

## **Evidence of Effectiveness**

### **1995**

CRISS® staff collected data from two adoption sites, West Middle School in Aurora, Colorado and North Central High School in Spokane, Washington. We followed the same procedure as outlined in our 1993 successful submission to the Program Effectiveness Panel. The research compared students who had received strategy instruction as part of regular course work to students who had not received direct instruction in strategies. At both sites, a CRISS inservice was conducted with teachers in the experimental classes. Teachers of the control classes did not participate in the inservice.

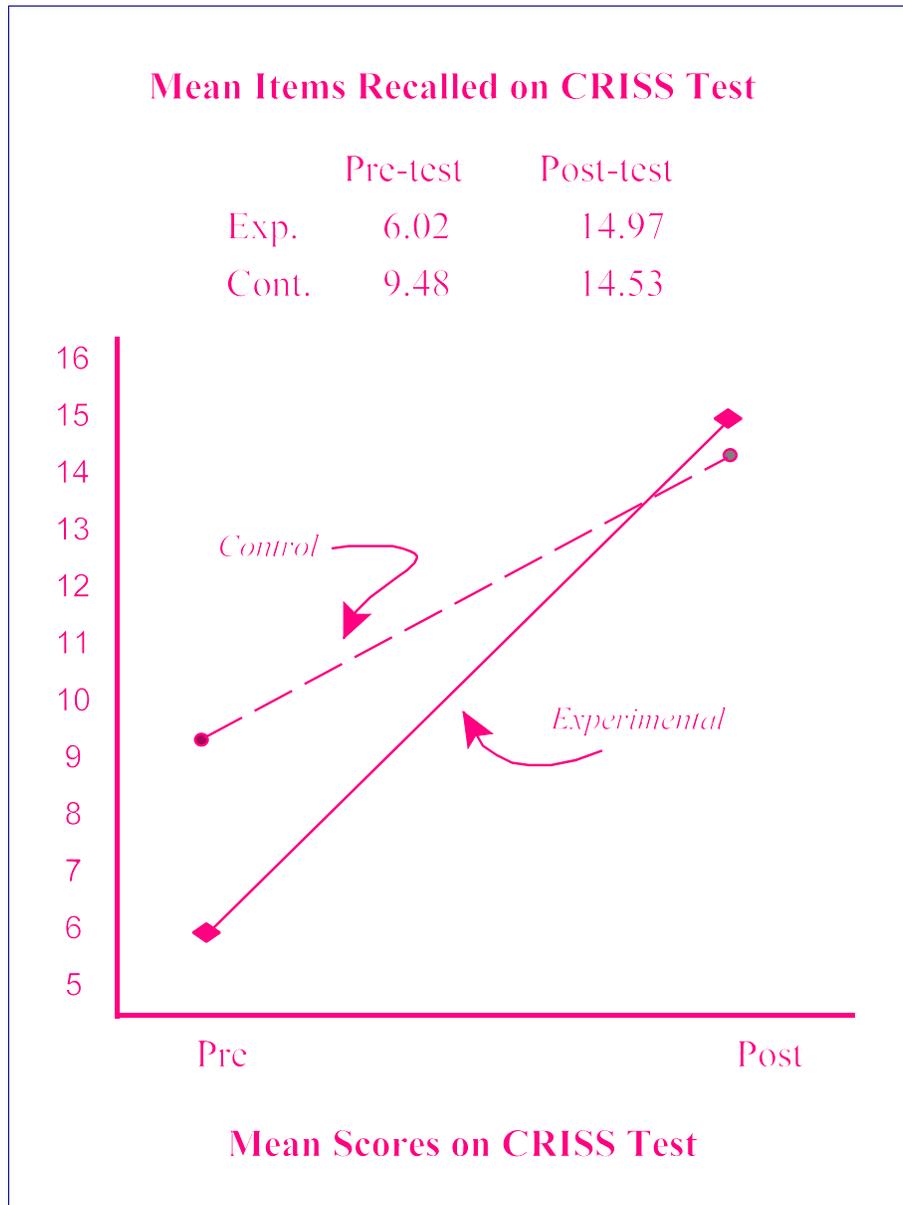
The experimental teachers incorporated strategy instruction as part of regular classroom instruction. In addition to teaching the content of their classes, the teachers systematically introduced students to a variety of learning strategies such as concept maps, two-column notes, charts, etc. The control students received their regular course instruction, but did not do the same systematic incorporation of strategies.

Both experimental and control students took the CRISS assessment test at the beginning of the school year (September) and again in May of the same school year. The pre- and post-tests consist of a 4-8 page, grade-level appropriate, reading selection on a science or history topic. The students read and study the material any way they want. The next day, they take a free-recall test where they write down everything they can remember. Our hypothesis is that both experimental and control classes will do similarly on the pre-test, but that the experimental students will show more growth on the post-test than the control students. In order to remember more effectively in this delayed recall situation, we hypothesize that students need to apply learning strategies to the reading and learning situation. Students who receive explicit instruction in strategy use should show more growth on the post-test than those who receive little if any instruction in how to learn. Our predictions were substantiated at both research sites.

### **Spokane, Washington**

In Spokane, Washington, we conducted the experiment in three high schools. We selected experimental subjects from a high school where teachers had received a CRISS workshop during the summer of 1994. The control students came from two other Spokane high schools with faculty not having a CRISS training. It turned out however, that our groups were not equivalent. One control group was comprised of “honor” students, while our experimental group was made up of regular education students. Two classes participated as the experimental group (n=44) and two as the control (n=45). Given this situation, our goal was to see if the control students could end up performing just as well as the honor students. As noted in figure 1, our predictions were substantiated. The experimental group showed a gain 148.67% while the control group gained 53.27%.

**Figure 1**



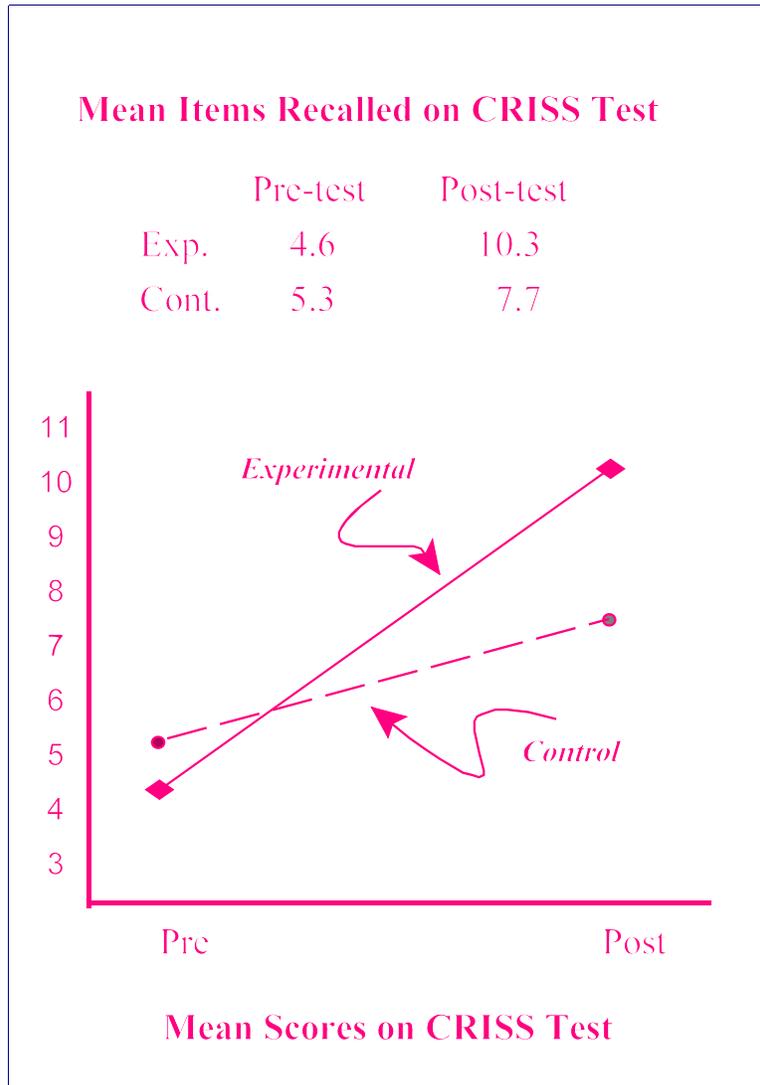
**Aurora, Colorado**

The second research situation was in a middle school in Aurora Colorado. These data were collected on eighth graders. The students in both the experimental and control groups came from the same school. However, one team of teachers (mathematics, language arts, social studies, and science) participated in a CRISS workshop; the teachers in another team had not taken the

workshop. In this school, the teachers have a team planning time, where they worked collaboratively on content and strategy instruction. The experimental team students received systematic strategy instruction as part of their course material. There were 107 students in the experimental group and 88 in the control group.

The same testing procedure occurred except that a different reading selection was used which was a grade appropriate for eighth grade students. Testing occurred in September, and again in May of the 1994-5 academic year. See figure 2 for a summary of the data.

**Figure 2**



Again, the results were similar. Students in the experimental group recalled significantly more information than students in the control group.

The students in the experimental group were also administered a survey about their own strategy use. A copy of the survey and the results are found on the following pages. These data reveal that the experimental students were using a substantial number of CRISS strategies.

## CRISS SURVEY RESULTS

(four classes - combined)

### Questions

	1	2a	2b	2c	2d	3	4	5	6	
Venn Diagram	29	19	34	6	19	36	19	17	18	
Column Notes	51	35	20	14	21	38	28	37	14	
Power Thinking	12	10	1	6	4	8	1	6	1	
Spool Papers	14	10	4	19	18	15	14	13	17	
Webbing		14	6	12	15	13	22	10	14	15
RAFT	2	4	1	3	5	3	6	7	9	
KWL	8	6	2	2	6	4	8	6	16	
Summary		1				1				
Mystery Pot	3		9	4	5	1	1	1	15	
Modeling								2		
TGT	2		3	9	4	3	2			
Definition						1				
Outline	1		2			1		1		
Framed Paragraph			1							
Open-ended Questions		6	2	3	4	5	1	3	2	17
Who Am I?				1		1				
Catagorize									1	
Vocabulary				1		3	2	1		
Graphic Organizers		1			2	2			3	
Listing							1			
Brainstorming		3	1		4			1		
Concept Mapping					1					
Note Taking	9	7		3	3	6	3	5		
Highlighting	1				1	1				

### The survey questions:

1. Which CRISS strategies do you use to study for test?
2. Which do you use:
  - A. working alone:
  - B. with a partner:
  - C. in co-operative groups:
  - D. during class:
3. Which CRISS strategies are the most helpful?
4. Which help you to understand reading assignments?
5. Which help in organizing writing assignments?
6. In math we have used the following strategies: (Asked of the Math class only.)

# CRISS SURVEY RESULTS

(Math Class)

## Questions

	1	2a	2b	2c	2d	3	4	5	6	
Venn Diagram	14	8	9	3	7	13	3	5	18	
Column Notes	14	10	4		5	11	4	5	14	
Power Thinking	6		1	2	3	2	1		1	
Spool Papers	13	6	1	5	9	8	5	7	17	
Webbing		5	1	4	3	7	4	4	4	15
RAFT	2	3		1	3	1	3	5	9	
KWL	7	5	1	2	5	4	3	5	16	
Summary										
Mystery Pot	3		5	4	3	1	1	1	15	
Modeling										
TGT	2		1	3	1	2	1			
Definition										
Outline										
Framed Paragraph										
Opened Questions		6	2	3	4	5	1	3	2	17
Who Am I?				1		1				
Catagorize										
Vocabulary										
Graphic Organizers										
Listing										
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  - A. working alone:
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  - C. in co-operative groups:
  - D. during class:
3. Which CRISS strategies are the most helpful?
4. Which help you to understand reading assignments?
5. Which help you in organizing writing assignments?
6. In math we have used the following strategies: (Asked for the Math class only.)

## CRISS SURVEY RESULTS

(Language Arts Class)

### Questions

	1	2a	2b	2c	2d	3	4	5	6
Venn Diagram	5	5	12		3	3	4	1	
Column Notes	9	6	1	4		3	3	4	
Power Thinking		2			1	1			
Spool Papers		3	2	4	4	2	3	3	
Webbing		3	1	2	2	2	4	3	2
RAFT			1	2	1	2	1	2	
KWL	1	1	1		1		4	1	
Summary									
Mystery Pot			1		1				
Modeling									
TGT			2	6	3	1	1		
Definition									
Outline									
Framed Paragraph			1						
Opened Questions									
Who Am I?									
Catagorize									1
Vocabulary									
Graphic Organizers		1			2	2			3
Listing									
Brainstorming		3	1		4			1	
Concept Mapping					1			1	
Note Taking	9	5	2	3	3	6	3	5	
Highlighting									

### The survey questions:

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2. Which do you use:
  - A. working alone:
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  - C. in co-operative groups:
  - D. during class:
3. Which CRISS strategies are the most helpful?
4. Which help you to understand reading assignments?
5. Which help you in organizing writing assignments?
6. In math we have used the following strategies: (Asked for the Math class only.)

# CRISS SURVEY RESULTS

(Science Class)

## Questions

	1	2a	2b	2c	2d	3	4	5	6
Venn Diagram	4	4	10	3	3	8	7	6	
Column Notes	14	14	5	6	13	13	10	9	
Power Thinking		3		2		2		2	
Spool Papers			1	5	2	1	3	1	
Webbing		4	3	5	7	4	7	1	5
RAFT									
KWL							1		
Summary									
Mystery Pot			3		1				
Modeling									
TGT									
Definition									
Outline									
Framed Paragraph									
Opened Questions									
Who Am I?									
Catagorize									
Vocabulary			1	1		3	2	1	
Graphic Organizers									
Listing									
Brainstorming									
Concept Mapping									
Note Taking									
Highlighting	1				1	1			

### The survey questions:

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  - D. during class:
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5. Which help you in organizing writing assignments?
6. In math we have used the following strategies: (Asked for the Math class only.)

# CRISS SURVEY RESULTS

## (Social Studies Class)

### Questions

	1	2a	2b	2c	2d	3	4	5	6
Venn Diagram	6	2	3		6	12	5	5	
Column Notes	14	5	10	4	3	11	11	19	
Power Thinking	6	5		2		3		4	
Spool Papers	1	1		5	3	4	3	2	
Webbing		2	1	1	3		7	2	3
RAFT		1			1		2		
KWL									
Summary		1				1			
Mystery Pot									
Modeling								2	
TGT									
Definition						1			
Outline	1					1		1	
Framed Paragraph									
Opened Questions									
Who Am I?									
Catagorize									
Vocabulary									
Graphic Organizers									
Listing							1		
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