Many schools, one complex measure

St. Louis district synthesizes the lessons of reform

BY M. JAMES KEDRO AND WILLIAM E. SHORT

Measuring the extent of professional development in a large school system is complex. It’s a challenge to gauge training and its effects when schools choose different instructional reform models, and the task is more formidable when the models are chosen at different times and change.

In 1999 and 2000, the St. Louis Public Schools identified schools that didn’t do well on the state’s high-stakes performance test and selected 40 to receive about $55,000 a year in extra funds for instructional innovations. The goal for the schools, identified as Schools of Opportunity (SOP), was clear: meet state standards and earn full accreditation.

The schools’ staffs selected models from a menu of research-based programs on the list of Comprehensive School Reforms (American Institutes for Research, 1999; NWREL, 2001). The extra money they received was budgeted for teacher professional development and instructional materials. A dozen different instructional models were off and running.

The district decided it needed to evaluate the overall project to find out whether the schools were achieving the desired results. Was professional development adequate? Did training...
St. Louis Public Schools
St. Louis, Mo.

Number of schools: 59 elementary (K-5), 21 middle (6-8); 11 high schools (9-12).
Enrollment: 40,792, includes preschool
Staff: 3,137 (number of teachers, includes specialists)

Racial/ethnic mix:
- White: 16.3%
- Black: 81.0%
- Hispanic: 1.4%
- Asian/Pacific Islander: 1.3%
- Native American: 0.1%
- Other: 0%

Limited English proficient: 7.3%
Languages spoken: 32, predominantly Serbo-Croatian, Spanish, Vietnamese, Farsi, Arabic, Kurdi

Free/reduced lunch: 83%
Special education: 16%

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in the models make its way into classrooms? Did the instructional changes help — did student achievement improve?

**DESIGNING A STUDY**

To assess the professional development in instructional models, researchers in the St. Louis district asked: (1) How many teachers at the elementary, middle, and high school levels believe they were adequately trained in the models? (2) How does the length of time with a model affect the teachers’ perception of the training and use of the model? (3) How appropriate did teachers think the model was for their students? (4) Does length of time with the model, training, and teachers’ perceptions of its use and acceptance relate to improvements in student achievement? For three consecutive years (2000-02), the district’s research division surveyed all instructional staff, including site administrators, special needs teachers, and ancillary teachers in the schools that implemented reform models. The district eliminated the survey in 2003 due to budget constraints, but researchers continued with school observations and analyzing student achievement.

In the first year, we used a standardized, validated instrument, the Concerns-Based Adoption Model (CBAM) questionnaire, to measure to what degree teachers accepted the new programs (Hall & George, 1979; Hall, Wallace, & Dossett, 1973). We repeated the CBAM questionnaire in the second and third years, along with a questionnaire the district developed as a cross-check on the CBAM results.

Items on the staff-developed questionnaire pertained specifically to teacher training in the instructional models (Parsad, Lewis, & Farris, 2001). The survey asked teachers to rate their level of use of whichever new model their school had adopted, choosing one of five levels: nonuser, novice, intermediate, old hand, and past user.

In 2001, 36 schools returned the survey, for a response rate of 90%, compared with 25 schools (62.5%) in 2002. The 2001 surveys had been sent out in February, while the 2002 surveys were sent out near the end of the year, which likely lessened the response rate.

We then compared the data from the staff-developed survey over time. We looked at the responses for each level — elementary, middle, and secondary — the number of respondents (552 in 2002; 715 in 2001), and how representative the respondents were of all the participating schools and their selected models. We analyzed the data for schools that had used their model for three consecutive years to determine what teachers thought of the extent of their professional development and their perception of the degree to which the models were being used (see chart below).

What we found was:

- More teachers seemed to have difficulty adapting to change in the second year and fell back on traditional strategies despite the reform initiative training. The percentage of teachers using other strategies outside the models rose from about one-fifth of respondents to about one-third.

- Some schools had high levels of staff turnover and inadequate first-year training for new teachers, leaving them unfamiliar with the models.

- Most schools made no movement at all toward more complete staff buy-in.

- Results over two years showed that most schools made no movement at all toward more complete staff buy-in. Some schools had high levels of staff turnover and inadequate first-year training for new teachers, leaving them unfamiliar with the models. This lack of knowledge likely showed up on the CBAM as lack of progress in the school.

### Instructional staff responses

<table>
<thead>
<tr>
<th>School level</th>
<th>Number</th>
<th>Received adequate training %</th>
<th>Level of use (knowledge)</th>
<th>Teacher in model</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Nonuser %</td>
<td>Novice %</td>
</tr>
<tr>
<td>'01 '02</td>
<td></td>
<td>'01 '02</td>
<td>'01 '02</td>
<td>'01 '02</td>
</tr>
<tr>
<td>Elementary</td>
<td>334</td>
<td>273</td>
<td>56 82</td>
<td>12 11</td>
</tr>
<tr>
<td>Middle</td>
<td>262</td>
<td>218</td>
<td>72 78</td>
<td>8 15</td>
</tr>
<tr>
<td>High</td>
<td>119</td>
<td>61</td>
<td>31 74</td>
<td>25 14</td>
</tr>
<tr>
<td>Total (weighted)</td>
<td>715 552</td>
<td>58 80</td>
<td>13 13</td>
<td>43 28</td>
</tr>
</tbody>
</table>

Showing the percentages of instructional staff, by school level, who responded to items on the district-developed survey in four major categories: adequate training in the model, level of use or knowledge of the model, length of time with the model, and whether an alternative model was used. Data from spring 2001 is compared with data from spring 2002.
than had in the second year. And teachers who had spent two or more years with a model and who said their training was adequate were more advanced in their use of the model. Length of time with the model also affected teachers’ perceptions of increased experience.

**VISITING, INTERVIEWING, OBSERVING, EXAMINING**

District researchers attempted to corroborate the survey results with visits to schools, staff interviews, classroom observations, and by examining relevant supporting documents (Kedro, et al., 2001; Kedro, et al., 2002; Cook, et al., 1996).

In spring 2002, the participating schools’ principals and reform model facilitators participated in focus group interviews with research staff members. Principals agreed to continue with their models through the next school year. Most concurred that school staffs were supportive, although staff turnover severely hampered how well the reform models could be implemented in some schools. Principals and facilitators both said the schools needed more time with the reform models for the district to gain a fair assessment of the models’ impact on instruction and achievement.

Staff from the district’s division of research developed and tested a package of observation instruments designed to rate instruction and learning in the participating schools’ classrooms. Areas of concern focused on higher-order learning, inquiry-based instruction, critical thinking skills, and performance-oriented tasks aligned with the state standards (Sparks, 2000; Snipes, Doolittle, & Herlihy, 2002). District evaluators visited, observed, and rated the schools. These visits showed that schools were implementing the models to widely varying degrees. Generally, researchers found that schools that received high ratings for classroom instruction corresponded to those schools where teachers reported high implementation of the model.

School improvement plan data for 2002-03 and 2003-04 showed that, overall, school instructional plans improved from previous years. However, a few plans remained general and didn’t link identified academic needs with data-driven instructional strategies supported by well-delineated professional development activities.

**TRACKING STUDENT ACHIEVEMENT**

The district established baseline student achievement data to measure program effects, although many factors impact achievement, and it would be difficult to attribute change to one intervention among many.

We examined outcomes on the state performance test, the Missouri Assessment Program (MAP) test, from 1999, the baseline, through 2003 for all 40 schools involved. The MAP reports student outcomes in five categories — Step 1, Progressing, Nearing Proficiency, Proficient, Advanced — and state standards aim at moving defined percentages of students out of the bottom two levels and into the top two levels. We calculated longitudinal changes on the percentage of all students who moved out of the bottom two levels of the state test, Step 1 and Progressing, and into the top two levels, Proficient and Advanced, for the four subject areas tested: communication arts, mathematics, science, and social studies. Outcomes were determined for each of the 40 schools and for each instructional model.

Researchers then looked at whether there was any alignment between improvements in student test scores and the levels of implementation and acceptance of the reform models.

Student achievement at the elementary level showed the greatest overall improvement. Achievement at participating middle and high schools generally remained static, and no model appeared to substantially affect improvement at those levels (see chart at right).

Among the participating elementary schools, the Success for All model had the largest effect on students’ state standardized test scores for all schools using that model. Success for All teachers also reported the highest level of adequate training (86%), and the model had the most respondents who reported themselves as intermediate/old hand (73%) and the fewest who used alternative teaching strategies (20%), an indicator of staff commitment. Other elementary school models showed results, but none as dramatic as Success for All (Kedro, et al., 2001; Kedro, et al., 2002; Kedro, in press).

**RECOMMENDATIONS**

As a result of our study, researchers made two recommendations to the district:

• Staff at each participating school should jointly re-examine the alignment of their instructional model with state standards across grade levels and subject areas. Staff should identify, incorporate into their school improvement plan, and implement specific steps to achieve instructional coherence.

• Adequate training for teachers new to an instructional model is essential and provision for that training requires greater attention from school site administrators, district professional development staff, and model facilitators in the schools.

**WHAT WE LEARNED**

The implications of what we learned can assist districts implementing schoolwide reform models. We learned:

• The right model, practiced by a large proportion of a school’s instructional staff, may contribute to positive change on a state high-stakes performance assessment. This study found student achievement on state tests improved in schools where teachers reported widespread adequate training and researchers found effective implementation of the model.

• An overarching, districtwide, coherent instructional plan is preferable. Using multiple models at different schools to promote staff buy-in at each does not work well in a large district with a high rate of staff turnover. Training a stream of new teachers detracts from institutionalizing the innovation. The district may never reach the point where it has a teacher corps well-versed in the adopted methods. This challenge is compounded in a school system with high student mobility rates (more than 33% in the St. Louis district). As children move from one model to another during the school year, learning and achievement may be adversely affected. Appropriate models can be adapted to the districtwide framework. St. Louis is making this change.

• Multiple sources of data are preferable in gauging levels of staff development and implementation. When assessing staff development, a single standardized survey may not get at all the details. Using several data sources is superior to using just one. Some teachers who are surveyed may honestly perceive they have adequate levels of training and that their school has fully adopted the instructional model, but evaluators who observe classroom instruction and

<table>
<thead>
<tr>
<th>School level</th>
<th>Subject</th>
<th>% change out of Step 1 and Progressing</th>
<th>% change into Proficient and Advanced</th>
</tr>
</thead>
<tbody>
<tr>
<td>ELEMENTARY (23 schools)</td>
<td>Communication Arts</td>
<td>-15.0</td>
<td>+11.0</td>
</tr>
<tr>
<td></td>
<td>Mathematics</td>
<td>-11.0</td>
<td>+6.0</td>
</tr>
<tr>
<td></td>
<td>Science</td>
<td>-25.0</td>
<td>+27.0</td>
</tr>
<tr>
<td></td>
<td>Social Studies</td>
<td>-19.0</td>
<td>+17.0</td>
</tr>
<tr>
<td>MIDDLE (14 schools)</td>
<td>Communication Arts</td>
<td>-2.0</td>
<td>+2.0</td>
</tr>
<tr>
<td></td>
<td>Mathematics</td>
<td>-12.0</td>
<td>+4.0</td>
</tr>
<tr>
<td></td>
<td>Science</td>
<td>-3.0</td>
<td>0.0</td>
</tr>
<tr>
<td></td>
<td>Social Studies</td>
<td>-12.0</td>
<td>+8.0</td>
</tr>
<tr>
<td>HIGH (3 schools)</td>
<td>Communication Arts</td>
<td>+7.0</td>
<td>-5.0</td>
</tr>
<tr>
<td></td>
<td>Mathematics</td>
<td>-4.0</td>
<td>0.0</td>
</tr>
<tr>
<td></td>
<td>Science</td>
<td>-11.0</td>
<td>0.0</td>
</tr>
<tr>
<td></td>
<td>Social Studies</td>
<td>-4.0</td>
<td>-2.0</td>
</tr>
</tbody>
</table>

From spring 1999 to spring 2003 for Schools of Opportunity (SOPs). Shows the overall percentages of students in the SOPs moving out of the bottom two categories on the MAP test, Step 1 and Progressing, and into the top two categories, Proficient and Advanced.
examine on-site documents may find otherwise.

- School instructional staff must develop and deliver their own on-site training sessions and workshops to keep a coherent focus on the reform model. Model providers vary widely in the comprehensiveness of the professional training they offer.

- Finally, adopting an instructional model requires a great deal of patience. Building a trend of academic performance on a state test takes time. Immediate large gains are unlikely. Staff must be made aware that achievement dips, temporary setbacks may occur, and, in some cases, boards of education or local political and community leaders will demand immediate results from the schools and may not have the perseverance to see an instructional reform program through to fruition.

REFERENCES


Hall, G.E. & George, A.A. (1979). Stages of concern about innovation: The concept, initial verification and some implications. Austin, TX: Research and Development Center for Teacher Education, University of Texas.


School instructional staff must develop and deliver their own on-site training sessions and workshops to keep a coherent focus on the reform model.

Austin, TX: Research and Development Center for Teacher Education, University of Texas.


Third-year schools of opportunity: Instructional reform model implementation and achievement (interim report). St. Louis, MO: St. Louis Public Schools Division of Research, Assessment, and Evaluation. Available at www.mindspring.com/-raleigh1/SchoolsOp.htm


Adopting an instructional model requires a great deal of patience.