High-Stakes Testing: Can Rapid Assessment Reduce the Pressure?

Stuart S Yeh, University of Minnesota-Twin Cities
High-Stakes Testing: Can Rapid Assessment Reduce the Pressure?

STUART S. YEH
University of Minnesota

This article presents findings about the implementation of a system for rapidly assessing student progress in math and reading in grades K–12—a system that potentially could reduce pressure on teachers resulting from high-stakes testing and the implementation of the No Child Left Behind Act. Interviews with 49 teachers and administrators in one Texas school district suggest that the assessments allowed teachers to individualize and target instruction; provide more tutoring; reduce drill and practice; and improve student readiness for, and spend more time on, critical thinking activities, resulting in a more balanced curriculum. Teachers reported that the assessments provided a common point for discussion, increased collaboration among teachers to improve instruction and resolve instructional problems, and supported both new and experienced teachers in implementing sound teaching practices. The individualized curriculum and rapid feedback on progress reportedly gave students the feeling that they were successful and in control of their own learning, engaging students who previously disliked reading and math—including dyslexic children and children in special education—reducing stress, and improving student achievement. These findings are interpreted through Corbett and Wilson’s framework for understanding why high-stakes testing often has negative effects and why the implementation of rapid assessment systems could reduce unintended negative consequences of testing.

The passage of the No Child Left Behind Act (NCLB) in January 2002 has put tremendous pressure on schools to improve student achievement. By the 2005–2006 school year, all students in grades 3–8 must be tested on an annual basis. Schools judged to be “in need of improvement” will be subject to increasingly severe requirements that may include staff replacement. Critics claim that there are unintended negative consequences of this high-stakes, high-pressure approach—that curricula are narrowed and dumbed down to the skills and knowledge that are tested (Corbett & Wilson, 1991). However, some teachers report that high-stakes testing has led them to emphasize higher order thinking skills rather than drill and practice:
You hear so many people say we’re teaching to the test when actually we’ve changed our whole mode of instruction to . . . better teach the kids. We do a lot of higher order thinking skills and not so much drill. . . . They’ve put the hands-on aspects of learning into the performance task . . . I don’t think there’s anything wrong with that. . . . That’s good instruction. We’re trying to teach children strategies and . . . higher order thinking skills. How can that be wrong? (Wilson & Floden, 2001, p. 209)

This suggests that there are ways to improve student achievement while maintaining high-quality instruction and a focus on critical thinking activities. But what factors mediate testing’s effects? Previous research suggests that two key conditions moderate the degree to which testing has positive or negative influences on the quality of teaching: the stakes—formal consequences for students and schools that are linked to test results, and pressure—communications and informal consequences intended to induce staff to increase test scores (Corbett & Wilson, 1991).

**STAKES AND PRESSURE**

In a study of 300 school districts in two states, negative effects on teaching and learning reported by teachers and administrators occurred when both stakes and pressure to raise test scores were high (Corbett & Wilson, 1991). Positive impacts on teaching and learning occurred when stakes were high but pressure to raise test scores was low (Corbett & Wilson). High stakes and low pressure can occur when students must pass a test to graduate from high school but almost all students pass easily. This type of test is not likely to generate concern among staff or parents or pressure to change the curriculum. Under conditions of high stakes and low pressure, schools responded in a positive way (Corbett & Wilson). Educators in these schools accepted the test as a valid indicator of student learning and used it as the basis for making improvements in instruction while maintaining a balanced curriculum. Schools had adequate time to respond to student weaknesses indicated by test results. Under this condition, teachers implemented strategies for improving learning in a broad, balanced way that led to a rise in test scores without having to teach directly to the test. Teachers were most likely to adopt, adapt, or invent more effective instructional practices as the best means of improving student learning (Corbett & Wilson).

These findings suggest the importance of reducing pressure on teachers and school administrators to distort curriculum and instruction. Up to now, however, pressure has been conceptualized as an external force that is beyond the control of teachers and school administrators. But a reexamination suggests that this conceptualization is incomplete. The implementation
of some type of system that enables teachers to be more effective and enables students to pass the test more easily could reduce pressure to “dumb down” the curriculum.

**CURRICULUM-BASED MEASUREMENT**

Curriculum-based measurement (CBM) is a type of curriculum-embedded student assessment system that is under the control of teachers and school administrators. By directly assessing the extent to which students learn what is taught, CBM aims to help teachers evaluate and improve the effectiveness of their instruction (Fuchs & Deno, 1994). In special education classrooms, teachers using CBM demonstrated improvements in instructional quality and student achievement relative to control group students (Fuchs, Deno, & Mirkin, 1984; Fuchs, Fuchs, Hamlett, & Stecker, 1991; Jones & Krouse, 1988; Wesson, 1991) with effect sizes of 0.70 standard deviations (Fuchs, Fuchs, Hamlett, & Stecker, 1991). CBM students liked frequent testing, believed that it helped them to learn, saw themselves as more responsible for their learning, and were more likely to attribute their success to personal effort, compared with similar students who were randomly assigned to a control group (Davis, Fuchs, Fuchs, & Whinnery, 1995).

In a quasi-experimental study, Fuchs, Fuchs, and Hamlett (1994) found that CBM helped teachers to manage instructional time efficiently by immediately identifying students who were not making progress and quickly evaluating the efficacy of various intervention strategies. In three experiments, teachers who received computerized CBM skill analyses for their students designed more specific program adjustments that resulted in higher student achievement compared with teachers who implemented CBM but did not receive the skill analyses (Fuchs, Fuchs, & Hamlett, 1989; Fuchs, Fuchs, Hamlett, & Allinder, 1991; Fuchs, Fuchs, Hamlett, & Stecker, 1990). The development of computer software simplified logistics and training, greatly reduced the time required to implement CBM, and improved teacher satisfaction with the process (Fuchs, Fuchs, Hamlett, & Hasselbring, 1987; Fuchs, Hamlett, Fuchs, Stecker, & Ferguson, 1988).

**FEEDBACK STUDIES**

The research on CBM suggests that feedback to teachers and students regarding student progress may have significant positive effects on student engagement and achievement. Reviews of research on feedback support this conclusion. A meta-analysis of 21 studies in which all experimental treatments involved frequent assessment (two to five times per week) found an average effect size of 0.7 $SD$ (Fuchs & Fuchs, 1986). This is equivalent to
raising the achievement of the average nation to the level of the top five nations (Black & Wiliam, 1998). A second review found effect sizes ranging from 0.4 to 0.7 (Black & Wiliam). A meta-analysis of 131 studies found an average effect size of 0.4 (Kluger & DeNisi, 1996).

What explains the variability in outcomes? Two meta-analyses found that feedback, such as praise or criticism, that directs attention to the learner’s ego can have negative effects, suggesting that nonjudgmental feedback is more effective (Cameron & Pierce, 1994; Kluger & DeNisi, 1996). Feedback was more effective when it involved testing (effect size = 0.6) and was presented immediately after a test (effect size = 0.7; Bangert-Drowns, Kulik, Kulik, & Morgan, 1991). These results suggest the nature of effective feedback systems: nonjudgmental, involving testing, and presented immediately after a test. Black and Wiliam (1998) pointed out that these results suggest that testing can promote learning as well as sampling it, “contradicting the often quoted analogy that ‘weighing the pig does not fatten it’” (p. 51). However, Fuchs and Fuchs (1986) noted that the greatest benefits may occur if teachers use the assessment information to individualize instruction for students.

PURPOSE OF THE PRESENT STUDY

The literature reviewed above suggests that curriculum-embedded assessments that provide frequent, rapid feedback regarding student progress can improve teaching effectiveness and potentially reduce pressure to dumb down the curriculum. However, the literature has four general limitations. First, the studies primarily examined the effect of rapid assessment on student achievement rather than the quality of curriculum and instruction. Although test scores may increase, the crucial question concerns what happens to the quality of education. Second, it is striking that none of the studies involved systematic interviews with the teachers and administrators who must decide how to react to rapid assessment results. Those decisions determine the quality of instructional activities that are delivered to students (e.g., drill and practice or critical thinking activities). Thus, it would be useful to ask them about those decision-making processes. Third, none of the studies advanced an explicit theory of the process by which rapid assessment achieves its effects. How does frequent testing influence teaching and learning? What happens in classrooms in which frequent testing is implemented? What is the process by which frequent testing results in improved achievement? And what do teachers and principals observe regarding the effects on the quality of teaching and learning, outcomes that are not synonymous with student achievement as measured by test scores? Are the effects positive or negative? Fourth, the studies primarily focused on student achievement rather than student engagement. How does frequent testing influence engagement and motivation to learn?
At the heart of these questions is the need for a better understanding of teachers’ decision-making processes in response to rapid assessment results. Once researchers understand how teachers make instructional choices in response to frequent testing, they can better understand the effect on the quality of curriculum and instruction and the quality of student engagement and achievement. This demands a qualitative approach that focuses on interviews with teachers and administrators; they are the key actors who must translate rapid assessment results into instructional activities, and they are the most experienced observers of the instructional choices that follow from rapid assessment results.

The present study asked teachers and administrators to clarify their decision-making process, how they use rapid assessment results, and how those results shape their instructional choices in the context of high-stakes testing. The study draws upon the judgment of teachers and administrators who are familiar with the day-to-day impact of rapid assessment systems on their classrooms and students. This article includes a review of quantitative studies that suggest that the use of the particular type of rapid assessment system investigated here can be effective in improving math and reading test scores. The review includes studies of the particular Texas district that is the focus of this report.

The participating district implemented a commercially available type of rapid assessment system districtwide, thus permitting investigation of the potential effects of rapid assessment systems that are practical on a district-wide scale and readily available for use. The results suggest that, in the view of the teachers studied, the use of this type of assessment may have unusually broad, positive effects on the quality of instruction, student engagement, and student achievement. These findings suggest both theoretical principles and practical implications regarding the use of rapid feedback and its potential to improve student achievement and offset anticipated negative consequences of the large-scale testing mandated by the NCLB Act. The discussion focuses on the underlying principles demonstrated when teachers have rapid access to information about student progress. These principles are general, although they are demonstrated through data obtained when teachers used a specific type of rapid assessment software.

BACKGROUND

RAPID ASSESSMENT PROGRAMS

Reading Assessment and Math Assessment are curriculum-embedded assessment programs developed by the Rapid Assessment Corporation. Rapid
Assessment Corporation has also developed the District Assessment program based on the same principle of rapid feedback to students and teachers regarding student performance. Approximately 60,000 schools use one or more of the programs, with the goal of improving student achievement (Nunnery, Ross, & Goldfeder, 2003).

District Assessment is a system for administering district tests that are customized by client school districts to be aligned with district and state curriculum standards and the state-mandated test. The tests are often administered on a quarterly schedule and have the goal of informing instruction and allowing teachers to reteach material as needed. Each client selects test items from large item banks and assembles them into appropriate tests. Students take the tests exactly the way they would take the state-mandated test. Tests are machine scored, and the results are available the next day. Reports may be organized by building, classroom, teacher, student, or instructional objective.

Reading Assessment

Reading Assessment is a curriculum-embedded assessment program designed to alert teachers to learning difficulties and encourage teachers to provide highly targeted individual tutoring or small group instruction. It is composed of Reading Assessment software and a system for monitoring each student’s reading comprehension and book level through points that are awarded based on the level and number of books read by each student. The Reading Assessment software program is designed to encourage students to read books at the appropriate level of difficulty. First, books in the school’s existing library are labeled according to reading level. Second, students select books to read based on their interests and their reading level, according to the results of the STAR Reading test, a norm-referenced computer-adaptive test with a test-retest reliability of .94 (Renaissance Learning, n.d., *STAR Reading*). This helps to avoid the frustrating experience of choosing a book that is too difficult. After finishing a book, students take a computer-based quiz, unique to each book, that is intended to monitor basic reading comprehension (Rapid Assessment Corporation has created more than 28,000 quizzes). The Rapid Assessment system for monitoring student progress involves teachers checking the status of each student in the class: book level, number of books read, progress toward reading goal, comprehension scores, and type of book (nonfiction or fiction). All the information is on the computer and instantly updated as soon as students complete a quiz. Reports may be organized by building, classroom, teacher, or student. After teachers identify areas in which students need help, Reading Assessment provides appropriate lesson plans, for
example, to teach reading comprehension skills, identify the main idea, or explain the difference between fact and opinion.

Reading Assessment was implemented districtwide in McKinney, Texas (the district sampled in the current study) starting in 1999. An evaluation during the 1999–2000 school year found that 3,649 students in grades 1–5 improved by 7 normal curve equivalent (NCE) points (approximately 0.9 GE above a stratified, nationally representative sample of students) on the STAR Reading test (Smith & Clark, 2001).

A second evaluation that used a rigorous matched treatment-control pretest-posttest design involving 891 students in the McKinney school district found that two cohorts of Reading Assessment students demonstrated significantly higher achievement over a 3-year period than 911 controls in matched schools who did not participate in Reading Assessment, with effect sizes ranging from .17 to .22 SD in grade 5 on the state-mandated Texas Assessment of Academic Skills (TAAS) test (effects for two eighth-grade cohorts were not statistically significant; Nunnery et al., 2003).

Reading Assessment was implemented statewide in Idaho starting in 1998. An evaluation during the 2000–2001 school year found that effects in grades 5–9 were small (Renaissance Learning, 2002). However, 10,381 students in grades 1–4 improved 4.5 NCE points on the STAR Reading test (approximately half a grade equivalent above the performance of a stratified, nationally representative sample of students over the equivalent time period), with the bulk of the improvement in first grade. On average, each student reportedly read over 40 books during the 7-month period of the evaluation.

A key element of Reading Assessment is that students choose the books that they want to read from a selection of authentic literature rather than basal readers. It appears that the ability to choose may improve student engagement and achievement (Dunlap et al., 1994; Dunlap & Kern, 1996).

**Math Assessment**

Similar to Reading Assessment, Math Assessment is a curriculum-embedded assessment program designed to alert teachers to learning difficulties and encourage them to provide highly targeted individual tutoring or small group instruction. Math Assessment is composed of software and a system for monitoring student progress. The software program provides individualized sets of math problems for each student. At the beginning of the school year, students take the STAR Math test, a norm-referenced computer-adaptive test with a split-half reliability of .94 (Renaissance Learning, n.d., *STAR Math*). Based on the results and the appropriate grade-level curriculum, the teacher selects specific learning objectives for each student. The
Math Assessment software prints an individualized set of practice problems for each student. Students complete the problems, bubbling their answers on a machine-scored answer sheet. Students scan their answer sheets on a small Scantron machine in the classroom. The computer updates the teacher’s database, flags areas in which students need help, and prints a report and a new set of practice problems for the student, incorporating new problems and reviewing concepts in which performance remains weak. It is then up to the teacher to provide tutoring or small-group instruction to address those areas. Computerized assessments make it easy for teachers to monitor student progress and intervene when necessary as a coach, tutor, or facilitator. A significant advantage of rapid assessment is that it provides data that can be used by teachers to systematically catch students who are having difficulty and then to provide individual tutoring regarding specific areas of weakness. The computerized assessments basically automate the process of generating individualized sets of math problems and scoring them, so students primarily work independently until they need help. The computer does all the work of flagging students who need help, allowing teachers to focus their energy on tutoring. The Rapid Assessment programs provide instant data on each student’s progress, facilitating rapid feedback and intervention by the teacher. Rapid Assessment also prompts teachers regarding lessons for teaching specific math strategies as needed. This type of feedback has been found to help teachers to move beyond standard instructional routines (Fuchs, Fuchs, Hamlett, & Stecker, 1991).

In a rigorous matched treatment-control pretest-posttest evaluation involving 898 students in the McKinney, Texas, school district (the same district as in the current report; see below), Math Assessment students demonstrated significantly higher achievement over a 3-year period than 959 controls in matched schools who did not participate in Math Assessment, with an average effect size of .20 SD in grade 5 and .17 in grade 8 on the state-mandated TAAS test (Nunnery et al., 2003).

In a quasi-experimental evaluation involving 495 fourth- and fifth-grade students in a large urban school district, Math Assessment students demonstrated significantly greater growth in achievement relative to comparable students in the same schools and in the same district who did not participate in Math Assessment, although the program was implemented for only half of the school year (Spicuzza et al., 2001).

In a second quasi-experimental evaluation of Math Assessment involving 111 third- and fourth-grade students in a large urban school district who had failed state or district tests, students gained 2.7 NCE points in the 9 months prior to receiving Math Assessment, 5.5 NCEs after receiving Math Assessment for 16 days, and only 1.7 NCEs in the 9 months thereafter (Spicuzza & Ysseldyke, 1999). In other words, student gains doubled during the short duration of the program, then leveled off after the program.
was discontinued, suggesting that the program caused the improvement in outcomes.

In a third quasi-experimental evaluation involving 201 fourth- and fifth-grade English Language Learner (ELL) students in a large urban school district, participants in Math Assessment gained 6.7 NCEs, significantly greater than the 3.9 NCEs gained by comparable ELL students who did not participate in the program (Teelucksingh, Ysseldyke, Spicuzza, & Ginsburg-Block, 2001).

In a large quasi-experimental evaluation involving a nationwide sample of 2,201 students in grades 3–10, participants in Math Assessment gained 1 to 1.4 grade equivalents (GE) during the 5 months of intervention. The gains by participants exceeded the gains of the comparison group by a margin ranging from 0.3 GE in sixth grade to 0.7 GE in fifth grade over one semester (Ysseldyke & Tardrew, 2002).

In a quasi-experimental evaluation involving 711 students in grades 4 and 5 in a large urban school district, participants in Math Assessment gained 6.7 NCEs, more than double the 2.7 NCEs for comparable students not participating in the program (Ysseldyke, Spicuzza, & McGill, 2000).

**RESEARCH QUESTIONS**

Although this series of investigations provide quantitative evidence that the Rapid Assessment programs may improve student achievement, questions remain, such as (a) What is the process by which rapid assessment achieves its effects? (b) What effects do teachers see on student self-esteem and engagement? and (c) What effects do teachers see on the quality of curriculum and instruction?

**METHOD**

The methodological approach used in this study involved interviews with teachers and administrators, with the goal of understanding how their decision-making processes influenced curriculum and instruction.

**PARTICIPANTS**

Participants included 37 teachers, 5 principals, 6 assistant principals, and 1 librarian in 2 high schools, 2 junior high schools, and 4 elementary schools in the McKinney, Texas, school district. McKinney was selected because it was one of the first districts in the United States to implement District Assessment, Reading Assessment, and Math Assessment districtwide and thus represented an opportunity to investigate the effects of a curriculum-embedded assessment system that is potentially feasible to implement.
districtwide. Demographically, at the time of data collection, one third of students enrolled in McKinney were minorities; 20% received free or reduced-price lunches. Teachers and administrators who participated agreed to be randomly selected to represent the entire range from grades 2–12. All participants had bachelor’s degrees, and approximately one third also held master’s degrees. Years of experience in the classroom ranged from 1 to 29. Approximately 60% of the participants were female, and 40% were male.

DATA COLLECTION

Each participant was interviewed individually for 50 minutes using a structured interview protocol consisting of questions about the use of student progress information from the rapid assessment system, changes in instructional decision making in response to this information, and perceived effects on student engagement in reading and math. Interviews were audio-recorded and transcribed. Interviewees were asked for detailed explanations of their implementation of District Assessment, Reading Assessment, and Math Assessment, and their views of the consequences—including possible unintended consequences—of testing and the use of the Rapid Assessment programs. For example, in the category of implementation, teachers were asked to “Describe what I would see in your classroom when students are working on the Rapid Assessment programs—both what you are doing and what the students are doing.” Regarding the consequences of using the Rapid Assessment programs, teachers were asked, “As a result of using the Rapid Assessment programs, have you changed the amount of time you spend on critical thinking, drill and practice, or project-based activities?” Development of the interview protocol was informed by four rounds of previous interviews with approximately 160 teachers and principals in four states regarding the effects of state-mandated testing.

Multiple methods were used to triangulate findings from the interviews. Observations were conducted in 10 randomly selected classrooms to assess the implementation of Reading and Math Assessment and effects on student engagement. In each of these classrooms, 3–5 randomly selected students were interviewed regarding their views of Reading and Math Assessment. Documents were reviewed, including assessment reports and curriculum and instruction materials.

DATA ANALYSIS

In keeping with established methods of qualitative research (Bogdan & Biklen, 1992; Glaser & Strauss, 1967; Miles & Huberman, 1994; Strauss, 1987), data analysis followed the three-part modified constant comparative
method. Each interviewer asked follow-up questions to make certain that the meanings that respondents intended were understood. As interviews were conducted, emergent findings were checked through follow-up questions with subsequent interviewees. Interviews were transcribed and coded to identify primary themes. The themes were identified jointly by two raters and cross-checked by a third researcher. Discrepancies were resolved through discussion. The emergent theme analysis followed the grounded theory approach (Glaser & Strauss). Interview excerpts presented in this article illustrate the range of views expressed by participants and suggest hypotheses about how rapid assessment works.

A DUAL PROCESS

What is the process by which rapid assessment may achieve effects? Two themes dominated interviewee responses. First, teachers found that rapid assessment made them more effective by automatically flagging students who needed help and areas in which they needed help, promoting immediate instructional adjustments, providing a common benchmark for discussion, and thus encouraging collaboration among teachers to improve instruction. The constant flow of diagnostic information was viewed by teachers as promoting continual improvement, more reflection about how to improve instruction, less isolation, and more accountability, operating through teachers’ sense of professionalism. The teachers reported that improvements in student achievement could be attained with average or novice teachers and were less dependent on having extraordinary teachers.

The second theme is that the type of rapid assessment system implemented in McKinney automatically individualized instruction in reading and math—ensuring that students were exposed to books and math problems that were at appropriate levels of difficulty—and provided rapid feedback on progress in a way that, according to teacher interviews, motivated their students.

1. “MORE EFFECTIVE” TEACHING

The teachers interviewed described several ways they felt their effectiveness was aided by rapid assessment.

*Immediate instructional adjustments*

First, the system allowed teachers to identify and address areas of student weakness quickly. Unlike the state test results, District Assessment provided immediate feedback and an item analysis. The item analysis helped teachers to pinpoint areas in which students need help. The immediate results and
the item analysis helped teachers to reteach areas that were not adequately addressed. Computerized rapid assessment freed teachers to focus on improving the quality of instruction rather than the mechanics of student assessment. A high school history teacher explained that the advantage of rapid assessment, compared with the state test, is that teachers can use the results to make rapid instructional adjustments:

What I love with Rapid Assessment is you see results immediately. You know exactly how each student is performing and exactly what elements of the Texas Essential Knowledge and Skills that they’re deficient in. Immediate feedback is huge. If we’re able to gather that information in a midterm test, then we can go back, reteach, and cover material that we feel wasn’t addressed. That’s essential. [You can’t do that with once-a-year, state-mandated, test administration?} No, all that really does is give you a snapshot of how your year has gone, and it’s too late at that point.

If results are not received quickly, they have no impact on instruction. In contrast, a middle school assistant principal explained that the ability to use test results to make rapid instructional adjustments gave teachers ownership of the data and empowered them to address areas of weakness:

The district where I was before, nothing was really done with the assessment. . . . It had no impact on instruction whatsoever. It was just something that we were doing because central office told us we had to. Here, we are able to get our results immediately. When we download it, the teachers are in charge of it. They have ownership of it, because they’re able to immediately score the test and find out where the problems are. And so, they can turn it around right away—we had our staff development the next day. It was that quick. So the strength of District Assessment is that it’s more frequent, and we get immediate results. I think it’s a fabulous tool for our teachers.

Rapid assessment revealed gaps in learning and helped teachers to attack those gaps by making immediate instructional adjustments. Teachers and administrators felt that frequent assessments allowed teachers to systematically address areas of student weakness and improve student achievement. Without frequent assessments, teachers and students have difficulty targeting weak areas. A second-grade teacher described the effect on student achievement:

If they’re used properly, I think that frequent assessment enables you to determine where your child is, each individual child and what they
need to work on. My previous school was a middle school. By the time [the state-mandated test] came around, the kids had no idea what they needed to work on, the teachers had no idea what they needed to work on. They didn’t know their strong areas, they didn’t know their weaknesses and, in that particular middle school, [our test scores] were low every year.

Although rapid assessment was used in the short run for remediation, the information also stimulated teachers to redesign instruction so that future students would not need remediation. A high school assistant principal explained how this improved the effectiveness of instruction:

Especially for the kids who are hard to teach, it just makes the gaps more clear, and it allows you to attack them in a very intentional way. If you didn’t have this data, you might not know that was a problem, and you’d just move on. And then, they start to think, “Well, next year how can we teach it right from the beginning? How can we teach it differently?” As time goes on, you’re able to make better decisions about what you’re teaching. If you go to schools that have this in their culture, they make decisions on a weekly basis about what they’re doing, rather than on a 9-week basis. Once you start thinking this way, it’s a much better way of teaching.

More collaboration to solve instructional issues

Second, a majority of teachers (73.5%) reported that partly as a result of the District Assessment tests, teachers are teaming up to identify and solve instructional issues. Teachers reported that the rapid assessment results provided a common benchmark that stimulated dialogue and problem solving regarding areas in which students were weak. A middle school language arts teacher talked about the effect on teacher collaboration:

Big time. Big impact. We plan together, we assess together, we’re collaborating together because of this. [In other schools] you’re a lone wolf. You could hide if you wanted to, or you could shine if you wanted to. There was very little collaboration going on.

Administrators used the assessment information to improve organizational effectiveness. A principal of a Title I elementary school talked about the impact of rapid assessment in helping him to implement flexible grouping and improve teaching and learning:
It stimulates more discussion and it also gives me the opportunity to look at who’s doing a good job. And if someone’s doing something really well, I say, “In Dr. Smith’s class, all of the kids understood concept A, but next door only 50% of these kids get it. But over in the second class, all of the children understood concept B while only 50% of the kids in Smith’s class understand it.” Then I’ll [regroup the kids]. The only way I can manage the students’ learning as well as teachers’ learning is if I’m able to utilize that data in a way that changes the way we do business. Change what you’re doing. That’s what I use the data for.

Rapid assessment pushed teachers to ask for help, work together, and share ideas. A middle school teacher felt that the assessment results led to more conversation, teaming, and sharing of ideas:

I think because of the pressure that they may feel from the 9-week assessment—it’s forcing those teachers that have been alone in their rooms to get out and ask for help or ask for ideas. It’s helped the teaming and the sharing of information, because they realize that we all need to work together. So I feel like that’s been a positive thing, that other teachers have created ideas and they’re willing to share because they realize that District Assessment reports reflect on all of us. So I think it’s been positive.

**Continuous improvement**

Third, teachers reported that frequent rapid assessments stimulated continuous adjustment and improvement of instruction, allowed teachers to improve student achievement in a systematic, proactive way throughout the school year rather than reacting to last year’s test scores, and reduced stress. An elementary school special education teacher explained,

Frequent assessments give you more information, so you’re able to adjust your instruction, which means you’re meeting the needs of those students. The stress level at the end of testing time was much higher at [my previous] school. The other school was missing all of that input and not only couldn’t make the adjustment, but when it was time to take the state test, it was just, you know, “we hope we’ve done everything right.” Here, we *know* we’ve done everything we can by the time you get to the end of the year assessment. You adjust your instruction either for the group or for the individuals who need that, to fill in those gaps. It was much more difficult to bring about
improvement [at my previous school] because there really wasn't a cycle of continuous improvement. Whereas here, when you have a lot more feedback, you have more opportunities to improve. And as you cycle through that process year after year, I think we get better and better. In my job, working with students with learning differences, it’s almost every day that I learn something new. “Ah-ha! I found a new way to show a kid how to do this.” You just never quit learning.

More reflection

Fourth, rapid assessment reportedly caused teachers to be more reflective about their teaching, more consistent, and more accountable for teaching students to higher academic standards. A middle school principal explained,

[District Assessment has a] positive effect on the curriculum in our district. It has caused teachers and administrators to learn more about what the State of Texas means to “summarize a variety of culturally diverse texts.” It’s caused us to investigate, what does that mean to “summarize,” what does “culturally diverse text” mean? It caused us to go deeper into those things. Previously, we would oversimplify. We would just say, “oops—we have to teach summarization.” It’s caused us to be more like curriculum experts, even at the teacher level. Now, we are not just relying on the quality of teacher that you happen to get.

Teachers reported that they felt compelled to react to rapid assessment results by adapting and improving instruction and addressing areas of weakness. A high school assistant principal explained how the rapid assessment results led to higher standards for instruction:

If we didn’t have this, we wouldn’t know what kids are missing—we’d just go on thinking that they got it. This makes us stop and look at what students got and what they missed. Once you find out that they’re missing it, it’s just not natural to [ignore] that. It forces you to make changes to what you’re doing, rather than just merrily going along and teaching the curriculum in a chronological order. That’s a change with how traditionally it’s done.
Less isolation

Fifth, teachers reported that rapid assessment reduced teacher isolation by stimulating departmentwide analyses of learning difficulties. A middle school language arts teacher talked about the effect on teacher accountability, operating through teacher feelings of pride and professionalism rather than coercion:

Absolutely. I think that prior to Rapid Assessment, teachers could much more easily isolate themselves in their classroom and were not held as accountable for what the students were learning. [Now] we’re saying, “Not only do my students have to meet the standards, but so do yours. Therefore, how can we help each other to be successful rather than just speculating, perhaps, that we are successful. [Whereas with District Assessment,] if you have 90% answering the question wrong in your classroom, you have to examine that. I think the accountability factor is very important. It’s an analytical process that we go through on a 9-week basis in our departments, our grade levels, about the District Assessment assessments. And we use those. I, for one, don’t want my students to perform very low in an area this 9 weeks and have that come up again next 9 weeks. I want to look at that and see why. I want to look good. I want to be a good teacher.

More accountability

Sixth, interviewees reported that rapid assessment improved teacher accountability. A principal of a Title I elementary school talked about the effect of rapid assessment in providing a benchmark that holds teachers accountable for student learning:

It’s like anything else, whatever you expect you need to inspect, and I see where having the assessment has just made a difference in our school district. It’s certainly made a difference in our test scores because we are held accountable. It gives us a real good opportunity to see, “Well, how well are we doing at teaching?” And the only thing that tells me how well I’m teaching is to look at how well my students are learning and if my students aren’t learning then I’m not doing a good job of teaching and my motto is that, “You have not taught until someone learns.”

The principal argued that rapid assessment provides information needed to analyze problems, improve teaching, maintain student achievement
throughout the year, and avoid reflexive test-driven reactions to low scores on the state-mandated test:

Absolutely. You’re test driven until you take the results that you’re given and do something to enhance the learning of the students. I ask the teachers to tell me, “What trends do you see in this data? What is this data telling you?” I provide the time for them to do that, and then we set goals: What are we gonna do with this data to keep us from just being a test-driven district? I wouldn’t have that if I didn’t have District Assessment . . . I see that test as a positive because it holds me responsible and holds my feet to the fire—that I’m going to do what I’m paid to do.

Less dependence on extraordinary teachers

Seventh, teachers and principals reported that Reading Assessment and Math Assessment provided classroom management tools for monitoring student progress and supporting effective teaching practices. Daily feedback quickly alerted teachers to problems and helped teachers to target specific skills with specific students. The rapid assessment system allowed teachers to focus on teaching rather than on the logistics of grading and assessment. Rapid assessment led teachers to analyze and address learning difficulties and helped teachers to qualify as model teachers. A middle school assistant principal talked about the effect of rapid assessment results in stimulating teachers to reflect on the nature of students’ difficulties and how they might be addressed:

With Reading Assessment, the teachers are having to step back and analyze, What is this child doing? If this child is scoring low on a quiz, what is the problem? It’s making them be better reading teachers. Does he need to take notes while he’s reading? Does he need to go back and reread the chapter? Do I need to work with him in a small group when he’s reading his nonfiction? It’s making him analyze where the problems lie.

Reading Assessment generates leveled book libraries and frequent testing of reading comprehension, so these elements of effective teaching are less dependent on having extraordinary teachers. A master teacher in a Title I elementary school explained,

The school where I was before this did not have any of the Rapid Assessment programs. We developed a system that is eerily like Rapid Assessment, only it did not have the computer portion to test
comprehension. But it was very dependent upon the teachers. The Rapid Assessment program incorporates [independent reading] into the daily teaching. It’s not just up to the teacher. And it creates a level playing field where students who may not be reading at home are given that extra attention to all the facets of reading here at school. If you don’t have that at home, this really does level the playing field.

The Rapid Assessment program provided the type of checklist that new teachers need to monitor students who need help. A third-grade teacher explained,

I’d say [to new teachers], “you need to have a list of those students that cannot round, you need to be working with those.” They’d say, “Where do I get that?” They don’t know how to do it. I really think that the frequent assessments [using the Rapid Assessment programs] are necessary so we know who is lacking what at all times. So we’re not surprised when they take that district assessment and that TAAS or TAKS at the end of the year.

Teachers reported that the combination of individualized curricula and rapid assessment motivated students to read, improving comprehension and fluency for many students with little effort by the teacher, and allowed the teacher to focus on students who needed extra help. The success of this system supported both novice and experienced teachers in being more effective. A second-grade teacher explained,

A lot of what I see the Rapid Assessment programs doing that I would have to teach without that program is the comprehension. Huge piece. I basically don’t [need to] teach comprehension. These kids have it. I mean, you teach them how to do it, but you don’t have to dwell on it. Five or six kids had trouble with fluency, but half of the class is reading 130 to 150 words per minute [far beyond the state goal of 90] by the end of second grade. That, I attribute purely to the [Reading Assessment] program. The more you read, the better you read, the faster you read. And that’s just a huge chunk. It’s neat because you can focus with that small group that needs it. And the rest of them, through the [Reading Assessment] program, it’s being handled. So there are major chunks of comprehension and fluency that you really don’t have to dwell on because of the program.

Another elementary teacher felt that individualized curricula and rapid assessment can have a dramatic impact on teaching, standards and expectations:
It’s totally changed the way I teach—it takes it to a whole different level. Within the first 9 weeks, [three nonreaders] were reading. Your expectations are high across the board. You teach to that. You know what they can do. You expect more, because they can sit down with a book and they can comprehend what’s in that book. And I think it is all attributable to what they’ve done for 3 years now in this program.

Without leveled book libraries and rapid assessment of reading comprehension, teachers may not know how to intervene to help children with their reading. Rapid assessment helps teachers and students to identify and address learning difficulties and to hold students accountable for their learning. According to teachers, individualized curricula and rapid assessment make teachers more efficient, freeing time for creative, higher level thinking activities. An elementary school special education teacher explained,

I think it gets back to the fact that you can individualize it. The old way, everybody got the same thing, whether they needed it or not. And so, you spent your time on big quantities of stuff that may not be what everyone needs. [With Rapid Assessment] you, as a teacher, know which kids you need to spend time with. It makes you more efficient. And not having to go through all the grading—we don’t have to do that. So, what you’ve got is this program that’s giving you a lot of good information about what the student needs. [And because you’re more efficient] you can do a lot of the more creative, higher level thinking things.

Teachers reported that rapid assessment improved student preparation for critical thinking activities and reduced the amount of time needed for remediation. In addition, the assessments included challenging items that required students to apply critical thinking skills. As a result, teachers reported less drill and practice and more emphasis on critical thinking. For example, a fifth-grade teacher commented,

Yes, definitely less drill and practice. I don’t do much of that at all; in fact, almost everything that I send home is based on word problems and critical thinking and higher level thinking. Because they have those application-type questions in Math Assessment.

A principal of a Title I elementary school felt that individualized curricula and rapid feedback systems supported master teaching practices.
When I saw the program come in, I thought, “Oh man, just another program.” But then when I got to the training, I thought, “This is what we do, but it’s organized, it’s pulled together.” Rapid Assessment is a whole lot of common sense, if you really want to know the truth. I’ve done many of the strategies as a classroom teacher. Rapid Assessment is just things that I did as a master teacher, but it manages and organizes it, and prior to that, we didn’t have that organization and management piece.

II. MOTIVATED STUDENTS

As described above, the first process by which rapid assessment reportedly achieves its effects is by making teachers more effective. However, interviewees described a second, motivational process. In the view of teachers and administrators, the feedback provided by the Reading Assessment and Math Assessment programs had positive effects on student self-esteem and engagement, and achievement, particularly for low-achieving students. All the teachers reported that they use Reading Assessment, Math Assessment, or both. Of these teachers, the vast majority (93.9%) reported that the impact of these programs has been positive, citing improvements in motivation to read and do math for all students, including students in special education and students with dyslexia. Teachers traced the improved motivation to the individualized curriculum, rapid feedback of results, and opportunities for students to feel successful. Teachers felt that the Rapid Assessment feedback gave children more control over their learning, and this control gave them enjoyment. Improved student motivation reportedly reduced behavioral problems and led to improved reading and math achievement.

The classroom observations and student interviews corroborated teacher reports regarding student engagement. In each classroom, approximately 80% of the students were observed to be reading independently, working independently on math problems, or performing self-assessments, according to the Reading and Math Assessment programs. The rest—20%—were observed working with the teacher on specific reading or math skills. Thus, the Reading and Math Assessment programs appeared to be well implemented in those classrooms, and students appeared to be engaged and on-task. A majority (85%) of students interviewed responded affirmatively to the question, “How do you like the Rapid Assessment program?” Notably, several students said they “love it,” or “it’s my favorite part of the day.”
Motivated readers

Teachers and administrators reported that the Rapid Assessment programs motivate students to read more books. A high school history teacher felt that rapid feedback changed the culture of his school:

When they began the program here 3 years ago, my observations were that you never saw students just before school sitting in the hall or before school sitting on a ledge somewhere reading. That just never happened. It's changed the culture of the school. They have their books with them all the time.

A principal of a Title I elementary school traced the effect to rapid feedback:

I can think of a child who had come in the middle of last school year and the parents said, this child—it was his fourth year—had never read. But for some reason, that instant feedback on how he was doing just gave him a charge. It made him want to participate in the program, and he became a big lover of books and that's what I've seen Rapid Assessment do for children. The mother came to tell me that he asked for a book for his birthday. And he had never asked for a book before.

An indicator that children are motivated by the Reading Assessment program is their eagerness to talk about books, authors, and genres. A middle school language arts teacher described the impact of the program on her students:

I think it's a very successful program. I think it encourages students to read a lot more. The students talk about their books, they talk about authors that they appreciate, they talk about the genre that they're reading or if they just discovered a new genre. They talk about the characters and how they relate to their lives, and some students will connect with the characters in the novel, and it helps them to resolve issues in their own lives.

An indicator that children are motivated is that they take their books home and ask their parents to listen as they read. A third-grade bilingual teacher talked about the impact of the Reading Assessment program on her son after he transferred to a school in the McKinney district:
When my son was at another school, I would say, “Where’s the books that you need to read?” He would say, “I forgot, they’re in my locker.” When I transferred him over here, it was such a difference. He was wanting to read on his own, he really wants to read, you just see it. You see them sharing books with each other—when you see that, you know they are just reading for fun. The parents that I’ve spoken with will tell me, “Oh my child never used to be like that, I mean I never saw anything in his backpack.” Now they’re seeing books in their backpacks and they’re hearing, “Mom, come listen to me read.”

Teachers reported that rapid feedback can have dramatic effects on student motivation. A fifth-grade teacher in a Title I elementary school talked about the effect on one of his students:

I’ve had one student that flunked fourth grade last year. He’s not passing any subject except for reading. I asked him at the first of the year, “What’s your hardest subject?” and he said, “My hardest subject’s reading.” Well, now if you ask him—I mean it’s only been a few months—he says his favorite subject is reading. It’s just totally a switch. He’s always going down to the library to get new books.

According to teachers and principals, children are checking out more books from the library. A principal of a Title I elementary school traced this to the impact of the Rapid Assessment programs:

I [compared the number of] library books checked out, and we had quadrupled [the number] for the year. Children were reading like never before. The most important piece is that it makes children want to read. If nothing else, reading is a big topic of discussion in McKinney. Student comprehension is a big topic among administrators in our school. Reading and reading levels, that wasn’t something that we talked about before Rapid Assessment. I believe that Rapid Assessment has made the difference.

Independent learners

Teachers felt that rapid feedback motivated students to immediately seek the source of their errors, promoting independent learning. One teacher talked about the effect as “creating lifetime readers and mathematicians”:

The students just absolutely love the programs. With the reading they get that immediate feedback through the [Texas Essential Knowledge
and Skills] TEKS report, and the same way with the math. After they scan, a TEKS report tells them which ones they missed, and students can go back and look to see, “Was it something I should’ve added, when I subtracted?” So students are becoming independent learners, and they’re just having such great success with it. Students are loving math more; they’re loving reading more. It’s creating students who are lifetime readers and not just school-time readers. And lifetime mathematicians instead of just school-time mathematicians. I’ve had kids who hated math or hated reading, and as long as I’m intervening and making sure they’re successful, their attitude changes.

Teachers traced the impact of rapid assessment to the effect of feedback in fostering emotional commitment to work effort. An 11th-grade history teacher explained, “They wanted, they craved that immediate feedback, they had to know immediately. That’s the big part of it, getting that emotional buy-in from a student, they’re going to be emotionally tied to that result.”

Teachers felt that the Rapid Assessment feedback gave children more control over their learning, and this control gave them enjoyment. A fourth-grade teacher in a Title I elementary school explained,

I know the students enjoy that freedom, that ability to be in control of their own learning in reading and math. When I say, “Okay, we need to do Math Assessment,” they get excited because it’s usually on their own level, they get to go at their own pace, they’re not pushed, they’re not rushed, and they get to manage themselves. I think that’s why they enjoy it.

Teachers were extraordinarily enthusiastic about the effect of the Rapid Assessment programs on student motivation. Teachers felt that rapid feedback can foster pride and excitement about achievement. Students “love” the immediate feedback and control that the assessment programs gave them over their learning. Teachers felt that the key to improved student motivation and engagement was that the Rapid Assessment program allowed students to monitor their own success, progress from one level to the next, and see when they are successful. Teachers felt that this feedback gave students pride in their achievements. A middle school language arts teacher talked about the effect on one of her Hispanic students:

I have a Hispanic student. And she is a wonderfully bright child. She loves the fact that her reading is improving and she’s challenging herself to raise her reading level. She started out on a fourth-grade level of reading this year. She’s reading up into mid-fifth grade now.
She has challenged herself to do that, and I can see that in her demeanor, that this is an important issue to her. It’s a sense of pride, that she’s actually elevating herself on a weekly basis with her own challenges for reading.

Consistent with teacher reports that rapid feedback and individualized curricula have improved student motivation, a middle school math teacher reported that with the program, she observed fewer behavior problems:

Sue used to be a behavior problem, and she would just come in and be like a little terror. And toward the end of the school year, she started calming down, because she wanted to work on [the Math Assessment] program. She knew that “this is something I can do.” So I’ve gotten very unruly kids, and then by the time school is over at the end of the year, they’re well-behaved.

[But do you think that the program contributed to this change in behavior?] I think so. Because they have to learn to be independent, and they’re not depending on you to sit on top of them to get them to work. And their grades have improved, too. Those kids work better if there is a structure and they know what to expect. You know that about Christmas-time, they’re going to calm down. And then, it’s just easy going from there on out, because you don’t have to put up with that attitude that they’re throwing at you.

Teachers believed that the effect of rapid assessment was dramatic. An elementary school teacher described the effect of implementing the Reading Assessment program on student achievement:

The first year that I was at the other school, they were really struggling with their state test, especially reading. When I went there that year, their reading and math scores were 69 and 78. After the one year that I had been there and we had implemented the Reading Assessment software, our scores went up to 93/93. After that, we went up to 95/97, and then, 97/98. It had a dramatic effect.

All but one teacher (98%) reported that Reading Assessment and Math Assessment had a positive impact on student motivation. Teachers felt that students were empowered by the knowledge that they were strong in certain areas and weak in other areas, and if they focused on the weak areas, they could improve their reading and math skills. Thus, students were less likely to make global judgments about being “stupid” or “not good at math.” A principal of a Title I elementary school explained,
They love it, it’s just incredible. The math thing is just incredible to me. The Math Assessment, if you skip it, they just go nuts. They are so motivated by that piece. . . . What I think it does is it empowers the kids. They know what their weaknesses are, know what their strengths are, know what they’ve got to work on: “I know I need to work on this to make progress.” We had kids before that just thought they were bad at math—it’s overwhelming, but if you can see where your weaknesses are and how you can shore those up, then it’s a whole lot more manageable. It’s exciting, it’s interesting to talk to the kids, because they get really fired up about math and the reading too. They can tell you exactly what books they’ve read. They’ll talk about authors. Whereas before they just thought they were stupid. They didn’t realize that it had anything to do with [their effort]. I really think it makes a huge difference. The reading just happens, it’s just so automatic that it just happens.

**Opportunities for success**

Teachers traced the impact of the Rapid Assessment programs to the motivational effect of experiencing repeated incremental success. A ninth-grade algebra teacher explained it as “kids feed on success.”

Kids feed on success, and anything that allows them to be successful, they get excited about, and that program can be developed and operated in such a way that students are going to have success. You start them at a point where they’re going to have success, and that is a big motivator. [Whereas before] they were not having success, [they felt that] “I can’t do this, I’m a failure, I’m wasting my time,” but if they have success, they begin to change that thought.

Teachers felt that the combination of individualized curricula and rapid feedback was especially helpful for low-achieving students, breeding success and confidence by breaking objectives into manageable increments and hiding achievement differentials. A middle school math teacher explained,

Particularly for low-performance students, they feel they can have success. Let’s say I have a seventh-grader who really only performs at a fifth-grade level. So I have him assigned to the fifth-grade library. He really doesn’t know that; the other kids don’t really know that but he’s feeling success, because he’s moving through the objectives successfully. So it gives him confidence. Success breeds success; that gives him confidence in everything.
A recurring theme was the positive impact of the individualized curricula and rapid assessment on children’s self-esteem. Teachers talked about the impact on students who previously did not like reading or math. An elementary school teacher traced the effectiveness of the program to the way it provided incremental opportunities for children to experience success:

I’ve had students who’ve come in with low self-esteem because they know they are working below grade level. What I like is that Reading Assessment supports all stages of reading. I think it has a positive effect just because there is so much opportunity for them to have success and feel good about themselves. And once they reach that first goal, they’re determined to make the next goal as well. The same with math. I’ve had students who did not like math. But after they’ve seen that they can [meet] this goal, then they’re excited to do it. I think it’s just so interesting to see that. I have had only positive experiences with it. I had many students say, “Oh, please give us just 5 more minutes,” or “Can I stay in from recess? I want to read instead of go outside and play,” or “Can I take my book to lunch, so I can read during lunch?” They want to continue reading. They don’t want to stop. They’ve had success, and they’ve finally found some good books at their level that they’re comfortable with and they’re successful. They love that. The math—they’re so excited about it and have so much success with it. So you’ll have lots of kids wanting to do more, because it is fun and exciting and motivating to them.

Teachers reported that children in special education were also motivated by rapid feedback on incremental gains. A second-grade teacher talked about the progression that occurred.

I’ve got a special ed child who can barely read on his own. The more he got into the program, he wanted to become part of the program. Now he sits at the computer, and he’s pretty much running the show. And that is such a big thing—he just has confidence now, “I can do something.”

Rapid feedback can also motivate children with dyslexia. A second-grade teacher talked about the effect of rapid feedback in building her student’s self-confidence, independence, and intrinsic motivation to read:

My dyslexic child was just so defiant. So we started using the program. Well, he just took off. . . . Now he’s gone 5 to 6 weeks, building that confidence through using the program. He’s doing it totally on his own. At reading time, out comes that book, he’s going to the library,
he’s right back. This week alone, he read six books and he’s got 100% accuracy. And I truly think it’s all because of that program, just the way it’s set up that it triggers that intrinsic motivation. Everyone wants to be a winner, and when you see it in black and white, you see yourself progressing, a light bulb goes on, “Hey, look at me. I can do it.”

Teachers felt that a big part of the Rapid Assessment program’s success was that differentials in achievement among students were hidden in a way that allowed each child to feel successful. A second-grade teacher explained,

My special ed child is actually in a first-grade library. Everyone else is in the second-grade library. But he doesn’t know he’s in the first-grade library. [The program] spits out [problems] just like everyone else’s, but it’s on a first-grade level. He can do it on his own and he is achieving such success with no outside help. So his sense of accomplishment is just huge. He will work through that first-grade library and then start on the second grade, and never know that he’s any different than the other kids. So you have a huge impact there, really huge impact.

Teachers of special education and emotionally/behaviorally disturbed (EBD) students felt that the Rapid Assessment programs helped them to handle the logistical task of meeting the needs of different students. By doing so, the programs freed the teachers to work more effectively. Teachers reported that the combination of individualized curricula and rapid feedback helped them to keep students with learning disabilities with their nondisabled peers. An elementary school special education teacher talked about this as “a wonderful thing”:

For students with a learning disability, [our aim] is keeping them with their nondisabled peers to the maximum extent possible. And Rapid Assessment makes that happen. I just got a student who has a learning disability and is in fourth grade, but is functioning at the second-grade level in math. That student can be with his buddies, in his classroom, doing Math Assessment. He’s just in a different [Rapid Assessment] library. It’s just wonderful because it keeps that kid with his peers. They like it. I think the biggest thing is every child here in a Rapid Assessment program has the opportunity to be really successful. Every child did not have that chance at my other school, because there was no mechanism to do that. There’s no way a teacher can individualize instruction to that extent. And this is a way to individualize instruction in reading and math. It’s amazing. It’s a wonderful thing.
QUALITY

In the judgment of teachers and administrators, what was the effect of rapid assessment on the quality of curriculum and instruction? A majority of teachers (87.8%) reported that rapid assessment had a positive impact on curriculum and instructional practices. Two teachers (4.1%) expressed concerns about too much testing; the rest were noncommittal. Overall, teachers felt that there was a positive effect on the curriculum, with less drill and practice and more emphasis on problem solving and critical thinking. Teachers felt that the Rapid Assessment programs reduced pressure to teach to the test by providing the information needed to achieve steady student progress without using worksheets. Teachers felt that rapid assessment reduced the need for remediation, increased the time available for critical thinking activities, and improved student preparation for critical thinking. Although the Rapid Assessment programs reportedly have more of an impact at the elementary and middle school level, they can also be effective at the high school level in shrinking learning gaps between high- and low-achieving students. As a result, two thirds of all interviewees supported statewide funding of McKinney’s system of quarterly district assessments.

NOT TEACHING TO THE TEST

Teachers argued that they did not “teach to the test,” explaining that they were able to prepare students for the state test while focusing on the intended curriculum. A third-grade teacher in a Title I elementary school described the difference and attributed her ability to maintain breadth in the curriculum to the effect of the Rapid Assessment programs:

I think they’ve had a positive effect. Where I was before, we actually taught to the test. We don’t do that here. We teach what’s in the curriculum, and we don’t focus on the tests because we feel that with the independent reading time, we’re teaching them skills that they will be able to use throughout their life and not just teach to the test. We’re trying to teach the skills to enable them to pass the test, but having taught at a district where all we did for the entire year was teach to the test, this is very different and I really enjoy it. [I think people would say District Assessment is actually designed to help get students ready for the state test, and if you have that as your assessment every 9 weeks and you are focusing on those areas where students are not doing well, it would seem like you are really focusing on getting students ready for the state test.] You’re getting them ready for the test, but in a different way because you’re teaching them the skills in good literature instead of constantly doing
worksheets that look exactly like the test. You’re teaching towards the test, instead of to the test, using good literature where they’re able to do more critical thinking about what they’re reading and making those connections to real-life situations.

According to teachers, learning activities involved concrete hands-on activities designed to improve understanding rather than worksheets. A third-grade teacher in a Title I elementary school described the type of activity that she uses:

We do more hands-on activities, not just your basic problem. We create graphs, where the kids take surveys and create charts and graphs. We’re doing a probability exercise where we asked how many people drink milk, how many do you think are going to drink chocolate milk. We made a graph and then we’ll take that graph and they ask questions about it. So we’re teaching things in math, but we’re trying to start out with the concrete and go through stages of pictures so they get a better understanding because when they see it and they do it themselves, it’s so much easier for them to remember than when they’re just looking at a graph off of another sheet of paper. It makes more sense to them.

Rather than drill and practice, learning activities were designed to connect to students’ prior knowledge. The third-grade teacher explained,

We’re looking to see what the problem is and trying to set goals and come up with ideas on what we could do to help them improve—different types of questions, teaching it in a different way, connecting to their prior knowledge. A lot of them haven’t even been out of McKinney, so I draw pictures, like I’ll start out here with the house: “Here’s grandma’s house.” And then, “Okay, from here to here, that’s 362 miles.” And I relate it to when I go home to visit my mother. “Well, I drive, and I drive so far and then I have to stop. So I’ve gone from here to here and this was 70 miles. But now you know, I stop to eat lunch, so I get back in my car and I have to go further.” And so I try and put it in terms of something that’s meaningful to them, something that they will understand.

MORE CRITICAL THINKING

Teachers were asked whether they had changed the amount of time devoted to critical thinking, drill and practice, or project-based activities, or whether they had eliminated important activities from their curricula as a
result of using District Assessment. None of the teachers reported reducing the amount of critical thinking activities, while 20.4% reported increasing time spent on those activities. Although critics of testing are concerned that it dumbs down the curriculum, interviewees felt that rapid assessment helped them to be more efficient and created opportunities for them to spend more time on critical thinking activities. Teachers argued that this allowed them to maintain breadth and balance in the curriculum and to avoid narrowing the curriculum to material covered on the state test. An elementary school assistant principal explained,

I think the Rapid Assessment programs have given us the opportunity to spend more time on critical thinking because the test is taken, and the feedback is very quick, and we can use the results very quickly to reteach children. That gives teachers much more time to really develop children’s critical thinking skills. They have more time for planning, instead of having to grade tests. It just freed up some time.

Teachers felt that rapid assessments designed to reflect a challenging state assessment encouraged them to focus on problem solving rather than computation. A middle school teacher explained,

I’m giving them problem solving questions, where before, I may have [used] more computation. So the 9-week assessments have made me reflect on how I test my students, not so much my instruction, but just how I check for their understanding and their mastery of the subject. [What aspects of the assessment cause you to do that?] The 9-week assessments are set up to be a reflection of what we expect the TAKS to be. Which is applying the computation. The students are going to have a situation, a problem, and they’re going to be doing the same math, but instead of just giving them three times four, they have to associate it with a real-life situation. That’s been an adjustment because I’ve always thought, teach them the math, and then we’ll teach them to problem solve. So, it’s made me think I need to make sure that we incorporate the problem solving as we teach.

Only 6.1% of teachers reported that they increased the amount of time spent on drill and practice. Only 6.1% reported that they eliminated important activities from their curricula as a result of using District Assessment. Teachers felt that careful planning avoided the need to sacrifice project activities. Only 8.2% reported that they reduced project-based activities, although many teachers reported that nonessential projects were replaced with more focused activities. A recurring theme was the need for teachers to be more selective about project activities, focusing on those that
are truly educational, not merely enjoyable. Teachers reported that rapid assessment helped them to target instruction and improve effectiveness in a way that freed time for enrichment activities. A middle school principal explained,

I think it helps us use a rifle approach versus a shotgun approach. We know what the kids do and do not know. You can specialize your instruction and meet the kids where they are. You know what it is that they need help on. At the same time, you don’t have to bore them to death with things that they already know. It frees you to spend time on things that you need to spend time on and be able to do enriching things on the items that they already know.

SUPPORT FOR STATEWIDE FUNDING OF DISTRICT ASSESSMENT

An indicator of teachers’ summary judgment of the usefulness of the rapid assessment systems is that two thirds of the teachers (67.3%) reported that they would support statewide funding of McKinney’s system of District Assessments every 9 weeks, followed by the state-mandated TAKS assessment at the end of the school year. They felt that, without state funding, districts that do not have rapid assessment systems would be severely disadvantaged. Interviewees thought that rapid assessment helped teachers to work more effectively and to avoid cramming for the end-of-year state test. A middle school language arts teacher thought this would be a good investment, stating, “I think it would be incredible—that’s definitely money well spent. Very much so. Very much so. That just seems like a no-brainer. If the state could do it, most definitely. Most definitely.”

A high school history teacher thought that incorporating rapid assessment into state-mandated testing programs would make state testing more useful and would improve teacher buy-in.

Incorporating the elements of the District Assessment type program would certainly make state testing more useful. I think it’s all any teacher asks for is, “Give me the tools I need to do what I need to do to facilitate learning.” And so anytime a teacher sees that sort of benefit coming from a program, I think you’re going to see huge teacher buy-in.

Overall, 49% of teachers supported the idea of breaking the state assessment into four quarterly assessments (30.6% were undecided). Teachers felt that the state assessment would be more useful as a diagnostic tool if it provided quarterly snapshots. Although critics of testing worry about the increased stress of additional testing, interviewees felt that increasing the
frequency of assessment would help to make them more routine. A 10th-grade English teacher felt that this would reduce the stress of testing:

I think that would be wonderful. It would relieve stress because you could focus on those objectives, and once those were mastered, you’d have a sense of relief that those were done and we can move on to something else. Instead of waiting till the very end of the year and just hoping that they’re going to remember it all. I think students would do better. I think it would show a better understanding of what students know.

NEGATIVE EFFECTS

Although interviewee responses were overwhelmingly positive, there was one major problem with the particular software used by McKinney: poor quality control resulted in incorrect grading of a significant number of Math Assessment items. Incorrect grading caused frustration among students and teachers. Some teachers also reported problems in printing reports. However, these problems appear to be correctable and do not appear to be inherent in rapid assessment.

IMPLEMENTATION

Principals and teachers felt that the success of the Rapid Assessment programs depended on leadership by principals, careful implementation by teachers, and support from administrators. Proper implementation required careful planning to fit the Rapid Assessment activities into the school day, careful attention and timely intervention to make sure students benefited from using the programs, and follow-up by principals on the reports that were generated by the system to ensure that teachers were implementing the programs properly. Many teachers were skeptics, at least at the beginning. According to administrators, positive results helped to convert teachers, but strong leadership is necessary to maintain program implementation until teachers can see the results. A middle school assistant principal explained,

Teachers have gotten on board when they’ve seen the results and seen kids be successful and be excited. They’ve seen it work, and now they’re getting on board. In the beginning, they did not. They had to analyze their own report for me, and then I would respond and give it back to them. Whereas before, I was just running the reports, analyzing them myself, and giving it to them. Well, they were just
throwing it in the trash because it didn’t mean anything. So, there’s a lot of uncomfortable feelings, and then lots of conversation. Every week, they would turn them in, I would respond, back and forth, back and forth. Finally, when they saw the results, that’s when they got on board.

CONCLUSION

Advocates of high standards and state-mandated tests aligned to those standards argue that standardized tests are needed to improve the quality of public education (Jennings, 2000; Smith & O’Day, 1990). However, critics argue that the pressure of testing causes teachers to dumb down the curriculum, reduce critical thinking activities, rely more heavily on drills and worksheets, and reduce the quality of education (Corbett & Wilson, 1991; Madaus, 1988; M. L. Smith, 1991; Smith & Rottenberg, 1991). What is puzzling is the evidence that testing sometimes has positive effects and at other times negative effects (Corbett & Wilson). Corbett and Wilson’s study suggests that positive effects occur when stakes are high and pressure is low, while negative effects occur when both stakes and pressure are high. However, Corbett and Wilson concluded that most situations are characterized by high stakes and high pressure, resulting in negative effects. What is missing is an understanding of how pressure may be reduced so that testing has positive effects on curriculum, instruction, and student motivation and achievement. The results of this study suggest that it may be possible to reduce the pressure and negative effects of testing by implementing rapid, diagnostically useful student assessments. What are the processes by which rapid assessment achieves its effects? This study suggests that there are two processes.

INDIVIDUALIZED INSTRUCTION

First, the assessments allowed teachers to individualize and target instruction, provide more tutoring, reduce drill and practice, and improve student readiness for, and spend more time on, critical thinking activities, resulting in a more balanced curriculum. Thus, researchers should not always assume that testing will have negative effects on curriculum and instruction. The results of this study suggest that, in the judgment of teachers and principals, rapid assessment can have a positive effect on the quality of both curriculum and instruction. The majority of teachers and administrators in the sample strongly believed that rapid assessment allowed them to improve the quality of education provided to students in McKinney and to counteract pressures to increase drill and practice and reduce critical thinking activities in order to prepare students for the state test. The ability
to individualize and target instruction reportedly made teachers more effective and efficient, reducing the need for student remediation, raising the level of preparation for critical thinking activities, and freeing up time to spend on critical thinking and enrichment activities. Paradoxically, more assessment—of the right type—may be better assessment. Rapid assessment may offer a way for principals and superintendents to balance the demands of the NCLB Act to improve student achievement with the desire to maintain depth and balance in curriculum and instruction. At the federal and state levels, policy makers may wish to provide funding to implement rapid assessment in districts that otherwise could not afford it, or to direct district staff to existing sources of funding.

ENGAGED STUDENTS

What were the effects on student engagement and quality of learning? The data from McKinney suggest a second process through which rapid assessment may improve student achievement: individualized curricula adapted to each student’s needs and abilities, plus rapid feedback on progress, may be highly effective in improving student engagement and motivation to learn. Teachers reported that the feedback provided by rapid assessment gave students the feeling that they were successful and in control of their own learning, engaging students who previously disliked reading and math (including dyslexic children and children in special education) and reducing stress and improving student achievement. As Elmore (2004) noted,

> People, in general, enjoy doing what they perceive themselves to be good at, and avoid doing that which they perceive themselves to be unsuccessful at. Low efficacy elicits low engagement; high efficacy elicits high engagement. A successful incentive structure, then, is one that draws the student and the teacher into situations in which they build efficacy and agency. (p. 285)

Individualized curricula ensure that students encounter learning tasks that are within the zone of proximal development—not too easy and not too difficult. Rapid feedback regarding progress tells students that they are successful, helping to build self-efficacy. Students who feel successful can therefore enjoy learning. The importance of student control was established as far back as 1966, with the publication of the Coleman Report. Of all the student attitudinal variables, “sense of control of the environment” was most strongly related to student achievement (Coleman et al., 1966). This result was replicated by other researchers who focused specifically on measures of student control of academic achievement. Brookover, Beady, Flood, Schweitzer, and Wisenbaker (1979) and Brookover et al. (1978)
created a scale of “student sense of academic futility” and found that this measure was the most important predictor, explaining over one half of the variance in student achievement. Teddlie and Stringfield (1993) replicated the results of these studies using both the student sense of futility scale and scales measuring external and internal locus of control in an academic environment (Crandall, Katkovsky, & Crandall, 1965).

Additional studies suggest that strengthening early academic performance strengthens children’s beliefs that they can control their performance. Musher-Eizenman, Nesselroade, and Schmitz (2002) measured the academic performance and beliefs of fourth- and sixth-grade children over time. The results suggest that “there is a feedback loop between performance and control beliefs, with high performance leading to subsequent perceptions of control” (p. 545). In McKinney, rapid assessment reportedly helped to improve student performance that then strengthened student perceptions that they could control their performance.

Research also suggests that over time, this feedback loop strengthens academic performance. A longitudinal study of 8,802 eighth-grade students found that early academic achievement was by far the strongest predictor of achievement in 12th grade. Path analysis indicated that early achievement influences later achievement primarily by increasing students’ sense of personal control (Ross & Broh, 2000). The link between personal control and later academic achievement is supported by a meta-analysis of 78 research studies (Kalechstein & Nowicki, 1997) and path analyses suggesting that children’s perceived control over their academic performance predicts future academic achievement (Keith, Pottebaum, & Eberhart, 1986; Skinner, Wellborn, & Connell, 1990). This explains the observations by teachers in McKinney that “success feeds on success.” As explained by Skinner and her colleagues (1990), “When children believe that they can exert control over success in school, they perform better on cognitive tasks. And, when children succeed in school, they are more likely to view school performance as a controllable outcome” (p. 22).

Research suggests that improvements in achievement and feelings of personal control may foster student engagement and resilience. Both path analysis and an experimental study involving children aged 9–11 suggest that their perceptions of academic competence and control predicted intrinsic interest in schoolwork and preference for challenging school activities (Boggiano, Main, & Katz, 1988). A study of 1,803 low-income minority high school students found that student engagement is an important component of resilience, defined by the subset of low-income minority students who were academically successful and completed high school (Finn & Rock, 1997).

In McKinney, the key was that students read books and solved math problems at their ability levels and received immediate feedback on their
efforts. Because book and math levels were tailored for each student, students generally experienced success. Success relates to confidence, self-esteem, and motivation to read books and solve math problems. The implication of this finding is that it may be possible to improve student engagement and achievement despite factors that are important but difficult to change: cultural differences regarding the value of education, differences in funding and resources, differences in teacher skills, expectations and rapport with students, and so on. What is under the control of teachers and administrators are curriculum and instruction. This study suggests how those factors can be adapted to improve student motivation and achievement.

Interviewees reported that the process of improving student achievement was relatively simple and straightforward as long as teachers and students had a system that provided adequate feedback regarding student progress, suggesting that the results are not dependent on extraordinary teachers or administrators. In this study, interviewees attributed improved student outcomes to actions by teachers to improve student learning—tutoring, reteaching, and so on. Those actions were attributed to improvements in decision making about what to teach, how, and to whom. Finally, improved decision making was attributed to faster collection of diagnostically useful student assessment information through the rapid assessment system. Teachers stated that as they gained experience with this cycle of improvement, they began to anticipate and make changes in curriculum and instruction at the beginning of the school year instead of waiting until students needed remediation. They believed that the cycle of improvement accelerated when they had rapid access to assessment data. They talked about the effect of rapid assessment in promoting a culture of continual learning and organizational improvement. According to the teachers and administrators in this study, the implementation of rapid assessment triggered a cascade of changes in every aspect of schooling: the depth and balance of curriculum and instruction, the engagement and achievement of students, and organizational culture.

TOWARD A THEORY OF RAPID ASSESSMENT

The description of the processes by which rapid assessment achieves its effects moves us toward a theory of rapid assessment. The present results suggest the hypothesis that rapid assessment operates through two paths: improved instruction and improved student motivation. Rapid assessment is more effective if it is embedded in curriculum activities so that feedback is received by students immediately after finishing a book or a set of math problems. This suggests that the technology supporting the system must allow students—not teachers or administrators—to initiate the feedback. In
the district that is the focus of this study, the technology allowed students to initiate the feedback by immediately taking a short comprehension quiz or immediately scoring a completed set of math problems. The logistics of providing immediate feedback strongly suggest the need for supportive technology. Without the technology, schools are forced to rely on the presence of extraordinary teachers working extraordinary hours. The limitations of this approach are obvious.

A second hypothesis concerning rapid assessment is that, for most students most of the time, speed and frequency of feedback is, to a large extent, more important than highly personalized but infrequent feedback, such as the type of feedback that teachers can provide through individual conferences with students. At the same time, much of the effect of rapid assessment can be attributed to the increased ability of teachers to spend more time tutoring individual students who need extra help.

Third, the present study suggests the importance of a supportive technology that promotes individualization of instruction. The motivational effects teachers described for rapid assessment may depend on a system in which students select books that are graded according to reading level and in which math problems are assigned based on student level.

Finally, the results concerning rapid assessment suggest why once-a-year testing is unlikely to have the desired effect of promoting student achievement. Feedback is too slow and infrequent to have much of an effect on either instruction or student motivation.

A “RAPID CYCLE” THEORY OF ORGANIZATIONAL IMPROVEMENT

According to teachers and administrators, rapid assessment facilitated fundamental changes in the organization and culture of schooling, encouraging dialogue among teachers by providing a common point for discussion, increasing collaboration among teachers to improve instruction and resolve instructional problems, reducing teacher isolation, and supporting both new and experienced teachers in implementing sound teaching practices. Teachers suggested that improvement in McKinney is faster and continual because the rapid assessment information system fosters rapid learning cycles: collecting student assessment information, making decisions, taking action, and evaluating outcomes. In McKinney, cycle time was reduced to the point where teachers made instructional adjustments on a daily basis. The implication is that schools with a faster cycling rate are likely to learn and improve faster and ultimately outperform schools with a slower cycling rate. Schools that rapidly assess student progress may improve instruction at a faster rate, resulting in improved student outcomes to the degree that the assessments provide instructionally valid information.
RAPID ASSESSMENT AND INQUIRY-ORIENTED LEARNING

Some scholars may contend that the type of instruction fostered by rapid assessment may be inconsistent with current trends toward inquiry-oriented, socially constructed learning. This would be true if rapid assessment led to more drill and practice, less critical thinking, narrowing of the curriculum to material covered by the state-mandated test, and less time for inquiry-oriented activities. However, interviewees reported the opposite effects. They reported that teachers had more time to spend on activities that were not directly tested precisely because rapid assessment made them more effective in teaching the material that was tested.

Rapid assessment provides diagnostic information that teachers and administrators in McKinney found useful. If they were inclined, they could have allocated the entire school day to the Rapid Assessment programs. However, they allocated a half hour per day for the Reading Assessment portion and a half hour a day for the Math Assessment portion—half of the time that is recommended by the Rapid Assessment Corporation. This indicates a desire to spend more time on activities other than the Rapid Assessment programs. Although teachers and administrators in McKinney clearly found rapid assessment to be valuable, it is also clear that they felt that the vast majority of the school day should be spent on other activities. This is consistent with the conclusion that much of the value of the programs is that they free up time to spend on other activities. It also suggests that it may be premature to conclude that teachers and administrators in McKinney subscribe to a philosophy of instruction that is inconsistent with social constructivism.

If it is true that students in McKinney “love to read” and “love math,” this would seem to suggest that instructional approaches in this district go far beyond simple transmission models—unless one wants to argue that transmission models foster a love of reading and math. Clearly, the results of this study raise important questions, but if the findings are confirmed by other researchers, the implication is that funding for rapid assessment programs may enable schools to begin to address the challenge of the No Child Left Behind Act to improve student achievement without compromising educational quality.

Notes

1 Pseudonyms are used to avoid any appearance that the author endorses the assessment products and the company that produces them. The author has no affiliation with the Rapid Assessment Corporation and has received no funding from the corporation.

2 The interview questionnaire is available at http://www.tc.umn.edu/~yehxx008/Questionnaire.pdf.
References


STUART YEH is currently an assistant professor in the Department of Educational Policy and Administration at the University of Minnesota. His research focuses on improved ways of designing assessment and accountability systems. He is currently writing a book that recommends changes in testing policies at the federal, state, and district levels.