T
 the Dallas ISD Science and Technology Initiative focused on supporting proven academic programs for student academic achievement and college and career readiness. The initiative featured major objectives that included supporting the implementation of successful inquiry-based science curricula and instruction, and to expand the technology infrastructure to enhance computer-to-student and computer–to-teacher ratios. Several goals were set to meet these objectives:

- purchase netbook and handheld computers for student and teacher use.
- expand the District's science and technology website.
- train participating teachers in instructional methodology using technology.
- develop and administer a participant use and satisfaction survey.

All objectives and goals were met during the 2010-11 school year.

Funding, Goals, Participants

The district and the Dallas-based Foundation for Community Empowerment (FCE) received a grant from the National Aeronautics and Space Administration (NASA). The district’s portion of the grant – $350,000 – funded the Science and Technology Initiative. Using these funds, the district expanded the capabilities of a science focused website, trained teachers in grades Prekindergarten – 12 on software packages and web sources, purchased netbooks and handheld instructional tools, and conducted science-based enrichment activities for students. In addition to Dallas ISD campuses, participating schools included community childcare programs known as School Readiness Integration (SRI) partners. Twenty-seven high schools, 34 middle schools, and 153 elementary schools and 11 SRI sites participated in the initiative’s professional development. A total of 225 schools participated.

Selection

All seven district Learning Communities were contacted to identify schools in their area needing science support. Additionally, the Dallas ISD partners with community childcare programs, such as School Readiness Integration (SRI), to develop fundamental, academic and social skills that are necessary for school success. SRI sites collaborate with nearby elementary schools that furnish them with certified teachers. Teachers were selected by their Dallas ISD principals based upon student academic need. Others volunteered.

Equipment, Training

Campuses receiving equipment were selected on a first-come, first-served basis. The first 25 elementary or secondary schools registering at least five students for the Dallas ISD’s science fair received netbooks that were dedicated to internet use. Additional equipment was distributed in conjunction with professional development’s “Fifth Saturday” sessions; high school attendees received Texas Instruments Nspire handheld touch calculator/computer for use in the classroom. Attendees received professional development specifically tied to the equipment received.

Science teachers and teacher technologists at participating schools received specialized training focusing on hardware and software use, as well as hyperlinks. Training also promoted collaboration among campuses. Teachers participated in professional development throughout the school year, with a total of 638 workshop or symposium attendees.

Science Website

Previously, the NASA initiative developed a districtwide website to stimulate student involvement and achievement in science. The final product was a website entitled “Science in the City,” accessible at http://www.dallasisd.org//Domain/149. During the 2010-11 school year, district science personnel expanded the website capabilities, including videotaped lessons for teacher use. Website links were coordinated with the district’s Curriculum Planning Guides, so that teachers could align content objectives with state mandated standards, such as Texas Essential Knowledge and Skills (TEKS) and Texas Assessment of Knowledge and Skills (TAKS) objectives.

NASA Field Trip

Students from 5th and 6th grades were selected to go on a field trip to the NASA Johnson Space Center based on a contest created by the district’s Science Department. Fifty students and seven science teachers were chosen from seven district schools to make the May 20, 2011, field trip. Teachers were selected by the principal to conduct the “Careers in Science” contest which involved students researching majors/careers in science using their netbooks and online resources provided on the Science in the City
website and teacher’s page. The students were then selected for the field trip based on teacher’s judging their resume/essays submitted by students. The winning resume/essays were posted on the Science in the City website as well.

**Starlab Presentations**

The initiative contracted with the Museum of Nature and Science to provide enrichment activities for elementary students using the museum’s Starlab. The three Starlab presentations promoted understanding of astronomy to students at each campus visited. A total of 39 Dallas ISD campuses were included, with 117 presentations to over 3,200 students.

**Satisfaction Survey**

An online teacher satisfaction survey was embedded as a link in the Science in the City website at the end of the school year. The survey was designed to measure teacher technology use, satisfaction with the initiative and to elicit suggestions for future improvement. Overall, the majority of respondents (79%) found the NASA initiative “very helpful” or “somewhat helpful.” Half of the respondents agreed that the Science in the City website had helpful resources and activities. However, the reported in-class use of technology either by teachers or students was not at a very high level.

**TAKS Scores**

Percentages of commended students on TAKS mathematics and science by school level were reported for this initiative. For reasons explained in the final report, no conclusions as to effectiveness or results of the initiative could be drawn from these scores.

<table>
<thead>
<tr>
<th>Percent of Students Commended</th>
<th>2010 and 2011 Math and Science TAKS scores by Grade Level Group</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Elementary Schools, Grades 3-6</strong></td>
<td></td>
</tr>
<tr>
<td>27.4</td>
<td>31.0</td>
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<tr>
<td><strong>Middle Schools, Grades 7-8</strong></td>
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</tr>
<tr>
<td>16.6</td>
<td>16.3</td>
</tr>
<tr>
<td><strong>High Schools, Grades 9-11</strong></td>
<td></td>
</tr>
<tr>
<td>14.7</td>
<td>14.3</td>
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</tbody>
</table>

**Notes.**
- Change (+/-) is expressed in percentage points.
- Only 5th grade tested in Science
- Only 8th grade tested in Science
- Only 10th and 11th grades tested in Science

Source: District website  MyData Portal

**Recommendations**

Beginning in 2011, students entering a Texas public high school were required to complete four credits each in science: biology, chemistry, physics, and a laboratory-based course. Clearly, it was important for students to have opportunities to interact with scientific concepts using technology, enrichment opportunities, and research-based instructional programs in order to succeed. For continued improvement of the district’s science and technology programs, the following recommendations were made:

- Continue to support teacher’s use of technology in the classroom for instruction. Survey results indicate the need to increase the comfort level of teachers’ technology use.
- Continue to collaborate across district departments, such as Professional Development and Science Department staff. The Science in the City website is a good example of such collaboration.
- Continue to encourage community involvement in the district’s science activities. The Museum of Nature and Science Starlab and Texas Instruments’ involvement enriched students’ science experience.

For more information, see EA11-130-2, available at www.dallasisd.org/inside_disd/depts/evalacct/.