CALIFORNIA STATE UNIVERSITY, NORTHRIDGE

AN INVESTIGATION INTO A PERFORMANCE SUPPORT CONTRACT AND
ITS EFFECT ON READING ACHIEVEMENT

A thesis submitted in partial satisfaction of the requirements for the degree of Master of Arts in
Education

by

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ABSTRACT

AN INVESTIGATION INTO A PERFORMANCE SUPPORT CONTRACT AND ITS EFFECT ON READING ACHIEVEMENT

by

Linda Allemeier Hanaway

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This study investigated the relationship between a reading program devised by American Learning Corporation and implemented at a Los Angeles public school during 1972-75 and the reading achievement test scores of the participating students.

The identification of relationship, or lack of relationship, between learning experiences in the Reading Achievement Center and reading achievement scores provided the data for achieving the purpose of this study. An ex post facto design seemed most appropriate as instruction and subsequent testing had taken place prior to the inception of the study. Third and fourth grade students of the school were divided into groups on the basis of the length of their instruction in the Reading Achievement Center. Mean raw scores were computed and
comparisons between the means were made using the t-test for significance.

The findings indicated no differences when comparing the third grade groups and the fourth grade groups one year after program completion; however, significance was attained at the .05 level when comparing the fourth grade groups two years after program completion.

The study concluded that such a program appeared to enhance the reading achievement of participating students. Recommendations were made for future studies and for the consideration of possible use of performance support contracts in public schools.
CHAPTER I
THE PROBLEM

Introduction

Performance contracting and its variations are relatively new to the field of education. Research in this area is needed not only to provide information in general about performance contracting but also to enable educators to better evaluate and make decisions pertaining to such programs. This study was pursued to obtain information which would add to the current body of knowledge concerning contracting between schools and private firms in the improvement of reading achievement.

Background of the Study

Reading is considered by educators and laymen to be one of the most important skills taught in the schools. Reading and spelling disabilities have been described as early as 1896 by Wyckoff, and in 1907 by Witmer (12:160-179). Yet, these same reading failures are still with us today. Educators have tried various methods of reading instruction and a variety of innovations in their reading programs. Recent innovations include methodological approaches, such as the Initial Teaching Alphabet (i.t.a.), as well as organizational modifica-
tions such as open structure classrooms, modular scheduling, individualized reading, language experience, programmed materials, linguistic materials, and automated equipment.

Another recent addition to educational terminology is accountability (25:107-119)(40:1-5). Accountability is the application of a term and idea borrowed from industry; one needs to be held accountable for results. There has been, as Mecklenburger stated, a growing demand to link dollars spent for education to results achieved from students. Increased and accelerating costs, poor academic performance of minority children, and inconclusive results of federal compensatory education projects (totaling, since 1965, in the billions of dollars) are probably important casual [sic] factors. (34:49)

Since the introduction of accountability into education, educators have sought assistance from outside sources for evaluation as well as development. Feldmesser (16:3) and Mecklenburger (32:vii) both noted that in most cases these outside sources have been private companies who have contracted with individual schools under various types of contractual agreements. In some cases, the agreement has been one in which the fee "is to depend upon the measured amount of learning acquired by those students during the contract period" (16:3). In other cases, the fee may be a minimum plus an increment for additional gains (8:26). Most of these contracts include a "turnkey" clause. In this phase of the contract, the school assumes
more and more of the responsibility and the private company phases itself out. A variation is the performance support contract in which the school purchases not only materials but training and other support devices (8:39). This is, in essence, purchasing the turnkey phase without the performance contract step. Schools have also tried a competitive partnership in which "major publishing companies compete with each other, but in partnership with a school system, in tackling a specific educational problem" (36:8).

Statement of the Problem

According to newspaper accounts in recent years, reading achievement scores in Los Angeles have been considerably below the national and state averages. For example, on a scale of 100 with the state average being 50, second graders showed a score of 29 in 1972-73 and 24 in 1973-74. Looking at this same information on a national 100-point scale with the average being 50, these same second graders scored 44 in 1972-73 (30:4). At a higher grade level, the results of such a condition appeared magnified:

More than half of the students in four high school graduating classes studied by the 1973-74 Los Angeles County Grand Jury were practically unable to read...56% of the senior students categorized as "practically nonreaders" tested out at fourth grade levels or below. The 21% at "acceptable levels" were in the 10th to 12th grade category. (15:1)
Educators have tried to improve this situation through a variety of means. The Miller Unruh program focused on better teacher training. A special "preferred reading" program gave individual schools funds for teacher selected reading materials, additional training in reading instruction, and classroom aides to help teach reading (29:3). Some schools sought assistance from outside sources which has proven to be controversial. Since this was a relatively new approach, programs using assistance from outside the field of education need to be evaluated and their results closely scrutinized.

This study described a reading program devised by an outside source and implemented within one of the Los Angeles schools. In addition, it attempted to determine the success of the program through an examination of the reading achievement test scores at the school over a three-year period.

Purpose of the Study

The purpose of the study was to investigate the effects of a reading laboratory program (the Reading Achievement Center) supplied by a private firm (the American Learning Corporation) and the reading achievement of students who participated in the program. The study attempted to determine whether the learning experience provided by the Reading Achievement Center increased
the reading scores of the students as measured by standardized group achievement tests.

Questions to be Answered

The study sought to answer the following questions:

1. To what extent, if any, did the learning experience in the Reading Achievement Center improve the reading scores of students who participated in the program?

2. Is there a difference between the reading achievement test scores of students who participated in the program for (a) one year and (b) two years?

Research Hypothesis

The following research hypothesis was tested: Is there a relationship between learning experience in the Reading Achievement Center and achievement in reading?

Definition of Terms

Accountability - This term refers to the theory that teachers and school systems may be held responsible for actual improvement in pupil achievement.

Competitive partnership - A type of contract in which several companies compete with one another, each in partnership with the school to solve an educational
problem.

Independent Educational Accomplishment Audit (IEAA) -
This is sometimes shortened to "outside auditor".
It consists of an outside group who objectively evaluates the operation of the program and certifies that the claimed educational results have been accomplished.

Management Support Group (MSG) - An outside organization which provides technical assistance to the school district. It may conduct the needs assessment, assist in writing the proposal requests, and meet with bidders.

Needs assessment - A systematic attempt to specify what educational accomplishments are needed and to rank their priority by seeking appropriate counsel and advice.

Performance contracting - A procedure whereby a board of education engages a private firm to conduct a program of educational improvement guaranteed by the firm to achieve satisfactorily predetermined objectives, called performance criteria, with compensation paid by the board on a scale related to performance.

Performance support contract - A type of contract in which the school purchases the materials and training but omits the guaranteed results phase of performance contracting.
Rapid Learning Center (RLC) - These were the redesigned classrooms that Dorsett Educational Systems used in their performance contract programs.

Reading Achievement Center (RAC) - Used by American Learning Corporation, this term designates the redesigned classrooms in which their particular reading program takes place.

Request for Proposal (RFP) - A detailed set of specifications stating the services to be performed, any restrictions or standards to be met, and the approximate amount of money to be invested. It is then sent to prospective bidders.

Turnkey - This refers to the internalizing of the program. It is when the school district takes over a system which had been introduced and operated by an outside company.

Outline of Remainder of Thesis

In Chapter II, a review of literature pertinent to the study is presented. In Chapter III, the procedures used in this study are discussed. In Chapter IV, the findings are stated and analyzed. In Chapter V, the study is summarized, conclusions are drawn, and recommendations for further study are made.
CHAPTER II
REVIEW OF LITERATURE

Overview

The review of related literature was divided into three definite areas. First, a history of performance contracting as a derivative of accountability was presented. Included in this section was a brief description and background information on a few of the people whose names have become prominent since the beginning of performance contracting. Second, two of the earliest and most publicized performance contracts, Banneker and Texarkana, were examined along with variations of these contracts. Third, limited research data, dominated by Rand Corporation and the Office of Economic Opportunity Project, was reviewed.

History of Performance Contracting

Mecklenburger (1972) found some historical parallels to performance contracting: Herbert M. Kliebard's description of the 1910's and 1920's as a time of "growing acceptance of a powerful and restrictive bureaucratic model for education which looked toward the management techniques of industry as its ideal of excellence and source of inspiration," John Franklin Bobbitt's reference
in 1912 to the need for educational engineers; the payment by results tried and abandoned in England and Canada; and possible parallels to recent Russian experiments (32:4-5).

Campbell and Lorion (1972) summarized the various background factors contributing to the accountability movement in education as "our changing society, disenchantment with the schools, desire for school alternatives, and a cost-benefit frame of mind" (10:7). These concerns coupled with the following developments helped to accelerate the move toward accountability: (1) Lessinger's strong stand for accountability in education, as stated in *Every Kid a Winner* (25), and his subsequent position in the Office of Education; (2) Congressional pressure for demonstrated "results for federal funds expended" (32:53); and (3) President Nixon's Educational Reform Message to Congress on March 3, 1970 in which he stated:

> What we have too often been doing is avoiding accountability for our own local performance. We have, as a nation, too long avoided thinking of productivity of schools. Ironic though it is, the avoidance of accountability is the single most serious threat to a continued and even more pluralistic educational system. (10:14)

Although performance contracting was but one expression of the larger concept of accountability, it has been the most widely used and publicized form to date. In 1969-70, two performance contracts (Banneker and Texarkana) were implemented in American public schools, and by 1970-71, there were at least sixty such agreements.
(10:10). There was no one type of performance contract. Each contract was unique in that it was an agreement between a contractor and a school to achieve a certain goal. Most in 1969-71 involved reading and/or math; however, one covered all subjects (Banneker in Gary, Indiana), and another was vocationally oriented (Dallas, Texas). The number of students involved in the contractual programs ranged from 28 to 15,000 with the amount of the contract ranging from $3,000 to $600,000. A majority of the projects were funded with federal monies: Office of Education, Title I, Title III, and Title VIII; Model Cities; and Office of Economic Opportunity. A few projects used local funds (10:127-31).

Prominent individuals, since the advent of performance contracting in 1970, include:

1. Leon Lessinger, Associate Commissioner of Education in the U.S. Office of Education from 1968-1970, was responsible for the Elementary and Secondary Education Act. It was during 1968-69 that Federal guidelines for the expenditure of funds under this act mandated accountability provisions. The label "father of accountability" was linked with his name (32:53).

2. Charles Blaschke coined the term "turnkey" and played an instrumental part in many of the first performance contracts. His own corporation,
Education Turnkey Systems Inc., a management support group, specialized in performance contracting and turnkey operations. He was widely published and quoted in 1969 and 1970. He initiated a newsletter, Education Turnkey News, which later became a column in Nation's Schools magazine.

3. James Mecklenburger began a student project to "describe performance contracting in Gary" which became a "journalistic mini-career" (32:Preface). He has studied, analyzed, and described many performance contracts in detail (32, 33, 34).

**Early Performance Contracts**

A closer look at the two 1969-70 contracts, one at Banneker in Gary, Indiana, and one covering three schools in Texarkana, Arkansas, which served as models for many of the others, pointed out not only their similarities and differences, but also the problems involved in performance contracting in general.

**Texarkana Model**

Texarkana schools were planning for full racial integration in 1968. Planners expected a high dropout rate due to the differences in achievement levels between black and white students (11:13). Blaschke served as a consultant and recommended performance contracting for a
Dropout Prevention Program to be funded under Title VIII of the Elementary and Secondary Education Act. A competitive bidding procedure was used: a needs assessment was conducted and request for proposals sent to 113 companies. Of those who returned detailed proposals were: Behavioral Research Laboratories (BRL), Educational Development Laboratory (Division of McGraw-Hill), Macmillan Educational Services, RCA Services Company, and Dorsett Educational Systems. The last, Dorsett Educational Systems, was chosen.

Dorsett, a manufacturer of teaching machines, recommended that a combination of audio-visual equipment and programmed teaching materials be utilized with a heavy reliance on their own machines (AVTM-86). They proposed Rapid Learning Centers complete with carpeting and air conditioning. The program also featured extrinsic motivation ranging from green stamps to radios. The company guaranteed one year's growth per student for each 80 hours of instruction at a cost of $80 per student. They were to receive more money if the students achieved more or achieved the one year gain in less time. There was to be no payment if the student did not achieve the one year gain.

All of the 7th-12th grade students included in the program were to have been diagnosed as potential dropouts and were to be at least two years below grade level in
reading and math. They were also to have an I.Q. of 75 or above (10:30). Carpenter-Huffman, Hall, and Sumner of the Rand Corporation showed the racial division as 203 white and 148 black. They noted that, of the initial 219 students (132 were added later in the year), 57 had either lower than the minimum I.Q. or higher reading scores, and for 37 there were no initial test scores (ll:ll6). The teaching staff consisted of both professionals and paraprofessionals with a ratio of 1 professional and 1 paraprofessional to each 15 to 25 students per hour.

Texarkana and Dorsett agreed per the contract which tests would be used to measure student performance. It was also understood that Dorsett would analyze the tests to determine what vocabulary and skills the test sampled. The test was, therefore, the objective—the tests created the curriculum (32:64). From October, 1969, through May, 1970, 351 students attended the Rapid Learning Centers. The number of students tested was 123 for whom scores of phenomenal gains were published: December, 1969, 27 students after 28 hours of instruction had a 2.01 grade level increase in reading; February, 1970, after 89 hours of instruction, 51 students had 1.50 grade level increase in reading; March, 1970, after 120 hours of instruction, 45 students had 2.2 grade level increase in reading. The impression given was that the students tested has been chosen at random. However, the purpose of the program was
to bring students to grade level and then return them to the regular classroom, so those achieving best were tested first. In May, 1970, "teaching to the test" allegations were made and evidence found to support such claims (32:65-66).

Regardless of test results, the program appeared to be successful in dropout reduction: the dropout rate for those 351 students in the program was 6.8 percent, while that for the 235 equated control students was 17.9 percent. Further, for the 181 meeting the stated entry requirements, the dropout rate was 1.7 percent, while it was 12.4 percent for those 170 students not meeting the original criteria. It was, therefore, a particularly effective program for the population for whom it was designed (11:116).

Despite the various problems, the Dropout Prevention Program was continued and expanded the following year (1970-71). Turnkey classes served 145 former Rapid Learning Center (RLC) students. Texarkana repeated the bidding process and selected Educational Development Laboratory (EDL) as the contractor for the next year. This time payment was based 75 percent on standardized achievement tests and 25 percent on criterion-referenced tests. Even at $125-$150 per grade level increase, the contractor was not making any profit. EDL did well on the criterion-referenced test and poorly on the standard-
ized achievement test. Less than one-third of the students achieved one year's gain. The overall mean score was .48 years gain in reading. In 1971-72, Texarkana chose to operate the RLCs without an outside contractor (32:70-71).

Banneker Model

Banneker School, located in Gary, Indiana, was a sole source contract in that no request for proposals were sent out and no bidding was done. Mecklenburger summarized what had happened as follows:

By the time Banneker School opened its doors for teacher training in August and for students in September, what had begun a few months earlier as an idea between a school superintendent and a corporate president of similar disposition had mushroomed into a controversial educational project of national interest with racial, political, and educational implications which reached far beyond Gary: a private corporation was going to manage a public school—a black school with under-achieving students—and had guaranteed to achieve impressive learning gains for students. (32:23)

In general, the program was to reconstruct an entire existing school where Gordon McAndrew, superintendent of schools in Gary, found that "3 out of every 4 children in the inner city could not read at normal grade level" (32:11). Even though Behavioral Research Laboratories (BRL) was assuming responsibility for the entire curriculum, compensation was based entirely on reading and math scores. BRL's "A Proposal for a Performance Contract Curriculum Center" stated that, "At the end of three
years, BRL will refund the entire fee paid for any child who has participated in the program for three years but has not achieved at or above national norms as determined by standardized instruments" (32:19). BRL also specified that there be "no increase in cost. Therefore, the total annual charge per pupil under this contract will be $800, the average amount now spent per inner city pupil in Gary" (32:19). The total student population was to be 800 with transfers in and out of the program being permitted. Carpenter-Huffman, et. al., (Rand-11) saw many of BRL's changes as follows:

Viewed economically, the Banneker program substituted teaching materials and para-professionals for professional teachers. Viewed pedagogically, the program shifted the learning focus from teachers to materials... (The) organizational approach is best described as non-graded, small-group instruction, with differentiated staffing. (11:63-4)

No extrinsic motivational system was employed.

The program suffered many internal as well as external problems. In the beginning, the American Federation of Teachers, which claimed almost 100 percent of Gary's teachers as members, had expressed opposition to the plan at Banneker. There were objections from both the State and the teachers' union: teacher transfers, teacher-pupil ratio, certification of personnel, materials not on the state adopted list, and curriculum time allocations. Mecklenburger saw the conflict and resulting confrontation between Gary and the State of Indiana over
Banneker as a "sparring match also, for which Banneker was more the excuse than the cause" (32:13). He expressed the feeling that "Indiana is a rural, conservative state in which whites and Republicans dominate. Militant, impatient, impoverished Gary, in the state's northwest corner, black and Democratic, receives little sympathetic hearing" (32:13). However, the black minority had become a majority and in 1967 elected Richard Hatcher mayor, who appointed the school board. Alfonso Holliday, the board's 1970-71 president, was quoted as describing why the school board approved Banneker: "When you're at the bottom, all you can do is look up and try something different. We must be willing to be pioneers and no longer say our children can't learn" (32:15).

There was a financial crisis in the Spring of 1972, as well as a resulting teachers strike. Post-testing for payment and evaluation purposes was cancelled although the students did take the district tests administered to all Gary schools in the Spring. Poor teacher morale continued into the following year along with declining enrollment. These basic problems seemed unresolvable and the contract was cancelled as of December 31, 1972 (11:71-72).

The results of the program were difficult to interpret. First, the Metropolitan Achievement Test was used because it had been revised and, according to the Center
for Urban Redevelopment and Education in its proposal as the outside evaluator, "special efforts were made to eliminate irrelevance and cultural unsuitability which made earlier standardized tests inappropriate for the measurement of the achievement of the inner city child" (32:64). However, this test was not the one used in other Gary schools nor was it administered to a comparable population; therefore, comparisons of data were inappropriate.

Secondly, transfers in and out of the program were permitted. Third, the objective was for each student to be at or above grade level at the end of three years and, because of the cancellation, this never materialized. However, for students who would not be in the program three years, "the objective was interpreted to imply a month's advancement for a month's instruction in both reading and math" (11:73). Carpenter-Huffman, et. al., (Rand) summarized the Spring of 1971 test results as follows:

For the 546 students in the second to sixth grades, the average gains were 0.72 achievement years in reading and 1.18 in mathematics...41.0 percent of the students made a year's gain in reading and about 66.1 percent made a year's gain in mathematics. (32:41)

Mecklenburger summarized the results as follows:

During the first year at Banneker, 72.5%, or 396 of the 546 children in the program in grades 2-6, made average or better-than-average gains in reading, mathematics or both. Thirty-two percent, or 176 pupils,
made 1.5 years' gain or more. In addition, 90%, or 72 of 80 kindergarten children in the program, scored at or above national academic "readiness" norms, indicating the likelihood of their future success in school.

In the 1970-71 school year, student performance was measured in terms of gains between October 1 and June 1 administrations of the Metropolitan Achievement Tests. The 546 pupils measured in grades 2-6 in the Banneker program averaged 9.5 months growth in both reading and mathematics during the eight months between the two tests. (33:31)

Variations

In Portland, Oregon, Title I funds were used in the Spring and Summer of 1970 "to allow teachers or educational equipment vendors to demonstrate new procedures and to accept some degree of financial responsibility for the outcome" (32:70). Five one-semester contracts were let--two with individual teachers and three with technological companies. Although no data were given, Campbell and Lorion reported "favorable" results and post-testing that was "higher than expected" (10:39).

In Keokuk, Iowa, Title I funds were used somewhat differently. Five teachers visited Texarkana with the express purpose of adapting the program to meet the needs of their district. They adopted the idea (1) of paying teachers and aides according to student test performance, and (2) of using student incentives (32:70).

In Philadelphia, Pennsylvania, Behavioral Research Laboratories (BRL) contracted to supply the materials and training to 500 teachers. Essentially, BRL was
"guaranteeing" their materials. All students in grades 1-3 and underachieving students in grades 4-7 from a black inner city district (#4) participated in the program. This covered 15,000 students. The objective was one year's achievement for each student who met the 150-day attendance criteria. For those who attended less than 150 days, BRL received $20 each; if the objective was met, BRL received $40 each; if the objective was not met, BRL received nothing. The results split approximately into thirds: 4,929 achieved the year's gain; 4,985 did not achieve the year's gain; and 4,347 attended less than 150 days (34:119). However, for the total enrollment of 15,000, the mean score in reading achievement gain was 0.9 years. BRL lauded these results as "probably the finest ever achieved in an inner city" (33:16). Moreover, Education Turnkey Systems evaluated the project and concluded that students gained as much as one grade level above that reported and students with I.Q.'s below 75 did better than those with I.Q.'s above 75 (33:16-17).

Other sites along with the contractors included: Denver, Colorado (Dorsett Educational Systems), Providence, Rhode Island (New Century, a Division of Meredith Corp.), Gilroy, California (Westinghouse Learning Corp.), Norfolk, Virginia (Learning Research Associates), and many others. Campbell and Lcrion in their Appendix A, chart 60 known school districts that entered into performance contracts
1969-71. They showed the school system, source of funding, contracting company, amount of contract, system enrollment, number of students in the program, and the ethnic characteristics of the students (10:127-131).

Research--OEO Experiment

The Office of Economic Opportunity (OEO) in 1970 invested in a broad spectrum experiment to determine scientifically the value of performance contracting. In essence, OEO selected six contractors from those who had submitted bids for programs in 18 school districts. Each contractor was assigned to teach in three different cities. At each site 600 underachieving students were involved--100 each in grades 1-3 and 7-9. In addition there was to be a matched control group in each city. The actual cost of the experiment to OEO has been variously stated as $5.7 million (33:18), in excess of $6 million (11:21), and $7 million (32:81). The six contractors and their assigned cities were (1) Alpha Learning Corp. (Hartford, Connecticut; Grand Rapids, Michigan; Taft, Texas), (2) Learning Foundations (Bronx, New York; Duval County, Florida; Hammond, Indiana), (3) Plan Education Centers (Athens, Georgia; Selmer, Tennessee; Wichita, Kansas), (4) Quality Educational Development (Anchorage, Alaska; Dallas, Texas; Rockland, Maine), (5) Singer/Graflex (McComb, Mississippi; Portland, Maine; Seattle, Washington), (6) Westinghouse
Over 25,000 students representing every major low achieving ethnic group "from poor urban Anglos to Alaskan Eskimos" participated.

Education Turnkey Systems, Inc. provided management support. Battelle Memorial Institute conducted and analyzed all testing. Tests were administered at the beginning of the experiment and again at the close of the school year. During the 1970-71 school year, five interim tests were to be given not only to check on progress but to determine payment. A follow-up test in reading and math was to be given in 1971-72 to determine the degree of skill retention.

In addition to the performance contracts described above, two school systems, Mesa, Arizona and Stockton, California, were granted contracts by OEO on a different basis. In these contracts, the school districts subcontracted with the local teacher organization. These two projects provided incentives to students and teachers based on performance.

Campbell and Lorion provided the following description of the program taken from the standard contract between the school system and the educational firm:

Contractor has entered into an agreement with the Office of Economic Opportunity to participate in a nationwide test of
the effect of performance incentives on remedial education among disadvantaged children. Contractor recognizes its duty to improve the reading and mathematics skills of elementary and junior high school students who are now below standard. Subcontractor is willing to demonstrate an innovative instructional approach in teaching those needed skills. (10:17)

Each company used a different mixture of incentives, teaching machines, and/or reorganized texts and workbooks. Some did their own diagnostic testing. Paraprofessionals were used in various capacities.

The results of the OEO Experiment were released in January, 1972. Table I has been widely reproduced from the OEO Summary Report (33:23) (1:17-18) (11:30).
### TABLE I

**OEO SUMMARY OF RESULTS**

<table>
<thead>
<tr>
<th>Grade</th>
<th>Experimental Gain</th>
<th>Control Gain</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>2</td>
<td>.4</td>
<td>.5</td>
<td>-.1</td>
</tr>
<tr>
<td>3</td>
<td>.3</td>
<td>.2</td>
<td>+.1</td>
</tr>
<tr>
<td>7</td>
<td>.4</td>
<td>.3</td>
<td>+.1</td>
</tr>
<tr>
<td>8</td>
<td>.9</td>
<td>1.0</td>
<td>-.1</td>
</tr>
<tr>
<td>9</td>
<td>.8</td>
<td>.8</td>
<td>--</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Grade</th>
<th>Experimental Gain</th>
<th>Control Gain</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>2</td>
<td>.5</td>
<td>.5</td>
<td>--</td>
</tr>
<tr>
<td>3</td>
<td>.4</td>
<td>.4</td>
<td>--</td>
</tr>
<tr>
<td>7</td>
<td>.6</td>
<td>.6</td>
<td>--</td>
</tr>
<tr>
<td>8</td>
<td>.8</td>
<td>1.0</td>
<td>-.2</td>
</tr>
<tr>
<td>9</td>
<td>.8</td>
<td>.8</td>
<td>--</td>
</tr>
</tbody>
</table>

**NA:** A readiness test, rather than an achievement test, was used as the first grade pretest. There is no grade equivalent for the readiness test.
OEO in its Summary Report concluded:

The single most important question for all concerned with the experiment is: Was performance contracting more successful than traditional classroom methods in improving the reading and math skills of poor children? The answer...is 'No.' (11:31)

The conclusions were much the same for the two performance based incentives programs contracted for with the teachers' associations.

Reactions

Many of the problems encountered in the experiment were the same as those met by contractors elsewhere. OEO felt that it was measuring existing techniques. In reality, however, they seemed to be underwriting the development of programs. The companies felt that any profit would be minimal. The real advantages to them were the advertising, the opportunity for intensive research and development, and the prospect of opening the school market for learning systems (32:71, 84). Timing was a major problem. Many companies did not operate to their own satisfaction until November or later. The point of timing was emphasized in A Rand Educational Policy Study:

In the spring and summer of 1970 OEO designed and began the first stage of the 1970-71 program. This point needs to be emphasized. The fact that the time between conception and start of the largest experiment in education can be measured in months is an impressive feat of legal action, logistics, and public administration. In one sense, it was OEO's greatest
accomplishment. The other side of this accomplishment, however, is that contractors, school districts, and OEO were rushed into the experiment without adequate time for planning and coordination. (11:21-22)

The experiment was also of short duration— one year.

The use of standardized tests was often criticized. Battelle Memorial Institute had rejected the use of grade equivalent scores in their evaluation because they "possess psychometric distortions which might affect the results of statistical analyses" (32:87). However, OEO stressed grade equivalent scores. In addition, OEO's comparison of means could be misleading. For example, Mecklenburger stated that both success and failure were brushed beneath a statistical rug in that five sites had been relatively successful and one contractor had achieved nearly his full payment at one site. Other sites had been very unsuccessful. In some cities, certain aspects of the contractors' programs were later incorporated into the school programs. Additionally, Blaschke demonstrated that, even with modest achievement scores, some contractors had systems which were more cost-effective than conventional instruction (32:86-87).

From a different statistical standpoint, however, Page noted that:

The design eliminated ordinary upward regression, teaching of the test, and biasing of the evaluation—all three of them the bane of sound inference, but the comfort of those determined
to report favorable results. What was left was essentially improvement in the actual, general, transferable skills of reading and arithmetic. (35:116)

He also suggested that given the lowest-achieving students and usual instruction, the expected gains might be .7 of a year; and that:

in school ability the weak usually become weaker. That is, they maintain their relative position in standard deviations below the mean, and this means a greater and greater lag behind their abler classmates. (35:116)

He hypothesized that knowing these things, the OEO, school districts, and contractors:

really believed that the lagging pupils were disadvantaged only in their prior experience; that the public schools were terribly ineffective teachers; and that the application of the usual psychological principles would cause extraordinary leaps in achievement. (35:116)

Mecklenburger raised some questions concerning OEO's reporting on the experiment. First, preliminary results were released January 31, 1972, only after Seattle schools sued OEO for the information. Second, a chapter prepared by the project directors which enumerated and discussed the difficulties encountered was omitted in the "Preliminary Summary of Results." Finally, the Battelle report, although available to OEO before January 31, 1972, was issued some days after the summary report (33:21-24).

Using the Rand report as its source, the American Association of School Administrators summarized the major advantages of performance contracting as: (1) facilitating
the introduction of radical change in education; (2) emphasizing accountability for student learning on the part of school administrators, contractors, and teachers; and (3) increasing the number of Learning System Contractors in the field of education. The major disadvantages were stated as follows: (1) the complexity of some programs hampering management and making costs unnecessarily high; (2) the probable continuance of programs being narrowly focused on skill areas because of difficulties in defining objectives and measuring their attainment; and (3) the magnification of legal questions, issues of teacher status, difficulties in management, and problems of test selection and administration (1:24-25).

Joan M. Webster, Director of Contract Learning Projects in Grand Rapids and proponent of performance contracting, stated additional advantages in stimulating innovation, holding the companies accountable for their materials, and in providing additional updated and relevant training for teachers (22:8-9).

Summary

In summary, most of the literature contained descriptions of various contract programs. However, very little research data were published. To date, Rand appeared to be the most objective and comprehensive analysis of the various contracts and their ensuing
programs.

An apparent difficulty in this type of research was the number of variables present when discussing the broad subject of performance contracting. Clear definitions became very important. In addition, specificity in the use of the term 'effective' as being either cost effective or educationally effective needed to be stressed in research reports.
CHAPTER III
METHODOLOGY

Overview

This chapter deals with a description of research methodology and procedures involved in this study. Sections of this chapter consider (a) research design, (b) selection of subjects, (c) instrumentation, (d) procedures, (e) data collection, recording, processing, and analysis, (f) methodological assumptions, and (g) limitations of the study.

In 1972, 116th Street School in Los Angeles contracted with the American Learning Corporation (ALC) for a reading program referred to as a "Planning, Development, and Management Contract."

This contract is developed in four stages: planning, initial assessment and operation preparation, instructional operation, and evaluation and expansion. Cooperation and joint responsibility of the school and corporation characterize this approach, which also helps to overcome the "management system" needs of the school and maximizes the involvement of the total school staff and community. (5:6)

Initial testing and program implementation were completed late in 1972. Only first and second graders were included in the program. The program, with minor additions and changes, has continued through the 1974-75 school year.
with ALC providing consulting services on a renewal contract basis.

Research Design

This was an ex post facto study simulating experimentation through personal interviews and record examination.

The ex post facto design was selected as the most appropriate as the Reading Achievement Center (RAC) had been in operation since 1972 and test data had been accrued prior to the conception of this study. The independent variable examined in the study was the experience provided in the RAC, and the dependent variable was the effect of instruction in the RAC as reflected in the reading achievement test scores of the students.

Selection of Subjects

Since the study covered the period from Fall of 1972 to Spring of 1975, a description of the subjects necessitated inclusion of any trends or changes during the three years. The 1970 census, reflected in the school records, found the average family income to be $8,230. A majority of the adults did not have a high school diploma (11.56% attended school up to grade 6; 44.03% attended from grades 7-11; 38.44% held a high school diploma; and 5.97% had a college diploma.) District
sources also showed that students on Aid for Dependent Children (AFDC) fluctuated from 53.50% in 1972, to 44.70% in 1973, to 50.20% in 1974. The number of students receiving free lunches increased steadily from 59.30% in 1972, to 67.90% in 1973, and to 71.10% in 1974. ESEA Title I eligibility was determined by using the average family income, assessed value of single family homes, percent on free lunch, and percent of AFDC. Eligibility rankings ranged from 1 to 436 with 1 being the most eligible. The numerical ranking given the school decreased from 65 in 1972 to 74 in 1973 and 1974.

School enrollment had declined steadily while transiency had increased prior to the period covered by this study. In 1967-68, the enrollment was 832 with a transiency rate of 38.90%. In 1972-73, the enrollment was 669 with a transiency rate of 64%. The enrollment was 582 in 1973-74. At the time of this writing, no additional enrollment or transiency figures were available. Racial and ethnic survey data showed that from 1972-1974, the school enrollment was 99% black with the remaining 1% being comprised of pupils with Spanish surnames.

District sources also gave a breakdown on the total cost of education per pupil. In 1970-71, there was $536 of district funding per pupil. In 1971-72, special funds of $54 were added to the $576 of regular district funds for a total of $630 per pupil. In 1972-73, special funds
rose sharply to $294, which added to $664 of regular dis­tract funds, gave $958 per pupil. The school had been in the current Title I program since the Fall of 1972, and in that school year, 90.5% of its budget was spent on instruction (28:1-2).

Subjects in the study were selected from this general population. Their inclusion in the study was determined solely on the basis of grade placement. There were 75 fourth graders and 56 third graders who were given reading achievement tests in the Spring of 1975. The third graders were divided into three groups for comparison purposes: Group A had begun instruction in the RAC as first graders during the Fall of 1972, the inception of the program; Group B had entered the school during the 1973-74 school year as second graders and had received instruction in the RAC; and Group C had entered the school during the 1974-75 school year as third graders and, therefore, had not been exposed to the RAC. The fourth graders were also divided into groups for comparison purposes: Group D had received instruction in the RAC as second graders in 1972-73, the inception of the program; Group E₁ had entered the school in 1973-74 as third graders and Group E₂ had entered as fourth graders in 1974-75 and, therefore, neither had been exposed to the RAC. In summary, Group A had two years of instruction in the RAC (during grades 1 and 2),
while Groups B and D had one year of instruction in the RAC (during grade 2). Groups C, E₁, and E₂ had not received instruction in the RAC.

The following chart was included to clarify the sample composition:

<table>
<thead>
<tr>
<th>Grade</th>
<th>1972-73</th>
<th>1973-74</th>
<th>1974-75</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>A</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>D</td>
<td>A + B</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>D + E₁</td>
<td>A + B + C</td>
<td>D + E₁ + E₂</td>
</tr>
</tbody>
</table>

**Instrumentation**

Beginning in 1972, and for each successive year, the following tests were administered. The Cooperative Primary Test 12A was administered to each first grade class. Second graders were given the Cooperative Primary Test 23A. Third graders were given the Cooperative Primary Test 23B. The date of publication for all the Cooperative Primary Tests was 1967. The fourth graders were given the Comprehensive Tests of Basic Skills (CTBS), Form Q2, published in 1968. All tests were administered in April and May of each year by the classroom teacher. As standardized group tests, instructions for testing given in the test manuals were to be followed.
Procedures

In May, 1972, two Directors of Learning were chosen from the school's existing staff and were trained by American Learning Corporation. Each Director had more than five years of previous teaching experience. The training included administration and interpretation of the diagnostic tests—Gates-McKillop Reading Diagnostic Test, SRA Phonics Survey, and Spache Diagnostic Reading Scales. After training in identification of skill deficiencies, the Directors were then trained in prescription writing.

Instruction was also given in the use of the ALC Prescription Manual, a multi-volume catalog of all Reaching Achievement Center resources listed according to skill objective. For example, under work attack, short vowel - a, all instructional materials were specifically identified: Language Master Set B, Hearing/Seeing in Context with final consonant, Set I, Cards 1-7 (4:I-6.0). This manual facilitated appropriate resource selection and provided many alternate and reinforcing materials.

A portion of the training was also devoted to the use of the multi-media instructional materials within the center. These materials included the following:

1. Sullivan Reading Textbooks, Response Books, and Comprehension Readers
2. Webster Classroom Reading Clinic  
3. Stott Programmed Reading Kit  
4. Science Research Associates Reading Labs, Word Games, Reading for Understanding Labs  
5. Bell and Howell-Linguistic Word Pattern Program, Language Master Sets, and Language Master Console  
6. Educational Development Laboratory-Flash-X Tachistoscopes and Sets  
7. Garrard Publishing Company-Dolch Basic Sight Vocabulary Cards, Lotto Games, etc.  
8. Open Court materials  
10. American Learning Corporation-TRG Sound System, Sight Vocabulary, Sight Phrase Program  
11. tape players and cassettes.  

Additional training and instruction was given in student progress monitoring and prescription revision, record keeping, center management and scheduling, paraprofessional training, and the motivational system consisting of immediate positive reinforcement and extrinsic rewards. Part of this training involved observation and participation in one of the centers operated privately by ALC, called The Reading Game. 

The Directors were assisted during instructional periods by six or seven paraprofessionals. This resulted in an adult-student ratio of a minimum 5:1. Each paraprofessional, usually a college student, was trained in the use of all instructional materials and the administra-
tion and scoring of all tests used within the center. Paraprofessional training also emphasized positive reinforcement and the correct use of rewards during instruction (motivation). In addition, each paraprofessional was responsible for recording the progress of each child with whom he worked during the instructional period. The paraprofessional's work with each child was based on original prescription and subsequent revisions made by the Directors.

Each child entering the program was given a diagnostic test appropriate to his needs which measured word attack skills, letter recognition, consonant sounds, vowel sounds, reading comprehension, etc. A check was made on hearing and vision and appropriate referrals made, if necessary. Verbal facility was checked by using the Peabody Picture Vocabulary Test. Observations were made concerning speech problems, bilinguality, motivation, attention span, and ability to follow directions. The paraprofessional administered these tests and made observations over a two to three hour period with intermittent rest periods. All of this testing was done on a one to one basis. The Director then analyzed the test results, (in the case of a second grader, this included achievement test results), and based his diagnosis and prescription on that information. The prescriptions included materials for the development, reinforcement,
and application in four areas of reading skills: word attack, vocabulary, comprehension, and application.

In a sample prescription, Sullivan might be used as a basic system to develop word attack skills, beginning with Book 3; System 80-Elephant Series, E and F, would be used to reinforce letter sounds, especially blends (bl, cl); Stott games, #8 would be used to correct a b-d reversal problem; and oral readers would be used to check application of all skills. Each prescription was specific in noting exactly where the child was in reading achievement, what he had mastered, and what he needed to work on and toward what goal.

The RAC was housed in a portable classroom on school grounds. It had, in essence, two rooms. One was the office and game area in the center of which was a bumper pool table. There were bookcases on two sides of the room. On one wall the bookcases accommodated each child's notebook, which was a complete record of his progress and stayed with him during instruction. The bookcases on the other wall provided storage and retrieval for various games used for motivational purposes and independent reading books at all levels of interest and readability. The second room was reserved for instruction. Study carrels and tables were arranged to accommodate several centers; for example, Language Master Consoles were in one area, System 80 Audio-Visual Units in another, word games and flash cards in a third area, Sullivan workbooks and
study tables in a fourth area, and various comprehension materials in still another area. The entire RAC was air-conditioned, painted in bright primary colors, and fully carpeted.

All children in the first and second grades attended the RAC. Their classroom teachers took each class to the RAC for 40 minutes of the 120 minutes allotted for reading in the daily schedule. The classroom teacher's role changed over the three years' existence of the program. During the first year, the classroom teacher accompanied the children to the RAC and just observed. During the second year, there was increased participation by the teachers. In the third year, the two first grade teachers and the three second grade teachers all took an active part in the instruction in the RAC. Within the classrooms, the Harper & Row basal reading series was used. This study did not investigate the classroom portion of the total reading program.

The Directors of the RAC made the following observations about the reading program in the RAC:

(1) Students exhibited a better attitude and felt more secure with reading; they seemed more able to cope with testing and viewed it as less of a threat;

(2) Students became better accustomed to praise; they also learned to manage their time and to work more independently;
(3) The program enabled each child to advance at his own rate; absences and transiencies seemed less of a problem in that instruction was completely individualized and a child, therefore, could pick up wherever he left off; and

(4) The program also made it possible to determine specific skill levels for each child at any point in time.

Teacher feedback to the Directors seemed to indicate that the classroom teacher, using information supplied by the RAC, could more easily group the children according to skill needs. They also reported that receiving the additional input for each child was helpful in pinpointing problem areas, making decisions on retention, etc.

In-service workshops had taken place during 1972-73. In time, these were curtailed due to budgetary cutbacks. As a result, the Directors and the third grade teachers had little opportunity to communicate regarding the reading activities which were being pursued in the RAC and those that were being carried on in the classroom.

Data Collection and Recording

In May, 1975, the researcher met with the two Directors of Learning in the RAC. Most of this time was devoted to a careful description of the center and to
interviews with the Directors concerning teacher involvement, RAC management, and personal opinions and reactions.

In May and June of 1975, permission to examine the achievement test scores in the school files was secured from the building principal. The Spring, 1975, fourth grade rosters with test scores were first used as a base. Each student was traced through the preceding years in terms of test scores. This entire procedure was repeated with the Spring, 1975, third grade roster which was used as a second base. Three fourth grade students and four third grade students were omitted from the study because of incomplete test data. Finally, numerical assignments were substituted for the students' names. Later, the Cooperative Primary Tests Norming Tables 21, 23, and 25 were used to supply the mid-percentile ranks of the tests given in 1973 and 1974: (19:36-42)

<table>
<thead>
<tr>
<th>Identification</th>
<th>1975</th>
<th>1974</th>
<th>1973</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Raw Score</td>
<td>%-ile</td>
<td>Raw Score</td>
</tr>
<tr>
<td>3-1</td>
<td>xx</td>
<td>xx</td>
<td>xx</td>
</tr>
</tbody>
</table>

This information was then keypunched— one student's test score per data card. Each identification number was preceded by a 3 or a 4 to designate 1974-75 grade placement.
Data Processing and Analysis

All statistical computations were performed on a 3170 CDC computer at California State University, Northridge, Computer Center. The program, entitled Difference Among Means (DAM), provided the following for each group: mean, variance, standard deviation, and standard error. In the comparisons between means of the groups, the *t*-test for significance was used.

Table 2 shows the standard deviation (SD) and the standard error (SE) of the mean raw scores and the corresponding percentiles for the 1974-75 fourth graders:

<table>
<thead>
<tr>
<th></th>
<th>Year</th>
<th>1974-75</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Group</td>
<td>No. in Sample</td>
</tr>
<tr>
<td>D</td>
<td>46</td>
<td>37</td>
</tr>
<tr>
<td>El+2</td>
<td>28</td>
<td>30</td>
</tr>
</tbody>
</table>

Table 3 shows the standard deviation and the standard error of the mean raw scores and the corresponding mid percentile ranks for third graders in 1974-75 and 1973-74.
### TABLE 3

MEAN RAW SCORES, COOPERATIVE PRIMARY, 23B

<table>
<thead>
<tr>
<th>Year</th>
<th>1974-75</th>
<th></th>
<th></th>
<th></th>
<th>1973-74</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No. in</td>
<td>Mean Raw Score</td>
<td>%-ile Rank</td>
<td>SD</td>
<td>SE</td>
<td>No. in</td>
<td>Mean Raw Score</td>
</tr>
<tr>
<td>Group</td>
<td>Sample</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A</td>
<td>27</td>
<td>30</td>
<td>23</td>
<td>7.7</td>
<td>1.5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>10</td>
<td>28</td>
<td>20</td>
<td>3.5</td>
<td>1.1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>C</td>
<td>15</td>
<td>28</td>
<td>20</td>
<td>9.8</td>
<td>2.5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>D</td>
<td>46</td>
<td>31</td>
<td>28</td>
<td>8.7</td>
<td>1.3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>E₁</td>
<td>12</td>
<td>26</td>
<td>16</td>
<td>7.8</td>
<td>2.2</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### TABLE 4

MEAN RAW SCORES, COOPERATIVE PRIMARY, 23A

<table>
<thead>
<tr>
<th>Year</th>
<th>1973-74</th>
<th>1972-73</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No. in Sample</td>
<td>Mean Raw Score</td>
</tr>
<tr>
<td>Group</td>
<td>A</td>
<td>27</td>
</tr>
<tr>
<td></td>
<td>B</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>C</td>
<td>46</td>
</tr>
</tbody>
</table>
Table 4 shows the standard deviation and the standard error of the mean raw scores and the corresponding mid-percentile ranks for second graders in 1973-74 and 1972-73.

Table 5 shows the standard deviation and standard error of the mean raw scores and the corresponding mid-percentile ranks for the 1972-73 first graders:

**Table 5**

**MEAN RAW SCORES**

**COOPERATIVE PRIMARY, 12A**

<table>
<thead>
<tr>
<th>Year</th>
<th>1972-73</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group</td>
<td>No. in Sample</td>
</tr>
<tr>
<td>A</td>
<td>27</td>
</tr>
</tbody>
</table>

Table 6 is a composite of Tables 2-5 and shows the series of test scores for each group.
### TABLE 6
COMPOSITE OF ALL MEAN SCORES AND CORRESPONDING PERCENTILES

<table>
<thead>
<tr>
<th>Year</th>
<th>1974-75</th>
<th>1973-74</th>
<th>1972-73</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No. in Raw</td>
<td>Mean</td>
<td>%-ile</td>
</tr>
<tr>
<td>Group</td>
<td>Sample</td>
<td>Score</td>
<td>Rank</td>
</tr>
<tr>
<td>A</td>
<td>Coop.</td>
<td>27</td>
<td>30</td>
</tr>
<tr>
<td>B</td>
<td>Primary</td>
<td>10</td>
<td>28</td>
</tr>
<tr>
<td>C</td>
<td>23B</td>
<td>15</td>
<td>28</td>
</tr>
<tr>
<td>D</td>
<td>CTBS</td>
<td>46</td>
<td>37</td>
</tr>
<tr>
<td>E1+2</td>
<td>Q2</td>
<td>26</td>
<td>30</td>
</tr>
</tbody>
</table>
Table 7 shows the t-statistic for unequal population variance and the degrees of freedom used to determine the significance of the difference between means of the five groups.

<table>
<thead>
<tr>
<th>Year</th>
<th>Sample</th>
<th>t-statistic</th>
<th>Degrees of Freedom (approx.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1974-75</td>
<td>B,C</td>
<td>0.1695</td>
<td>19.58</td>
</tr>
<tr>
<td>1974-75</td>
<td>A,C</td>
<td>0.9178</td>
<td>25.24</td>
</tr>
<tr>
<td>1974-75</td>
<td>D,E₁+2</td>
<td>2.0447</td>
<td>60.25</td>
</tr>
<tr>
<td>1973-74</td>
<td>D,E₁</td>
<td>1.9382</td>
<td>20.23</td>
</tr>
<tr>
<td>1974-75</td>
<td>A,B</td>
<td>1.1972</td>
<td>36.01</td>
</tr>
<tr>
<td>1973-74</td>
<td>A,B</td>
<td>0.5804</td>
<td>29.82</td>
</tr>
</tbody>
</table>

Statistical Hypotheses

In order to test the research hypotheses in relation to this study, the following statistical hypotheses were stated:

H₀₁: There is no significant difference between the 1974-75 mean raw scores on the achievement test of those third graders who had instruction in the RAC for one year (Group B) and those who had no instruction in the RAC (Group C).
H_{02} There is no significant difference between the 1974-75 mean raw scores on the achievement test of those third graders who had instruction in the RAC for two years (Group A) and those who had no instruction in the RAC (Group C).

H_{03} There is no significant difference between the 1974-75 mean raw scores on the achievement test of those fourth graders who had instruction in the RAC as second graders (Group D) and those who had no instruction in the RAC (Group E_{1+2}).

H_{04} There is no significant difference between the 1973-74 mean raw scores on the achievement test of those fourth graders who had instruction in the RAC as second graders (Group D) and those who had no instruction in the RAC (Group E_{1}).

H_{05} There is no significant difference between the 1974-75 mean raw scores on the achievement test of those third graders who had instruction in the RAC for two years (Group A) and those who had instruction in the RAC for one year (Group B).
H₀₆ There is no significant difference between the 1973-74 mean raw scores on the achievement test of those third graders who had instruction in the RAC for two years (Group A) and those third graders who had instruction in the RAC for one year (Group B).

**Statistical Treatment of Data**

The t-test for independent groups, two-tailed, was employed to test the significance of the difference between means. The probability level for rejection of the null hypotheses was selected to be at the .05 level of significance (p < .05).

**Methodological Assumptions**

The following assumptions were made in this study:

1. The research design, procedures, and data processing techniques used in this study were appropriate to the intent of the investigation.
2. The reliability and validity of the test instruments were sufficient to provide evidence for the hypotheses set forth.
3. The subjects used in this study were a representative sample of the described population.
4. An assumption was made of normal dispersion among comparison groups.
5. Directors and paraprofessionals were qualified in performing the functions as listed in this study.

6. Information reported by school personnel was reliable and valid.

7. Data were accurately gathered, recorded, and analyzed.

8. Results of data analysis were interpreted fairly and accurately.

9. Conclusions drawn from the data followed logically and accurately from an objective analysis.

Limitations of the Study

The following limitations were noted:

1. Direct observation was not possible as this was an ex post facto study.

2. The samples were intact class groups taken from one school within the district curtailing true randomness in sampling and treatment assignment.

3. The division of the students into groups, based on RAC experience, resulted in relatively small samples for Groups B, C, E₁, and E₂.

4. The statistical data were based on standardized test scores and were, therefore, subject to the
same limitations inherent in those tests.

5. The study considered only one independent variable--instruction within the RAC--and its effect on achievement test scores.

Summary

The identification of relationship, or lack of relationship, between learning experiences in the Reading Achievement Center and reading achievement scores provided the data for achieving the purpose of this study. Scores of the subjects on the Cooperative Primary 12A, 23A, and 23B and the CTBS Form Q2 were the specified dependent variables in the investigation.

The relationships between variables, as presented in the research hypothesis, were tested by statistical procedures generated by an appropriate computer program. Data were analyzed through t-tests for significance of the difference between means of independent groups. Interpretation of the analytic results was carried out in terms of methodological assumptions and limitations specified in the investigation as being relevant to the hypothesis examined by the study.
CHAPTER IV
FINDINGS AND DISCUSSION

Findings

The findings reported in this chapter refer to the statistical hypotheses stated in Chapter III and to the concerns of this study.

The test of statistical significance of the six null hypotheses of this study and the investigation of the effects of the learning experiences in the Reading Achievement Center on the reading achievement test scores were performed through t-tests for independent groups, two-tailed, with a probability level set at .05.

Hypothesis 1 ($H_{01}$) predicted that there would be no significant difference between the 1974-75 reading achievement mean raw scores of those third graders who had instruction in the RAC for one year (Group B) and those who had no instruction in the RAC (Group C). With a $t$ of .1695 (Table 7), the null hypothesis was, therefore, considered tenable. Such a finding may indicate that the learning experience in the RAC does not appear to affect pupils' reading achievement test scores.

Hypothesis 2 ($H_{02}$) predicted that there would be no significant difference between the 1974-75 reading achievement mean raw scores of those third graders who
had instruction in the RAC for two years (Group A) and those who had no instruction in the RAC (Group C). With a t of .9178 (Table 7), the null hypothesis was, therefore, considered tenable. Such a finding may be an indication that the pupils' reading achievement test scores were not affected by their learning experience in the RAC.

Hypothesis 3 (H₀³) predicted that there would be no significant difference between the 1974-75 reading achievement mean raw scores of those fourth graders who had instruction in the RAC as second graders (Group D) and those who had no instruction in the RAC (Group E₁⁺²). A t of 2.0447 (Table 7) was statistically significant; therefore, the null hypothesis was rejected. Since the difference between means favored the experimental group (D), it might seem that the learning experience in the RAC provided a foundation for future advances in reading achievement of this group.

Hypothesis 4 (H₀⁴) predicted that there would be no significant difference between the 1973-74 reading achievement mean raw scores of those fourth graders who had instruction in the RAC as second graders (Group D) and those who had no instruction in the RAC (Group E₁). With a t of 1.9382 (Table 7), the null hypothesis was considered tenable. Such a finding would seem to indicate that the learning experience in the RAC does not appear to affect the pupils' reading achievement test scores.
Hypothesis 5 \((H_{05})\) predicted that there would be no significant difference between the 1974-75 reading achievement mean raw scores of those third graders who had instruction in the RAC for two years (Group A) and those who had instruction in the RAC for one year (Group B). With a \(t\) of 1.1972 (Table 7), the null hypothesis was considered tenable. Such a finding may indicate that the learning experience in the RAC does not appear to affect the pupils' reading achievement test scores.

Hypothesis 6 \((H_{06})\) predicted that there would be no significant difference between the 1973-74 reading achievement mean raw scores of those third graders who had instruction in the RAC for two years (Group A) and those third graders who had instruction in the RAC for one year (Group B). A \(t\) of .5804 (Table 7) was obtained, and the null hypothesis was, therefore, considered tenable. Such a finding would seem to indicate that the pupils' achievement test scores were not affected by their learning experience in the RAC.

**Discussion**

In this section, results previously reported are discussed in light of evidence gathered from the review of literature undertaken in Chapter II and from the features of the research design and data characteristics.
Even though there was no difference in the 1973-74 mean raw scores of the fourth graders (Groups D and E₁), statistical significance was attained when comparing their 1974-75 mean raw scores (Groups D and E₁₊₂). One explanation for the results of the 1973-74 raw score comparison may be the inadequate sample size of E₁ (N=12). Another plausible explanation could be that the specific reading skills emphasized in the RAC program, namely, the basic foundation skills, significantly increased the difference in performance between the two groups only when reading tasks in the fourth grade required more advanced application of these skills.

Although no statistically significant difference was found when comparing the mean achievement test scores of the third graders (Groups A, B, C), indications of positive effect of instruction in the RAC could be observed. From data collected at the school and researched as background for the study, a picture of overall decrease in reading scores seemed to emerge. Yet, by comparing the mean raw scores of Groups A and D on the third grade test (Table 3), it was found that the difference between mean raw scores decreased by only one point.

The relatively high percentile rankings for both Groups A and D (Table 6) after completing the first year, 1972-73, in the RAC was noted. In this instance, possible Hawthorne effect could not be ignored.
A decrease in percentile ranks of mean raw scores from the Cooperative Primary 23A (second grade) to the Cooperative Primary 23B (third grade) was noted (Table 6). Contributing factors may be: (1) the higher level of sophistication of the test items in the third grade test as compared to that for the second graders; and (2) the wider variety of skills sampled in the former than in the latter. Groups A, B, and D all seemed to follow this pattern.

An additional observation involves sample sizes. The students were divided into groups based on experience, or lack of experience, in the RAC. This resulted in sample sizes of 10 for Group B, 15 for Group C, 12 for Group E₁, and 14 for Group E₂. These sample sizes were small and any implications regarding these groups did not lend themselves to generalization over a larger population.

The choice of this type of contract program by the school seemed to have eliminated many of the management problems encountered by the programs reviewed in Chapter II. This particular program seemed most like the performance support contracts mentioned in the literature. However, program comparisons were of questionable value as most data listed in the literature reviewed were based upon grade equivalent scores. As no standardization in grade equivalency between tests were available, such
scores became of questionable value to the researcher, and, therefore, an analysis of raw scores was used for this study.

Summary

Findings indicated that the effects of the learning experience in the Reading Achievement Center appear to be differentially reflected in the reading achievement scores. Null hypotheses $H_{01}$, $H_{02}$, $H_{04}$, $H_{05}$, and $H_{06}$ were found tenable. Null hypothesis $H_{03}$ comparing the 1974-75 fourth grade groups was rejected at the .05 level. The discussion of these findings attempted to integrate information gathered in the review of literature performed in Chapter II along with features of the research design and data characteristics.
CHAPTER V
SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Summary

Purpose

This study investigated an individualized reading program developed by American Learning Corporation and implemented in an inner city school in Los Angeles. The program as it existed from 1972-75 was described and a determination of its long range effectiveness was attempted.

Methodology

The identification of relationship, or lack of relationship, between learning experiences in the Reading Achievement Center and reading achievement scores provided the data for achieving the purpose of this study. An ex post facto design seemed most appropriate as instruction and subsequent testing had taken place prior to the inception of the study. The school records were examined and those of the 1974-75 third and fourth graders provided the bases of research data. These students' achievement test scores were traced through the 1973-74 and 1972-73 school years. Mean raw scores of the five groups were compared using the t-test to determine significant difference between means.
Findings

The findings were mixed. There were no differences found when comparing the third grade groups and the 1973-74 scores of the fourth grade groups. However, significance was established at the .05 level when comparing the 1974-75 fourth grade groups. Other findings discussed included the positive effect of the learning experience in the RAC, the possibility of Hawthorne effect, possible reasons for the decline in percentile rankings from second to third grade, the affect of the sample sizes, and the choice of this particular type of performance support contract.

Conclusions

The following conclusions seemed to be warranted:

1. The program as conducted from 1972-75 appeared to have slowed the trend of decreasing reading achievement test scores.

2. As a group, those who had instruction in the RAC scored higher on standardized achievement tests than those who had not had the instruction. This pattern continued up to two years after program completion.

3. Under certain circumstances, such a program would enhance the reading achievement of school children.
Recommendations

Based on the findings and conclusions of this study, the following recommendations may be made:

1. Additional follow-up studies need to be conducted to clarify the results of this study.

2. A similar study using a control group would help to determine if differences could be contributed solely to the instruction in the RAC.

3. The lower test scores of third graders in relation to second graders may indicate variables not examined in this study and would warrant further examination.

4. School districts may need to consider the services and materials offered through performance support contracts as an alternative approach in the efficient use of money, time and personnel in the implementation of individualized reading programs.
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