SD42

Using Technology to Engage the Learner

Why did we choose this area of focus?

Students today need an increasing array of '21st Century' skills that enable them to meet new challenges, solve problems, and use the tools and technology of today and tomorrow.

Inquiry and challenge-based learning combine the strengths of traditional learning with new directions that engage students and extend and deepen their learning.

This project built on the previous strengths of the Wireless Writing Project. Inquiry Learning in the Classroom has built a strong capacity for supporting technology integration, research, and inquiry learning in the classroom.

What have we done so far?

2009-2010 was the first year of the 21st Century Skills Project. Since then we have further refined the program. A large focus has been developing and trying out assessment materials for developing inquiry plans, processes of inquiry, and presentations of inquiry project results.

Assessment materials follow the BC Performance Standards pattern of using clearly established criteria to describe student achievement in terms of expectations (not yet meeting; meeting at minimal to moderate level; fully meeting; exceeding).

Data from Spring 2010 become our baseline. We now have the 2012 data.

Teachers participating in the project systematically collect three types of data:

- written inquiry plans;
- observation of inquiry processes students use;
- digital presentations of inquiry results.

Baseline data for written inquiry plans were collected in Fall 2009 before students were introduced to the inquiry approach and related 21st century skills.

What did we learn?

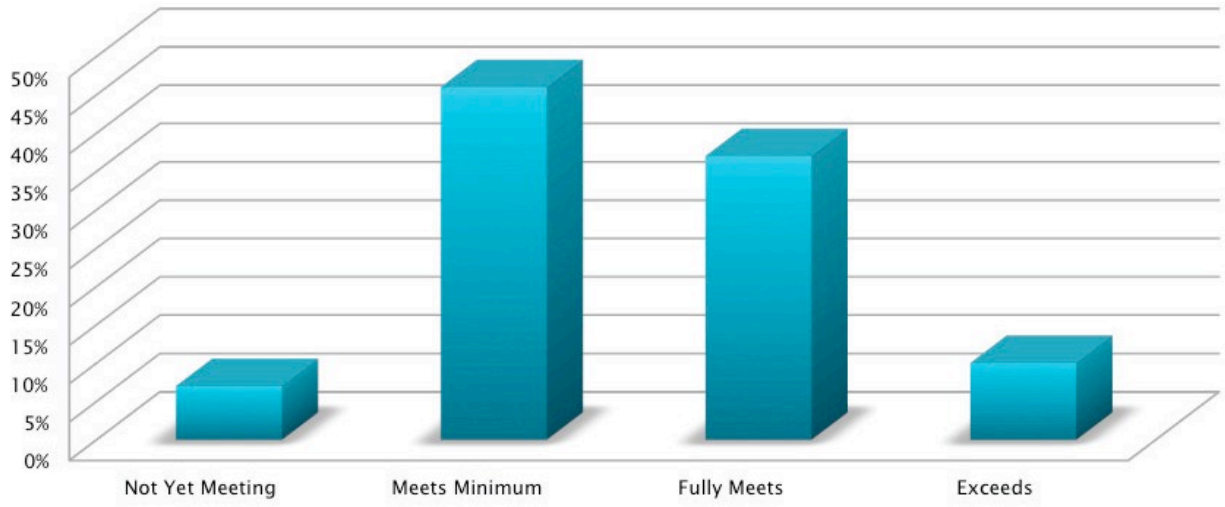
Student Achievement: Completed Inquiries

As indicated on the following graph, almost all inquiry projects in 2011 met at least minimal to moderate expectations (93%), while 47% showed strong achievement, fully meeting or exceeding expectations.

The average score was 2.5 (on a 4-pt scale) with a standard deviation of .7, which was the same as last year.

NOTE: Results in the following graphs are based on presentations from 208 groups including over 600 grade 6-7 students.

Presenting an Inquiry: Overall Rating Spring 2012 (n = 208 groups)



What did we learn?

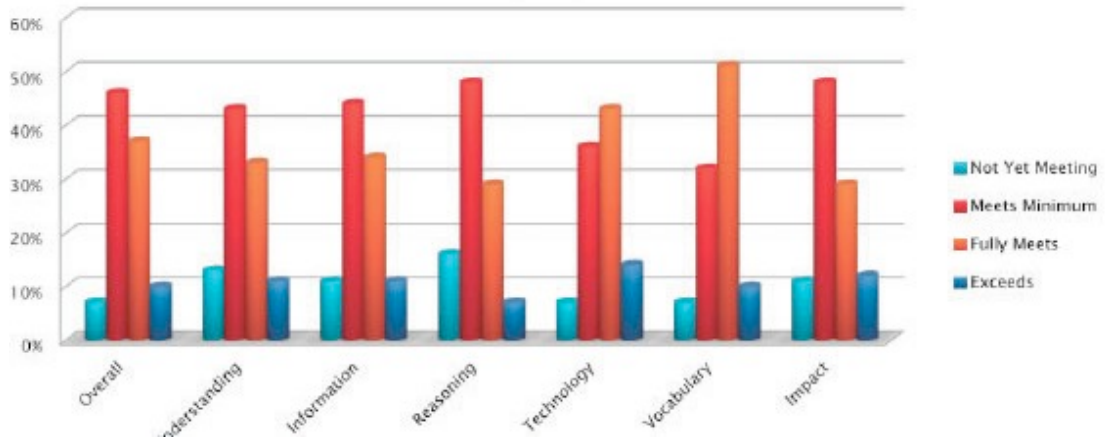
Student Achievement: Component Ratings

When specific components of the presentations were assessed, the highest ratings were assigned to use of technology and appropriate content/subject matter vocabulary.

There were no substantial differences in our data when compared to last year. This is encouraging since we had several new teachers involved in the project.

NOTE: Results in the following graphs are based on presentations from 208 groups including over 600 grade 6-7 students.

Presenting an Inquiry: Component Ratings Spring 2012 (n = 208 groups)



What did we learn?

Comparisons Over Time: presentations

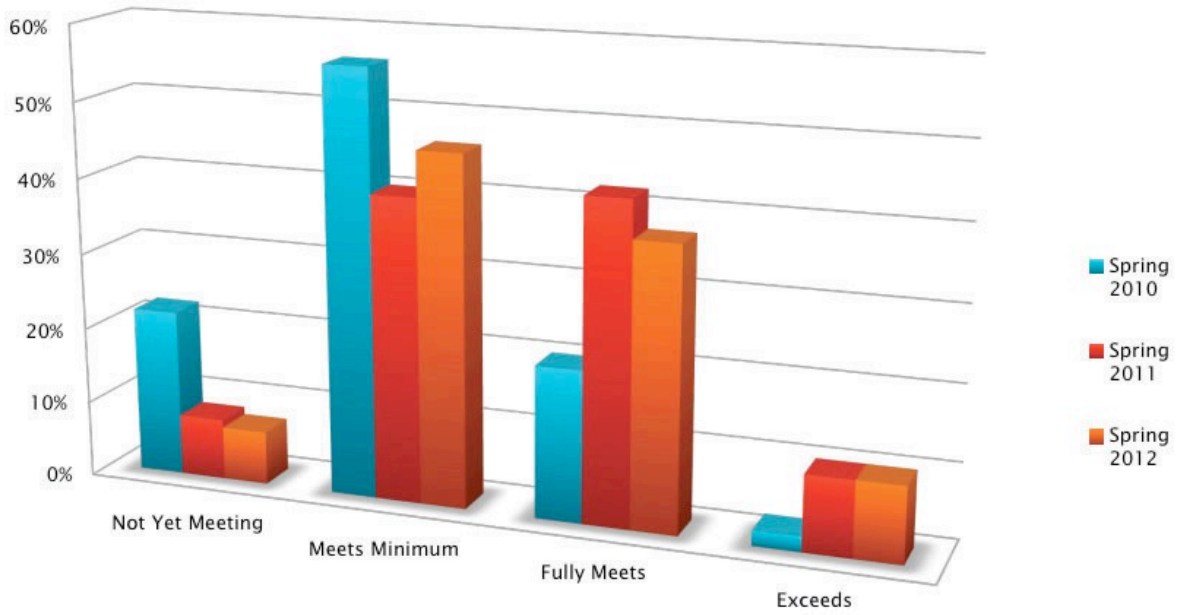
As shown in the following three graphs, the quality of inquiry presentations improved substantially from 2010 to 2011 and then plateaued in 2012:

- 10 % of groups continued to achieved excellence in their presentations;
- fewer groups fully met or exceeded expectations (47% to 52%);
- More groups met at least minimal expectations (93% to 92%);
- The average rating was maintained at 2.5 on a four-point scale.

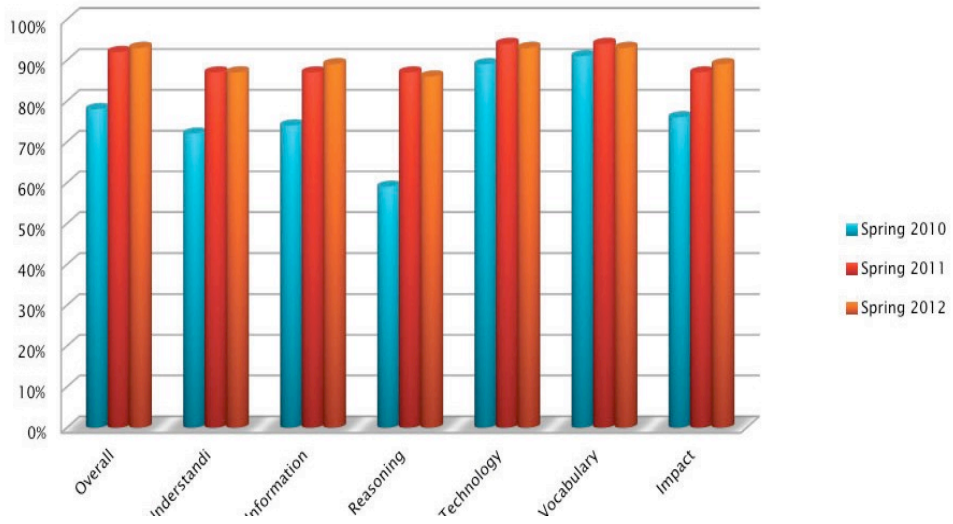
In terms of specific components, groups showed the strongest improvement in "logical reasoning," an area that many teachers targeted for special attention as scores had been relatively low in 2010. Since 2010, we have seen a dramatic increase in logical reasoning as a result of targeted teacher training.

We saw a slight decrease in some scores. When comparing our Calibration Anchor Student Projects from past years, it seems teacher's expectations have gotten higher each year, yet the students are not the same students each year.

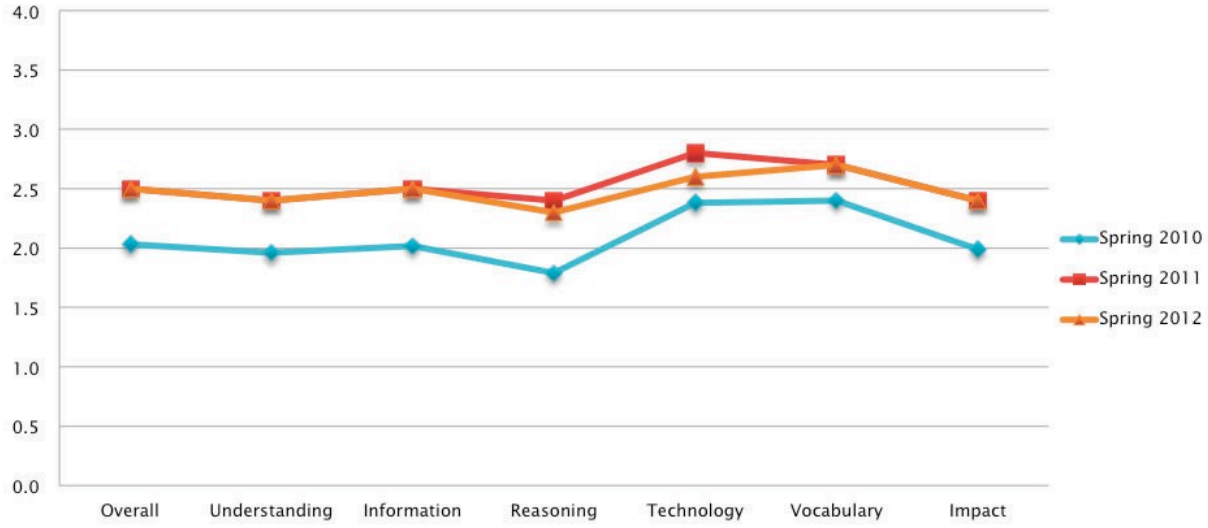
Presenting an Inquiry: Overall Ratings 2010 - 2012



Presenting an Inquiry: % Meeting/Exceeding Expectations 2010 - 2012



Presenting an Inquiry: Average Component Ratings 2010 - 2012



What did we learn?

Almost all students were able to engage effectively in a collaborative inquiry into a question they chose. They met at least minimum expectations for the set of skills and processes related to "21st Century Learning" through planning, executing, and presenting their inquiries.

In year 3 of the inquiry-based program, an increasing number of students showed strong achievement by fully meeting or exceeding expectations for inquiry.

The project has also demonstrated that inquiry-based learning can flourish in a wide variety of contexts

and with diverse groups of students. All students in the grade 6 - 7 project classrooms participate in this program, which in other times or places might have been restricted to 'enrichment' for high achieving students.

This project continues to demonstrate the strong commitment and capability of SD42 teachers to engage sophisticated and complex forms of teaching and learning. The project teachers are a real and powerful learning community.

What have you discovered you would like to change, alter or refocus as a result of what you have found?

- We would like to refine our marking calibration techniques with our teachers;
- Increase opportunities for teachers to share strategies, issues, and samples of student work;
- Due to the strong results we have seen, we will be expanding the program to every elementary school in our district, beginning September 2012.