

# Research: The LEARN Strategy PD CD Program

## Overview

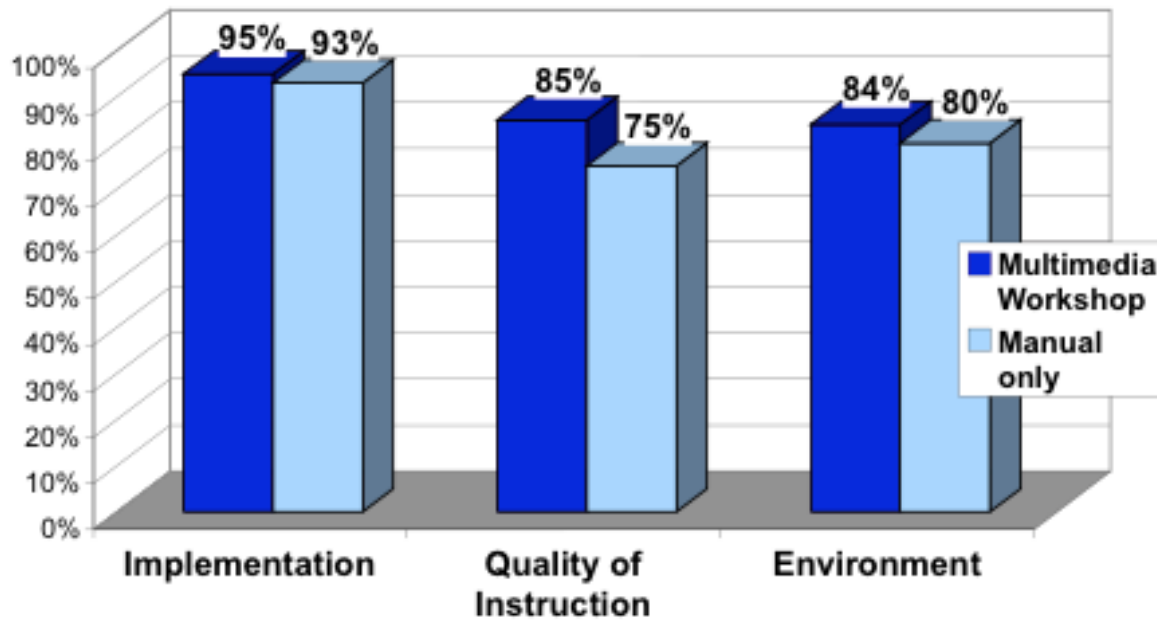
The LEARN Strategy is used by cooperative groups to learn information together. This professional development program was designed to provide instruction to teachers so that they can teach the LEARN Strategy to their students. This research study was conducted in 16 fifth-grade general education classes. Five teachers participated in this CD program (hereafter referred to as the "multimedia workshop") to learn how to provide instruction in the LEARN Strategy. They taught a total of 92 students the strategy. Six additional teachers simply read the instructor's manual for the LEARN Strategy and taught the strategy to their 120 students. Five additional teachers and their 81 students served as comparison classes. The comparison teachers did not teach the LEARN Strategy to their students and did not receive any instruction related to the LEARN Strategy. The teachers were randomly assigned to the groups.

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## Results

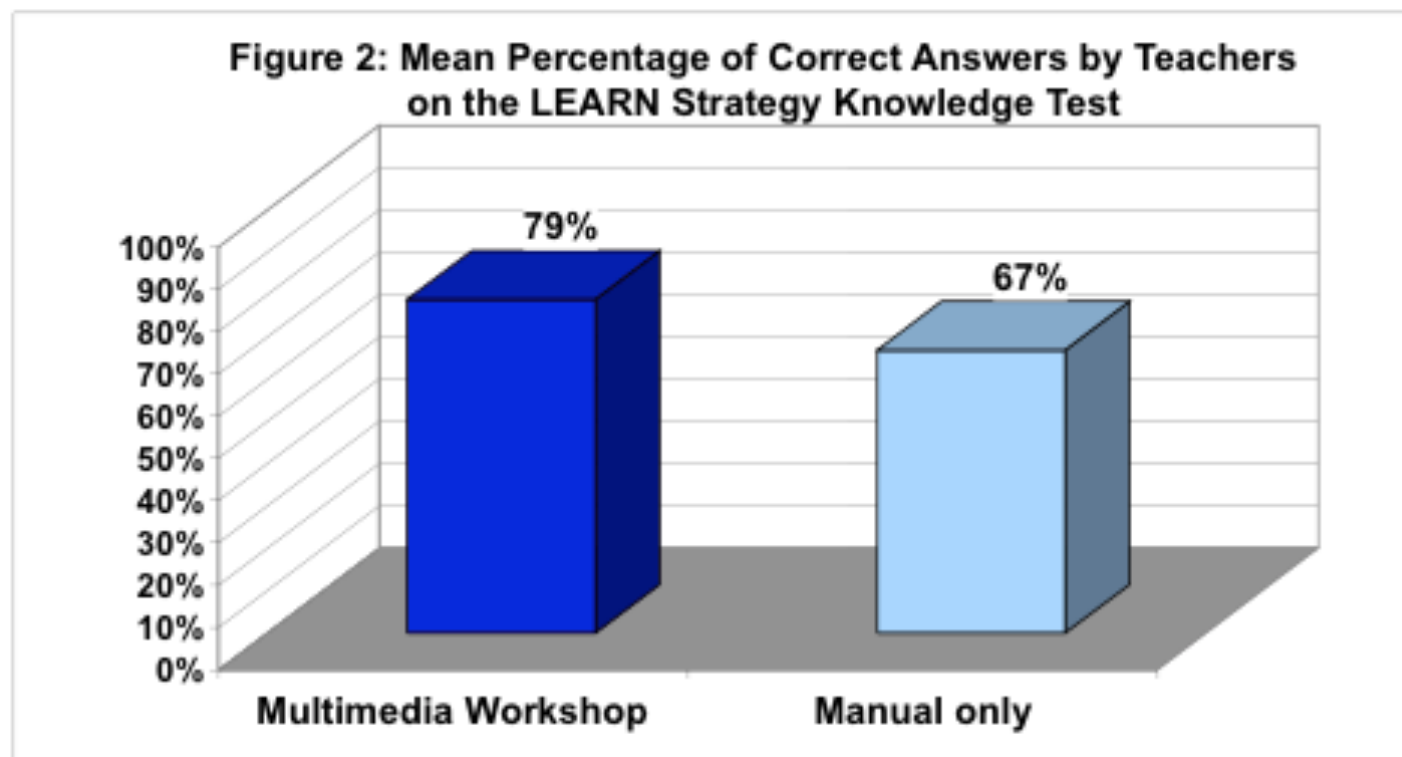
Measures were gathered on the fidelity of the multimedia workshop teachers' and manual-only teachers' implementation of the instruction, their quality of instruction, and the quality of the instructional environment. The results are shown in Figure 1. No differences were found between the results for the two groups of teachers who received instruction

**Figure 1: Mean Percentage Scores Earned by Teachers for All Lessons Combined**



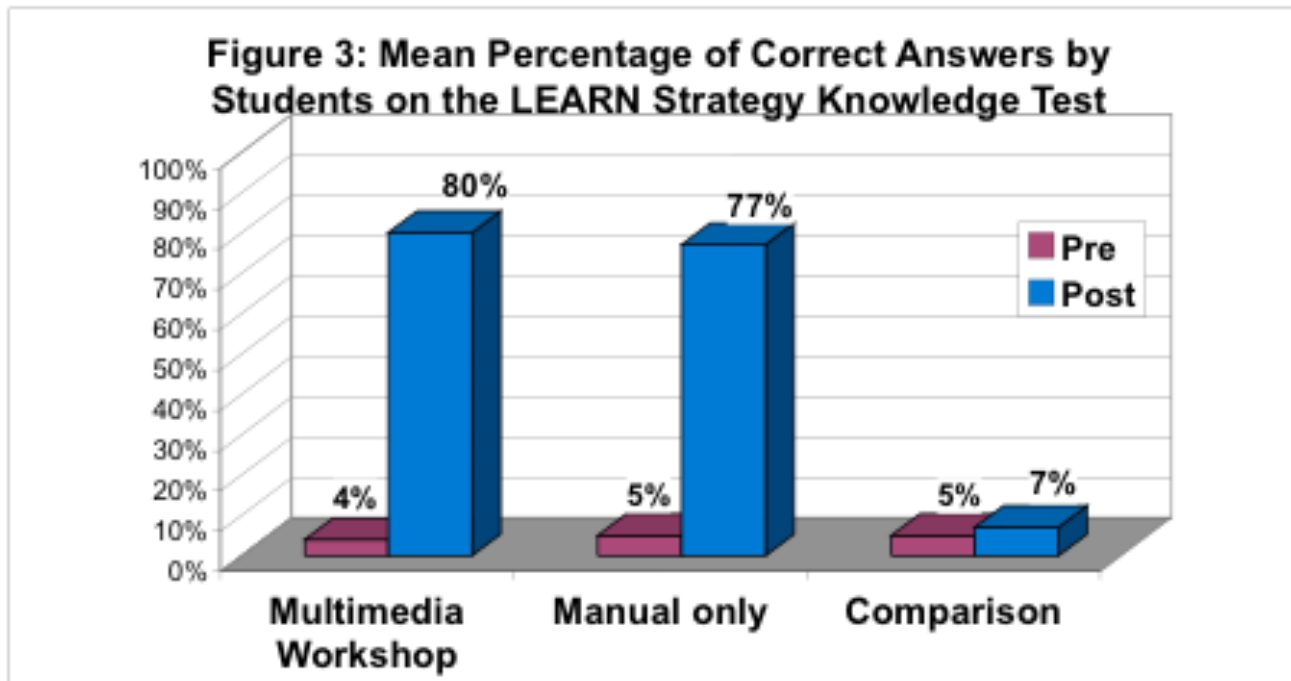
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Figure 2 displays the mean percentage scores the two multimedia-workshop and manual-only teachers earned on a test of their knowledge of the instructional methods and the LEARN Strategy. No difference was found between the test scores for the two groups,  $F(1,9)=1.07$ ,  $p = .328$ .



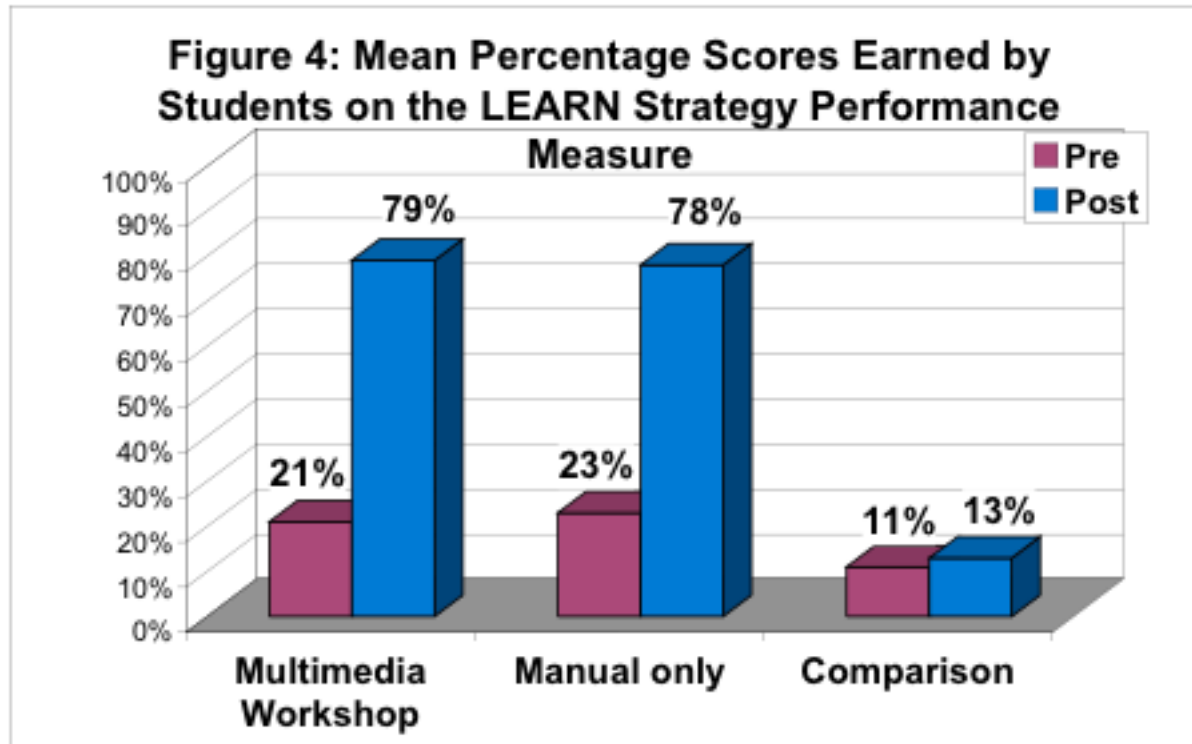
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Figure 3 displays the mean percentage scores earned by students of the three groups of teachers on a written test of their knowledge of the strategy. The data were analyzed comparing the three groups of students' raw posttest scores while controlling for the pretest scores. The results showed that the adjusted mean scores on the posttests were significantly different,  $F(2,13)=52.7$ ,  $p = .0001$ . Follow-up comparison tests revealed significant differences between the posttest scores earned by the comparison and the multimedia-workshop groups,  $t(1, 13.3)=9.01$ ,  $p < .0001$ , and between the comparison and the manual-only groups,  $t(1, 13)=8.99$ ,  $p < .0001$ . The posttest scores of the multimedia-workshop group and the manual-only group were not statistically different from each other.



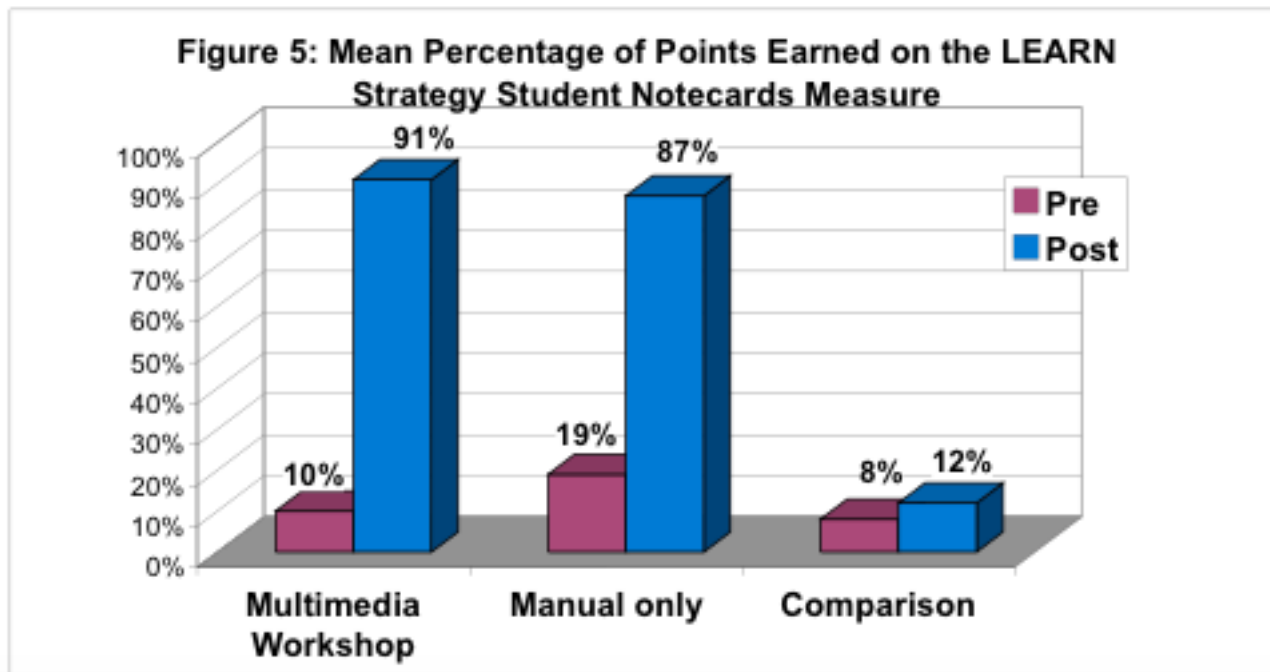
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Figure 4 displays the mean percentage of points earned by the students as they used the LEARN Strategy in cooperative groups in their classrooms to study information together. These performance data were analyzed comparing the three groups of students' posttest raw scores while controlling for the pretest scores. The results showed that the adjusted mean scores on the posttests were significantly different,  $F(2, 12.2)=33.21$ ,  $p<.0001$ . Follow-up comparison tests revealed significant differences between the posttest scores of the comparison and the multimedia-workshop groups,  $t(1, 12.2)=6.97$ ,  $p<.0001$ , and of the comparison and the manual-only groups,  $t(1, 12.3)=7.26$ ,  $p<.0001$ . The posttest scores of the multimedia-workshop group and the manual-only group were not statistically different from each other.



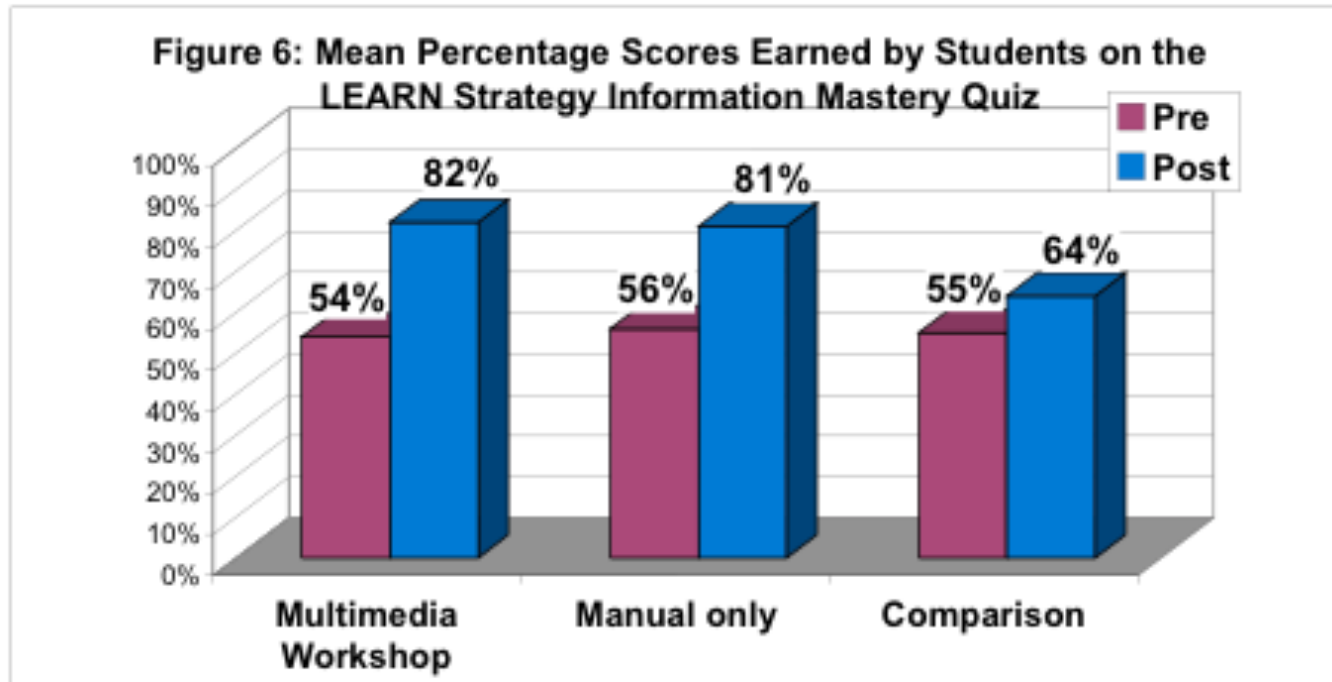
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Figure 5 displays the mean percentage of points earned by the students on the study notecards they created in their cooperative groups. The notecard data were analyzed comparing the three groups of students' posttest raw scores while controlling for the pretest scores. The results showed that the adjusted mean scores on the posttests were significantly different,  $F(2, 13.1) = 37.34$ ,  $p < .0001$ . Follow-up comparison tests revealed significant differences between the posttest scores of the comparison and the multimedia- workshop groups,  $t(1, 13) = 7.71$ ,  $p < .0001$ , and between the comparison and the manual-only groups,  $t(1, 13.3) = 7.37$ ,  $p < .0001$ . The posttest scores of the multimedia- workshop group and the manual-only group were not statistically different from each other.



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Figure 6 displays the mean percentage scores earned by the students after they were asked to study the information in a short reading passage in their cooperative groups and then take a test over the information independently. The Information Mastery Quiz data were analyzed comparing the three groups of students' posttest raw scores while controlling for the pretest scores. The results showed that the adjusted mean scores on the posttests were significantly different,  $F(2, 12.2) = 15.34$ ,  $p = .0005$ . Follow-up comparison tests revealed significant differences between the posttest scores of the comparison and the multimedia-workshop groups,  $t(1, 12.6) = 5.03$ ,  $p = .0003$ , and of the comparison and the manual-only groups,  $t(1, 12.2) = 4.69$ ,  $p = .0005$ . The posttest scores of the multimedia-workshop group and the manual-only group were not statistically different.



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## Conclusions

These results show that the Professional Development CD Program is effective in instructing teachers in how to teach the LEARN Strategy to students. There were no significant differences between multimedia-workshop groups and manual-only groups of teachers and students, and both groups of experimental students performed significantly and substantially better than the comparison students on all three student measures. Thus, the professional development CD program for teachers associated with the LEARN Strategy is effective in producing student change.

## Reference

Vernon, D.S. (2003). *Effects of a professional development software program for the LEARN Strategy Program: Progress Report*. SBIR Phase II #R44HD36139. Washington, D.C.: National Institute of Child Health and Human Development.



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