

Project CRISS: Urban West Study  
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During the 2003-2004 academic year, we examined the effectiveness of Project CRISS in an adoption site in a large urban district in the western U.S. The experimental data came from two classrooms in a high school where every content teacher had participated in a CRISS workshop during the 2002-2003 academic year. Teachers also attended two half-day follow-up sessions during the 2003-2004 school year. Students in the control group attended another high school in the same district where teachers had not participated in the CRISS project. Both schools drew students from similar socio-economic backgrounds.

The CRISS inservice is a two-day, twelve-hour workshop focusing on principles and strategies for helping students become more proficient readers, writers, and learners in the content areas. The workshop begins with an overview of theoretical principles which form the foundation of the project. From here, participants learn practical strategies for helping students become more proficient learners. These strategies include procedures for generating and focusing background knowledge, flexible ways to organize information for learning (note-taking, concept mapping, visualizing, content frames, selective underlining), formal and informal writing, student generated discussion, and test-taking. Teachers have opportunities during the workshop to apply what they are learning to their own classrooms. During the year, teachers implement the program within their content courses, share ideas, and participate in follow-up sessions.

Pre- and post-test data were collected by a curriculum specialist in the district. She administered the CRISS pre-test to students in both the experimental and control classrooms in September of 2003 and the post-test to the same students in April of 2004. The study was entirely funded by the district as part of its evaluation plan. The assessment instruments were provided by Project CRISS.

The assessment materials and procedures mirrored typical classroom practices where students are assigned to read and study information in preparation for an examination. The assessment test consisted of a four page article about the 1920s. Students read the same passage for both the pre- and post-tests.

The test took place over two consecutive days in the fall and in the spring. On the first day students read and studied the selection in preparation for a test the next day. Students received no other instructions or suggestions about ways to study the material—they were simply told to read and study the information any way they chose. At the close of the 40 minute reading and studying period, the reading selection and study materials were collected. The next day the students were given a blank sheet of paper and took a free recall test where they wrote down everything they could remember from the selection. The free recall tests were then scored using a grid listing all probable content from the selection. Students received a point for each item recorded. One person scored the free recall protocols “blind” without knowing whether or not the subjects were from experimental or control classrooms.

Free recall measures are an appropriate evaluation for examining how well students have processed information, because there are no clues about the content in the assessment procedure. With essay or multiple choice questions, the content of the questions can trigger memories for

specific information. With free recall, students have no cues—just a blank sheet of paper for recording what they remember from the selection. Also, the 24 hour delay requires students to engage in deeper processing of the material in order to remember the text information. We have found, in our previous research studies, this assessment procedure to be highly sensitive to the effects of CRISS (Santa, 2004).

Two world history classrooms taught by different teachers participated in each of the experimental and control conditions. Combining classrooms was necessary for providing a sufficient number of subjects for each condition. Students needed to be present for both the fall and spring testing. From 25% to 30% of the students in both conditions were not available for the post-testing in the spring because they were either absent, had transferred to other classes, or had moved out of the district. Thirty-two students in the experimental group and twenty-eight students in the control group completed both the pre- and post-tests.

Our hypothesis was that both experimental and control classes would do similarly on the pre-test before being exposed to CRISS strategies, but the experimental students would show more improvement on the post-test than the controls students. We predicted that students participating in classrooms where teachers were implementing CRISS strategies throughout the content areas would recall more information on the post-test assessment than students who haven't had specific instruction in learning strategies.

The means and standard deviations for each condition are shown below. An Analysis of Variance (ANOVA) was run with “Test” (items recalled) as the dependent variable and “Group” (experimental versus control) and “Trial” (pre-test and post-test) as independent variables. The data were submitted to a 2 (Group) x 2 (Trial) ANOVA with repeated measures on the Test factor. A significant difference was found between the experimental and control groups, with the experimental group performing better on the free-recall measures. However, the effect worth noting is the significant Group-by-Trial interaction,  $F(1, 56) = 15.625, p.005$ .

Condition	Pre-test mean	Post-test
control n=28	5.42 (sd 3.4)	5.86 (sd 4.09)
experimental n=32	4.516 (sd 3.52)	8.00 (sd 3.78)

The experimental group, who initially performed lower than the control students, surpassed the performance of the control students on the post-test. The experimental group demonstrated significantly more improvement in learning from reading than did control students. This study clearly indicates that implementing Project CRISS in world history classes makes a demonstrable impact on student learning of content.

These results support other research collected about program effectiveness in diverse settings over the last twenty years. For more information on the research basis for Project CRISS, see the technical reports available in the research section of [www.projectcriss.com](http://www.projectcriss.com).