

Updates to the Research on Washington State LASER

RMC, the outside evaluator for Washington State LASER, has recently completed a report of the findings from several studies conducted during the 2007-2008 school year.

In 2007, the State Legislature greatly expanded the funding for Washington State LASER which allowed for the expansion of the program evaluation and research efforts conducted by RMC. Three major studies were done and summarized here in this eNewsletter. At the end of this article you will find a link to the full Evaluation Report.

Analysis of Student 2007 Science WASL Results:

Through an analysis of the 2007 Science WASL and the science professional development data kept on the LASER database, RMC found that professional development for the student's teacher was a small but significant predictor of student performance with a minimum of 18 hours being the threshold before the impact was exhibited. It was also shown that Grade 5 teachers participating in professional development served a larger proportion of students eligible for free or reduced-price lunch and a greater proportion of Hispanic and Latino students with a smaller proportion of White students.

Module-Level Assessment of Students' Content Knowledge:

Across Washington State, 53 teachers volunteered to administer to their students a pre-and post-assessment closely aligned with the instructional materials (Science & Technology for Children [STC] and Full Option Science System [FOSS]) which had been developed and validated by Horizon Research. In this study, it was found that students demonstrated significant improvement between the pre-assessment and the post-assessment increasing more than 19 points on a 100 point scale. Somewhat inconclusive was the information in regards to the professional development of the teachers administering the pre- and post-assessment. If the teacher had engaged in more than 18 hours of professional development, the gain by the students appeared to be highest.

Sentinel Site Visits:

During the Winter and Spring of 2008, 34 schools were visited to examine the way they were implementing inquiry-based instruction. The schools chosen were those who had staff who had participated in the most science professional development during the past three years. These schools also represented two groups: (a) schools that demonstrated an increase in the percentage of students who met the science standards on the WASL between 2006 and 2007 and (b) schools that demonstrated no change or a decrease in the percentage of students who met the science standards.

RMC found all schools had successfully established a core sequence of inquiry-based instructional modules across all grade levels and that they had maintained a material support system that brought kits to the teachers ready-to-teach. Schools whose 5th grade students' scores increased on the WASL had more teachers who participated in professional learning communities, time during the workday to work on professional development, parent and community support, as well as literacy integrated with science. The teachers in schools whose 8th grade students demonstrated an increased performance also used time in professional development to examine student work and taught from exemplary instructional materials with activities that incorporated discussions based on evidence, possessed content that was significant, accurate and worthwhile, fostered student understanding and making sense of scientific concepts and provided opportunities for students to reflect on their learning. Finally, the elementary and middle schools that demonstrated an increase in the percentage of students meeting the science standard had teachers with significantly fewer years in teaching.

The following recommendations were made by RMC:

1. Ensure that the professional development on research-based instructional practices is consistent and explicit across all the LASER Alliances.
2. Increase support for school-based professional development that helps teachers (a) assume accountability for student learning that results from the use of the modules and (b) collaboratively implement the elements of effective science instruction embodied in the observation protocol used during the Sentinel Site Visits which can be found in the full report located on the RMC website:

<http://www.rmccorp.com/LASER/Documents/LASEREvaluationReport2008.pdf>