., Robinson, S., et al., (Eds.). (1999). *Dispelling the myth: High poverty schools exceeding expectations*. Washington, D.C.: Education Trust
- Binder, C., & Johnson, K.R. (1991). Morningside Academy: A private sector laboratory for effective instruction [and] about Morningside Academy. *Future Choices, 3*, 61-66.
- Bloom, B.S. (1988). Helping all children learn well in elementary school – and beyond. *Principal, 67*, 12–17.
- Brophy, J. (1982). Successful teaching strategies for the inner-city child. *Phi Delta Kappan, 63*, 527-530.
- Brophy J., & Good, T. (1986). Teacher-effects results. In Wittrock, M.C. (Ed.) *Handbook of research on teaching*. New York: Macmillan.
- Carnine, D. (1993). Facts over fads. *Education Week*, December 8, p. 40.
- Carr, E.G., Dunlap, G., Horner, R.H., Koegel, R.L., Turnbull A.P., Sailor, W., et al.,(2002). Positive behavior support: Evolution of an applied science. *Journal of Positive Behavior Interventions, 4*, 4-17.
- Carter, S.C. (2000). *No excuses: Lessons from 21 high-performing schools*. Washington, DC: Heritage Foundation.
- Center for Public Education. (2005). *Research review: High-performing schools*. Retrieved from <http://www.centerforpubliceducation.org>
- Cheng, Y.C., & Tsui, K.T. (1999). Multimodels of teacher effectiveness: Implications for research. *Journal of Educational Research, 92*, 141-150.
- Cox, D.D. (2005). Evidence-based interventions using home-school collaboration. *School Psychology Quarterly, 20*, 473-497.
- Edmonds, R. (1979). Effective schools for the urban poor. *Educational Leadership, 37*, 15-27.
- Education Consumers Foundation (2007). Tennessee's value-added assessment: Why it is important and how it works. Retrieved from http://education-consumers.com/ecf_vaaa_about_tvaa.php

- Elliott, S.N., & Fuchs, L.S. (1997). The utility of curriculum-based measurement and performance assessment as alternatives to traditional intelligence and achievement tests. *School Psychology Review, 26*, 224-233.
- Ericsson, K. A., Krampe, R. Th., & Tesch-Roemer C. (1993). The role of deliberate practice in the acquisition of expert performance. *Psychological Review, 100*(3), 363-406.
- Fuchs, L.S., Deno, S.L., & Mirkin, P.K. (1984). The effects of frequent curriculum-based measurement and evaluation on pedagogy, student achievement, and student awareness of learning. *American Educational Research Journal, 21*, 449-460.
- Fuchs, L.S., & Fuchs, D. (1986). Curriculum-based assessment of progress toward long-term and short-term goals. *Journal of Special Education, 20*, 69-82.
- Goddard, Y.L., Goddard, R.D., & Tschannen-Moran, M. (2007). A theoretical and empirical investigation of teacher collaboration for school improvement and student achievement in public elementary schools. *Teachers College Record, 109*(4), 877- 896.
- Greenwood, C. R. (1991). Longitudinal analysis of time, engagement, and academic achievement in at-risk and non-risk students. *Exceptional Children, 57*, 521-535.
- Gresham, F.M. (2004). Current status and future directions of school-based behavioral interventions. *School Psychology Review, 33*(3), 326-343.
- Guskey, T.R. (1990). Cooperative mastery learning strategies. *Elementary School Journal 91*, 33-42.
- Halverson, R., Grigg, J., Prichett, R., & Thomas, C. (2005). The new instructional leadership: Creating data-driven instructional systems in schools. Paper presented at the Annual Meeting of the National Council of Professors of Educational Administration, July 2005, Washington, D.C.
- Hawley, W. D., Rosenholtz, S., Goodstein, H. J., Hasselbring, T. Good Schools: What Research Says about Improving Student Achievement. *Peabody Journal of Education, 61*(4), 1-178.
- Holland, J.G. (1960). Teaching machines: An application of principles from the laboratory. *Journal of the Experimental Analysis of Behavior, 3*, 275-287.
- Hopkins, M.S. (1999). Effective school practices: What works. Paper presented at the International Conference on Effective Schools: ED 435777, October 1999, Houston, TX.
- Jesse, D., Davis, A., & Pokorny, N. (2004). High-achieving middle schools for Latino students in poverty. *Journal of Education for Students Placed at Risk, 9* (1), 23-45.
- Jeynes, W. (2005). A meta-analysis of the relation of parental involvement to urban elementary school student achievement. *Urban Education, 49*, 237-269.
- Kulik, C.L., Kulik, J.A., & Bangert-Drowns, R.L. (1990). Effectiveness of mastery learning programs: A meta-analysis. *Review of Educational Research, 60*, 265-99.

- Lassen, S.R., Steele, M.M., & Sailor, W. (2006). The relationship of school-wide positive behavior support to academic achievement in an urban middle school. *Psychology in the Schools, 43*(6), 701-712.
- Lindvall, C.M., & Blovin, J.O. (1967). Programmed instruction in the schools: An application of programming principles in individually prescribed instruction. *The Sixty-Sixth Yearbook of the National Society of the Study of Education, part II*. 217-254. Chicago, NSSE.
- Luiselli, J.K., Putnam, R.F., Handler, M.W., & Feinberg, A.B. (2005). Whole-school positive behaviour support: Effects on student discipline problems and academic performance. *Educational Psychology, 25* (2-3), 183-198.
- Marquis, J.G., Horner, R.H., Carr, E.G., Turnbull, A.P., Thompson, M., Behrens, G.A., Magito-McLaughlin, D., McAtee, M.L., Smith, C.E., Ryan, K.A., Doolbah, A. (2000). A meta-analysis of positive behavior support. In R.M. Gersten & E.P. Schiller (Eds), *Contemporary special education research: Syntheses of the knowledge base on critical instructional issues* (pp. 137-178).
- Marzano, R. J. (2000). *A new era of school reform: Going where the research takes us*. Aurora, CO: Midcontinent Regional Educational Laboratory.
- Parsons, M.B., Reid, D.H., & Green, C.W. (1993). Preparing direct service staff to teach people with severe disabilities: A comprehensive evaluation of an effective and acceptable training program. *Behavioral Residential Treatment, 8* (3), 163-185.
- Pelham, W. E., Massetti, G. M., Wilson, T., Kipp, H., Myers, D., Newman Standley, B. B., Billheimer, S., and Waschbusch, D. A. (2005, August). Implementation of a comprehensive schoolwide behavioral intervention: The ABC program. *Journal of Attention Disorders, 9*, 248 - 260.
- Ralph, J. & Fennessey, J. (1983). Science or reform: some questions about the effective schools model, *Phi Delta Kappan, 64*, pp. 689-694.
- Scheerens, J. (2000). *Improving school effectiveness*. Paris: UNESCO, IIEP, Fundamentals of Educational Planning series no. 68.
- Scheerens, J. (2004). *Review of School and Instructional Effectiveness Research*. Paris: UNESCO, Background paper for EFA Monitoring Report 2005 (www.efareport.unesco.org)
- Sheldon, S.B. (2003). Linking school-family-community partnerships in urban elementary schools to student achievement on state tests. *The Urban Review, 35*, 149-165.
- Sheldon, S.B., & Epstein, J.L. (2005). Involvement counts: Family and community partnerships and mathematics achievement. *The Journal of Educational Research, 98* (4), 196-207.
- Walberg, H.J., & Haertel, G.D. (Eds.). (1997). *Psychology and educational practice*. Berkeley, CA: McCutchan Publishing.

- Wang, M.C. (1992). *Adaptive education strategies: Building on diversity*. Baltimore, MD: Paul H. Brookes Publishing.
- Wang, M.C., & Zollers, N.J. (1990). Adaptive instruction: An alternative service delivery approach. *Remedial and Special Education, 11*, 7-21.
- Watkins, C. L. (1995). "Follow Through: Why didn't we?" *Effective School Practices, 15*(1), 5; also see http://www.education-consumers.org/research/briefs_0201.htm.
- Waxman, H.S., & Walberg, H.J. (1999). *New directions for teaching practice and research*. Berkeley, CA: McCutchan Publishing.
- William, D., Lee, C., Harrison, C., & Black, P. (2004). Teachers developing assessment for learning: Impact on student achievement. *Assessment in Education, 11*, 49-65.
- Williams, T., & Kirst, M. (2006). School practices that matter. *Leadership, March/April*, Burlingame, CA: Association for California School Administrators).
- Wolf, M.M. (1978). Social validity: The case for subjective measurement or how applied behavior analysis is finding its heart. *Journal of Applied Behavior Analysis, 11*, 203-214.



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