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ABSTRACT

This study was part of the evaluation of Project INSTRUCT, a Title III ESEA reading project. Project schools rated high on implementation were paired with similar control schools. Samples of 165 second-grade students were randomly selected from project and control schools. Covariance procedures were used to compare word knowledge, reading, and spelling scores on the Metropolitan Achievement Test (MAT). Previous achievement and ability scores were used as covariates. Project students scored higher on Word Knowledge and Reading. Differences in Spelling, which was not part of the project, were not significant. The results are consistent with previous evaluation findings. (Author/DEP)

An Unobtrusive Experimental Evaluation of a Systems Approach for Teaching Reading*

by

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This study was conducted as part of the ongoing evaluation of Project INSTRUCT, a reading project hosted by the Lincoln (NE) Public Schools and funded by Title III, ESEA.

Project INSTRUCT is an acronym for Instructional System for Teaching Reading Using Continuous Progress Technology. The system is based on an array of essential skills in word attack and reading. Mastery tests are used to place students on the array and to monitor progress. Instruction is focused through the grouping and regrouping of students so that they are always working on an appropriate skill building activity.

The achievement oriented goals of Project INSTRUCT are (1) to improve reading achievement and (2) prevent reading failure among primary students. This study focused on the effect of participation in Project INSTRUCT on achievement measured by standardized test scores.

Perspective

Two studies conducted during the 1971-72 school year indicated that primary students in Project INSTRUCT schools tended to score higher on the reading subtests of nationally normed tests than students in schools not using Project INSTRUCT. Both studies had technical and/or theoretical shortcomings. The first study was a comparison of the stanine distribution in Project INSTRUCT and non-Project INSTRUCT schools. The second was an analysis of covariance study of student achievement. The second study was based on the performance of 90 students from six Project INSTRUCT schools and 90 students from non-Project INSTRUCT schools. Implementation of the Project INSTRUCT system was not taken into account.

The results of the first study indicated that the proportion of students that received high stanine scores (7 - 9) in reading and reading related tests was greater in schools using Project INSTRUCT than in similar schools not using Project INSTRUCT. The proportion of students that received average scores (4 - 6) also was greater. Consequently a smaller proportion of students in Project INSTRUCT schools received low (1 - 3) stanine scores. There were no differences between stanine distributions in Project INSTRUCT

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schools and non-Project INSTRUCT schools prior to the implementation of Project INSTRUCT. The results of the second study indicated that students in Project INSTRUCT consistently scored higher than comparable control groups on the reading related subtests of a nationally normed achievement test, the Metropolitan Achievement Test. The differences, however, were not statistically significant.

The purpose of this study was to confirm the findings of these two earlier studies and to control for the additional factor of degree of implementation of Project INSTRUCT.

Methodology

The basic analytical procedure was analysis of covariance. Three separate analyses were conducted utilizing three criterion variables. The three variables were the Word Knowledge, Reading, and Spelling subtests of the Fall 1973 administration of the Primary II Metropolitan Achievement Test. The raw scores on the Word Knowledge and Reading subtests of the Fall 1972 administration of the Primary I Metropolitan Achievement Test and percentile scores from the Fall 1972 administration of the Otis Lennon Mental Ability Test were used as covariants. All tests were administered as part of the normal district wide fall testing program.

Although Project INSTRUCT was developed for use with students in grades one through three, the study was restricted to students in the second grade. The achievement and ability scores of a random sample of 330 students, 165 from Project INSTRUCT schools and 165 from non-Project INSTRUCT schools, were analyzed. The sample of Project INSTRUCT students was selected from a pool of second grade students who had attended schools that had successfully implemented Project INSTRUCT. The criterion for successful implementation of Project INSTRUCT by a school was a score of 300 points or higher on a 550 point implementation scale. Twelve of the 30 elementary schools in the district participated in Project INSTRUCT during the 1972-73 school year. Eleven of the 12 received implementation scores that exceeded the 300 point minimum. The eight Project INSTRUCT schools selected to participate in the evaluation included eight of the nine schools that achieved a score of 350 points or higher on the implementation scale. Marginal schools, schools with implementation scores greater than 300 but less than 350 were eliminated from consideration. The ninth school that surpassed the 350 point cutoff was eliminated from the study because it had been used by Project INSTRUCT as a developmental school. The implementation scores of those eight schools ranged from 361 to 476. Each of the eight Project INSTRUCT schools was then paired with a non-Project INSTRUCT school. The pairs were matched on (1) general socio-economic climate, (2) organizational pattern, multi-unit or conventional, and (3) compensatory education target school status. Equal numbers of students were then randomly selected from the paired Project INSTRUCT and non-Project INSTRUCT schools.

Results and Conclusions

The adjusted raw scores for the Project INSTRUCT and non-Project INSTRUCT students are presented in Table I.

Significant differences favoring the Project INSTRUCT students were found on two of the three subtests. The difference on the Word Knowledge

TABLE I

Adjusted Raw Scores on the Primary II
Metropolitan Achievement Test

	Project INSTRUCT	Control	Difference
Word Knowledge	33.85	32.25	1.60**
Reading	35.30	33.84	1.46*
Spelling	22.42	21.68	.74

**Significant at the .01 level of confidence.
*Significant at the .05 level of confidence.

subtests was significant at the .01 level of confidence, while the difference on the Reading subtest was significant at the .05 level of confidence. The difference between the mean scores on the spelling subtest was not significant; however, spelling was not formally taught as part of Project INSTRUCT during the 1972-73 school year.

Discussion

The results of this study are consistent with the results of the 1971-72 achievement studies. The Project INSTRUCT students scored higher on the Word Knowledge, Reading, and Spelling subtests. The differences between the Project INSTRUCT and control samples were larger the second year. The more favorable results are not surprising since (1) the first year was a developmental year, and not all the materials necessary to fully implement Project INSTRUCT were available for the entire year; (2) neither the Project INSTRUCT staff nor the schools had experience in implementing Project INSTRUCT during the first year; and (3) the 1972-73 study was limited to students from schools that were the most successful in implementing Project INSTRUCT. During the first year of the project only a few schools actually tried to implement Project INSTRUCT; therefore, it was impractical to try to exclude schools who had trouble implementing Project INSTRUCT from the study of achievement.

The second year study was also consistent with the first year study in that the differences between the Project INSTRUCT and control groups on the Spelling subtest were smaller than the differences on the other subtests.

During these two years Project INSTRUCT did not include a formal spelling program; the project dealt exclusively with the word attack and reading skills. The results of both achievement studies reflect this emphasis. The difference on the Spelling subtest was the only one that was not statistically significant. This pattern supports the thesis that Project INSTRUCT affects reading achievement.

Conclusion

The results of the 1972-73 evaluation of student achievement indicate that Project INSTRUCT does influence student achievement in a positive direction. The scores of students from Project INSTRUCT schools were significantly higher than the scores of a comparable sample of students from control schools on the Word Knowledge and Reading subtests. These findings were consistent with the findings of an earlier study of student achievement and with an analysis of the score distributions in Project INSTRUCT and non-Project INSTRUCT schools.

Significance

The study is an example of an unobtrusive evaluation study based on a traditional research paradigm that was conducted in a public school setting. Achievement and ability scores were sampled at the central office without involving teachers and/or administrators. Implementation scale scores that were used to identify schools that had satisfactorily implemented the program were already available from a previous evaluation study. Results indicate that the program was a success.