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ABSTRACT

The ALL WIN-U.S.A. Project, administered by the Office of the Los Angeles County Superintendent of Schools (OLACSS), was to provide basic-skills instruction in reading and mathematics that would result in significant improvement in the respective achievement domains, in learner attitudes, and cost effectiveness relative to the previous curriculum and instruction. The OLACSS selected the New Century Education Corporation to provide the major elements of the educational program which has three major components: (1) individualized learning centers; (2) a mathematics and reading curriculum covering all grade levels, delivered in an individual and prescriptive manner; and (3) a preservice training institute for teachers and administrators. The New Century program was installed at 48 schools that met OEO eligibility requirements. Fiscal data for this study were collected from the various school districts in order to determine those program costs that had been paid from district funds. Outcome data collected as a part of the initial ALL-WIN evaluation were utilized for considering the effectiveness of the program. Data from various of the outcome determinations are summarized in this report but unique analyses have been performed only for three of the cognitive achievement measures. (MV)

Final Evaluation Report
September 15, 1975

ALL WIN - U.S.A.

COST EFFECTIVENESS STUDY

Submitted to

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by

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CHAPTER I

INTRODUCTION

In accordance with his contract with the Office of the Los Angeles County Superintendent of Schools, Dr. Marvin C. Alkin (Educational Evaluation Associates) is pleased to submit this final report on the cost-effectiveness evaluation of the ALL WIN-U.S.A. Project during the 1974-75 school year.

ACKNOWLEDGEMENTS

We are greatly indebted to many of the professional staffs at the district and county levels for their cooperation and for the assistance they provided. Special thanks are extended to Dr. Harry Holmberg for his guidance and help in initiating the project. Unfortunately, his call to military service during a portion of this study made it more difficult for us to call upon his wise counsel. In his absence, we were ably assisted by Dr. Mary Martin and by Mrs. Julia Payne. Mrs. Sara Bates provided assistance in contractual matters as well as in a fuller understanding of the fiscal data of the ALL WIN-U.S.A. Project as administered by L.A. County Schools. Miss Barbara Waldrup was most helpful in reviewing with us various fiscal data available at the county schools. Our thanks also go to Dr. Ruth Cohen for her assistance and helpful feedback on the earlier evaluation study which provided some of the outcome data utilized within this study. Finally, our appreciation goes to Dr. Maylon Drake for assisting in the conceptualization

of the study and providing general encouragement.

Each of the school districts participating in the ALL WIN-U.S.A. Project responded to our request for assistance and information in an able and timely fashion, and we are grateful. We were in the district and met personally with a number of the project coordinators to obtain their suggestions on the types of fiscal data that might be available and appropriate. In particular, Dean Gahre (Fontana Unified School District), Hector LeRoy (Colton Joint Unified School District), and Jack Hasinger (Ontario-Montclair Elementary School District) provided assistance and insights into the formulation of the questionnaire. In addition, we are grateful to Mrs. Estella Schultz (Compton Unified School District), Mr. Robert Burns (Duarte Unified School District), Roger Temple (Garvey School District, and Chester Jensen (L. A. County Special Schools) for their assistance in completing the questionnaire and providing other needed information. The business offices of each of the above mentioned school districts were also most cooperative in providing data.

BACKGROUND

The ALL WIN-U.S.A. Project ~~was~~ funded by the United States Office of Economic Opportunity (OEO), and administered by the Office of the Los Angeles County Superintendent of Schools (OLACSS). ~~The mission~~ of the Project was to provide basic-skills instruction in reading and mathematics that

would result in significant improvement in the respective achievement domains, in learner attitudes, and cost effectiveness relative to the previous curriculum and instruction. EEA was selected by the OLACSS to conduct the independent evaluation of the ALL WIN-U.S.A. Project during its first year of operation, the 1974-75 school year. The Evaluation Report was delivered in August, 1975. The cost-effectiveness study was funded in July, 1975. The timing of the funding for the cost-effectiveness study posed a number of difficulties which will be discussed in a later section of this chapter.

The OLACSS selected the New Century Education Corporation to provide some of the major elements of the educational program. The New Century program had previously been developed and installed at various locations in the United States. The program has three major components, as described below:

1. Individualized Learning Centers - classrooms converted to laboratory-type classrooms somewhat similar to the now-common and familiar "language labs". The learning centers feature individual student carrels containing audio-playback machines.
2. Instructional Materials - a reading and mathematics curriculum covering all the grade levels, similar in content to typical textbook content, but delivered in an individual

and prescriptive manner.

3. Professional Training - a preservice training institute for teachers and administrators to provide them with a thorough understanding of the program's objectives and methods and to instruct them in the operational procedures necessary to implement the program effectively.

The OLACSS administered OEO contract provided the cost of purchase and maintenance of all New Century equipment and materials and the costs of pre-and in-service education provided by the Company. Costs and expenses of L. A. County Staff charged with the responsibility of administering the program were also included. School Districts provided classroom space, teachers, aides, school district administrative support and related expenses.

The New Century program was installed at forty-eight schools that met OEO eligibility requirements. The most noteworthy of the school eligibility requirements are:

A. The school must maintain an average monthly use of learning centers of at least 85 percent of capacity and 70 percent of the centers' daily service capacity must be students who meet OEO low-income quidelines, and

B. The schools must categorize students ranked in the fourth quartile on a standardized achievement composite test as ineligible for participation.

C. Teachers selected must be fully credentialed, with a minimum of 2 years' experience in the district and have met or exceeded district determined performance appraisal criteria.

NATURE OF COST-EFFECTIVENESS STUDY

In this age of concern for accountability it becomes seductively appealing to raise questions related to the relative "cost-effectiveness" of programs. The simple questions, "Is this program cost-effective?" or "Are the educational outcomes of this program in line with the associated costs?" are not ones that are easily answered. In fact, there have been very few studies performed which relate costs and outputs in education or in any other field.

A simplified cost-outcome study requires either maximizing outcomes or minimizing costs. That is, once we ascertain the costs and the outcomes of various program alternatives we either select the alternative that yields the largest amount of outcomes for a given cost, or we can select the alternative which will yield the least cost for a given level of outcomes. Unfortunately, it is not always possible to either maintain constant costs or constant outcomes when comparing programs. It's only infrequently that two programs cost precisely the same amount to operate and it's only under certain conditions that outcomes can be expressed as either having been attained or not attained and thus comparable.

The typical cost-benefit study solves this dilemma and simplifies the problem somewhat by converting outcomes to dollar equivalencies. That is, educational outcomes (student achievement) must be converted into an actual or estimated dollar worth. A cost-benefit study utilizes a decision rule (one less dollar of cost and one more dollar of benefit are of equal value) that enables the consideration of both costs and benefits. Therefore, cost-benefit decisions are made between alternatives without the necessity of holding either costs or benefits constant across the programs.

But public school practitioners are really not concerned (especially at the local district or county level) with performing cost-benefit analyses. One reason for this is that the nature of data at local district levels does not lend itself to the performance of cost-benefit analysis. Secondly, at local levels, we are usually unable and unwilling to make the conversions of educational outcomes into dollar benefits. While the economic gain in earning power (and other such factors) related to particular increases in educational outcome can be calculated on five-year national data, those kinds of estimates are more difficult, if not impossible at a local school district level. (So tell me, Mr. Superintendent, how many dollars is it worth to each child in private benefits of increased earning power for each one month gain in reading score? And, tell me, how much is it worth in dollars of public benefit to have a

next door neighbor who reads at one month's higher ability?) Cost-benefit analyses are usually left to the economist dealing with highly aggregated national level data.

Cost-effectiveness analysis is another kind of attempt to utilize fiscal data in decision making. Generally, the procedures compare programs based upon their costs as well as their outcomes without converting outcome measures into dollar benefits. It represents no easy task and most studies err in the direction of presenting analyses well beyond the capabilities of their data. Cost-effectiveness analysis is primarily a methodology to assist decision makers in showing relationships between costs associated with an educational program, and outcomes, or effectiveness. The simplest way of considering cost is to document in tabular form the procedures used for determining the incremental cost of a specified program and documenting fully the outcomes associated with that program without attempting to draw a relationship between the two sets of numbers but assuming that a more reasonable educational decision can be made based upon a full understanding of costs in addition to outcomes. Many cost-effectiveness studies should be content with such a simple presentation, for their data does not allow for more sophisticated analyses or presentations.

A second kind of cost-effectiveness analysis that has been used is the simple development of a ratio between cost figures and outcome data. The cost per month gain is a typical means of expressing this relationship. This provides

additional information for decision makers; however, a determination must still be made as to whether the dollar ratio of achievement gain to cost is considered satisfactory (is $30 per month gain in reading "good" or "bad"?). One way of handling this dilemma is, of course, by comparing two different programs which have been pre-selected at the outset of the evaluation study, and in which student populations and community characteristics are essentially similar. Costs are determined by the same method in each program and outcomes are measured in precisely the same manner. In this way, a comparison of the cost per month gain ratios of each of the two programs provides some insight into which of the programs is likely to be most cost-effective.

Two even more sophisticated approaches to cost-effectiveness analysis have been mentioned in the literature but to our knowledge have not been tried other than in very limited instances. The first of these more sophisticated approaches entails the prediction of student outcome scores based upon their pre-test scores and then uses the differences between their actual attained outcome score and the predicted outcome score (the regression residual) as the basis for the outcome portion of the cost-effectiveness ratio. This kind of approach has reportedly been used in a Dallas Public Schools' cost-effectiveness study. An even more sophisticated approach (described by Alkin in 1967) utilizes multiple regression techniques with cost as one of the predictor variables. This would seem to be specially infeasible except in situations of a highly controlled research context utilizing

multiple programs and selections of students determined by the research team. In short, not appropriate for most school district evaluations.

CONSTRAINTS OF THIS STUDY

In discussing the most feasible data capable of presentation in this particular study, it is necessary to consider the constraints faced by the evaluators.

The first thing that must be noted is that this cost-effectiveness analysis was commissioned in July, 1975, after the school year under evaluation had already been concluded. This precluded the collection of certain types of data and mandated that the cost-effectiveness team perform their analysis based upon the design that had been implemented during that prior year.

It should be noted that in part because of the concerns of school districts and by the conception of the program by those involved, there were no control groups established. Thus, there are no comparison programs in the school districts for which comparable outcome data are available. There may be other programs within some of the districts which provide compensatory education services but the nature of the selection of students for those programs and the co-mingling of funds from different sources, make comparisons next to impossible for this study. More thoughtful attention to potential comparison programs at the outset of the second year evaluation might lead to potential cost-effectiveness comparisons for the school year 1975-1976.

A second determination at an early stage of the implementation of the program also hindered the cost-effectiveness analysis. It was determined early in the school year 1974-1975, that undue burdens of test collection would not be imposed upon the school districts. Thus, the students in all school districts ols would not be required to take all tests. cheme was designed whereby different tests would be taken by different students. This was perfectly appropriate methodology for providing outcome information for the evaluation of the ALL WIN-U.S.A. program. It does, however, hamper the cost-effectiveness analyses that might be performed. Furthermore, the funding of the cost-effectiveness analysis at a late date did not allow for the collection of fiscal data during the course of the school year. Thus, we were unable to systematically record, for example, the amount of time that principals spent on the program or the regular supplies and materials utilized within the program. These data had to be collected from school district personnel during July and August on a best estimate basis using a questionnaire that we devised for extracting that information.

A further confounding factor was the difficulty of obtaining data from school district personnel during the months of July and August when many of them are typically on vacation. Enough said.

The cost-effectiveness evaluation team within all of the constraints listed above nonetheless recognizes that the

function of an evaluation is to provide the best information possible for decision making. While the researcher's preference might sometimes be to throw up his hands in dismay and say "forget it", the evaluator will nonetheless attempt to provide whatever best information is possible, knowing that a decision must be made. That stance adequately describes the position of the cost-effectiveness evaluation team of this study.

DESIGN FOR COST-EFFECTIVENESS STUDY

This cost-effectiveness study must, of necessity, examine cost relationship of the program involved; outcomes (or effectiveness) must also be considered and, finally, the relationship between cost and the outcomes must be considered in some appropriate manner.

Fiscal data for this study were collected from the various school districts in order to determine those program costs that had been paid from district funds. EEA staff met with representatives of the various school districts in order to determine the appropriate fiscal data that might be available and the most feasible manner of obtaining the data. Next, a questionnaire was sent to each school district requesting various fiscal information, projections of time spent on the program by related personnel and district fiscal policy relevant areas. Based upon these data (as modified or refined by follow-up telephone calls) various calculations were performed in order to determine district incurred

financial expenses. The procedures and formulae for cost determination are detailed in Chapter II of this report. Additionally, costs paid for by Los Angeles County Schools out of the OEO contract were carefully examined in order to determine the manner in which to best prorate them. These costs determinations are also detailed in Chapter Two.

Outcome data collected as a part of the initial ALL-WIN evaluat[illegible]ompleted August 15, were utilized for considering th[illegible]iveness of the program. Data from various of the outcome determinations are summarized in this report but unique analyses have been performed only for three of the cognitive achievement measures. For purposes of this study, it was necessary to have both pre- and post-test data from the same schools. This kind of data was only available for the standardized test in reading and the standardized test in mathematics. Thus we have confined our new analyses to these two measures.

Difficulties in the analysis occurred in the attempt at drawing comparisons between fiscal data of the ALL WIN schools and fiscal data for "comparable programs." Similar difficulties occurred in making comparisons of ALL WIN effectiveness data with that of other programs. Stated simply, and as previously noted in the constraint section, the lack of comparison programs within the implemented districts offered great difficulties. The study team, however, has attempted to overcome the difficulties by

getting "normative" data of compensatory education student achievement and compensatory education costs based upon an extensive computer search of the literature. This computer search, which is detailed more extensively in Chapter IV, yielded 681 references which were systematically examined by the evaluation staff in a lengthy period of library research.

Moreover, contacts were made with a number of individuals to determine whether they were aware of appropriate data bases or other programs that might be used for "normative" purposes. Dr. Alex Law and Dr. Vince Madden of the Office of Planning and Evaluation, California State Department of Education, were contacted and EEA was allowed to purchase a computer print-out of the test scores of all compensatory education programs in California. Dr. Madden indicated that the California State Department of Education no longer collects fiscal data on these programs (they did several years ago) as the amount of "noise" in the data was far more than could be tolerated. In short, they didn't know what they were getting.

Dr. George Mayeske of the Office of Planning and Evaluation (USOE) was contacted and indicated that he was not aware of any studies that would provide the kind of data needed for this investigation. He indicated that there were two studies being conducted by their office that will not be completed until next January. Ms. Sue Haggart was contacted and was unable to offer suggested references but offered multiple caveats about the dangers of using fiscal and

outcome data from other projects for normative purposes. We are aware of such dangers and have approached this task with considerable caution. While comparisons of ALL WIN cost and effectiveness data have been made with cost and effectiveness data from other projects, we nonetheless, have attempted to point out the deficiencies of such comparisons and the dangers inherent therein. Contacts were also made with Dr. Charles Blashchke to discuss the cost-effectiveness evaluation performed by Education Turnkey for the Michigan State Department of Education. (Some data were obtained from that orgainization that proved to be worth further examination.) The data from that study are discussed more fully in Chapter IV.

The specific cost-effectiveness ratios drawn in this study are, in essence, cost per gross outcome unit measures, as described by Caldrip (1974). In essence, this amounts to the provision of data reflecting the incremental (and total) cost per month of student gain in outcome score. We have to some extent attempted to provide cost per refined unit data, based upon the use of regression residuals, but such data is not complete owing to the constraints inherent in this study.

CHAPTER II

COSTS OF THE ALL WIN-USA PROGRAM

One of the major objectives of the study was to calculate the total fiscal costs of the ALL WIN-USA Program for its first full year of operation. To achieve this, the evaluation staff first assembled a questionnaire designed to identify the costs incurred by each district that participated in the program (see Appendix 1). In some instances data were requested which were intended to be used by evaluation project staff in performing further calculations. Next, in order to calculate the costs of the program that were paid directly by the grant itself, the staff visited the Office of the Los Angeles County Superintendent of Schools and obtained the data from the Accountant and Special Projects Unit of the Internal Business Management Division. These combined expenditures--those made by the participating districts and those made by the grant-represented the total costs of the program for 1974-1975.

The Questionnaire

Most of the items on the questionnaire asked respondents either to supply specific information from their respective districts 1974-75 budgets or to estimate the amount of time various personnel spent in the program. Another item asked respondents to estimate approximately how much was spent on regular district supplies and materials for students enrolled in the program. Several items dealt with the areas of fringe benefits and one additional item focused on whether districts were leasing space for the

instructional laboratories which were the integral part of the program.

The questionnaire was mailed in early July, 1975 to each of the eight project directors. A cover letter was enclosed that indicated the purpose of the questionnaire and specified where to contact the evaluation staff if they had any questions (see Appendix 1). Telephone calls also were made to ensure that the questionnaire had been received as well as to emphasize the importance of completing it by the deadline of July 28.

Upon return of the first questionnaire, it was discovered that a project director had misunderstood three items. He had interpreted item three on the questionnaire to mean the major expenditures for special supplies and materials paid by the grant--instead of the more modest ones made by the district for its regular supplies and materials which were consumed by students during the course of the program. (The expenditures for special supplies--since they were supported by the grant--were obtained from the Office of the Los Angeles County Superintendent of Schools.) Items four and five were potentially interpretable as meaning the expenditures made by the district for the operations and maintenance of only the ALL WIN-USE Program--instead of the district's expenditures for operations and maintenance of its entire school program--as reported in its 1974-75 budget. As a result of these misinterpretations, the evaluation staff telephoned each of the project directors

to clarify what was meant by these three items. This extra time spent in telephoning each director was worthwhile, since it became evident that several of the other directors might have interpreted these items incorrectly. A more extensive prior field test of the questionnaire would have been desirable, but since the entire term of this evaluation project was limited, that was not possible. Initial interviews with several project directors and close contact with all directors during the course of the data collection alleviated potential problems.

Throughout the month of July, several districts were once again telephoned to encourage the directors to complete their questionnaires. (July was not, of course, an ideal time to collect data, since several of the directors were about to leave on vacation, others had just returned, and one had already left.) However, by the first week in August, all questionnaires had been returned and were ready to be analyzed.

DISTRICTS' EXPENDITURES FOR THE ALL-WIN USA PROGRAM

Expenditures for Salary

Tables II-1/II-2 illustrate the amount of salary that was charged against the ALL WIN-USA Program for the administrative staff in each district in the program during 1974-75. Two types of administrators were involved: (1) project directors who were located in each district's central

TABLE III-1

District Administrators' Salaries Charged to ALL WIN-USA Program by District for Fiscal Year 1974-75

School District	Number of Administrators in Program	Salary FY 1975	Percent of Time in Program	Amount of Salary Applicable to Program
(1)	(2)	(3)	(4)	(5)
Colton	1	$28,849	10.0	$2,885
Compton	1	27,595	1.0	276
Duarte	1	27,915	5.0	1,396
Fontana	1	22,420	2.0	448
Garvey	1	25,000	8.0	2,000
Lawndale	1	22,568	7.0	1,580
L.A. County Spec. Sch.	2	43,020	5.0	2,150
Ontario-Montclair	1	27,000	3.5	945
	1	19,612	1.2	235

Sources: Column 2 and Column 3: Data supplied by participating districts. Column 4: Estimates made by participating districts. Column 5: Column 3 x Column 4.

TABLE II-2

Principals' Salaries Charged to ALL WIN-USA Program by District for Fiscal Year 1974-75

School District	Number of Principals in Program	Salary FY 1975	Percent of Time in Program	Amount of Salary Applicable to Program
(1)	(2)	(3)	(4)	(5)
Colton	4	$ 88,647	25.0	$ 22,162
Compton	8	200,813	1.0	2,008
Duarte	3	71,720	5.0	3,586
Fontana	8	178,295	2.5	4,457
Garvey	1	23,444	15.0	3,517
	1	23,976	8.0	1,918
Lawndale	5	110,059	3.0	3,302
L.A. County Spec. Sch.	5	105,910	5.0	5,293
Ontario-Montclair	2	45,321	2.3	1,042
	2	46,545	2.1	977
	1	21,507	1.4	301
	1	22,865	2.5	572
	1	23,879	4.0	955
	1	21,252	3.4	723

Sources: Column 2 and Column 3: Data supplied by participating districts. Column 4: Estimates made by participating districts. Column 5: Column 3 x Column 4.

offices and (2) building principals at each participating school.

While the Los Angeles County Special Schools and the Ontario-Montclair District assigned two individuals in their central offices responsibilities for administering the ALL WIN Program, the remaining districts assigned only one person to assume the role of project director (see Table II-i). However, for both Los Angeles and Ontario-Montclair, the combined time spent by both administrators in the program (10.0 percent and 4.7 percent respectively) in most cases was not reported to be much more than the time spent in the districts with one administrator. Compton and Fontana's central administrators reported spending the least time in the program (1.0 percent and 2.0 percent respectively). It is important to keep in mind that the percent of time in the program was estimated by each project director when he completed the questionnaire and was not done through direct observation by the evaluation staff. This fact may explain some of the variation among the districts' estimates. We would recommend funding this portion of the evaluation in the early part of the school year hereafter in order to enable the evaluators to collect observation data on this dimension.

As in Table II-1, Table II-2 shows a fairly wide variation in the time spent. (Again, these were estimated times--and not arrived at through direct observation.) The

four principals in Colton spent considerably more time than their counterparts in the other districts (25.0) and those in Compton spent the least amount of time (1.0). In most cases the project directors who completed the questionnaire indicated that the principals in each of their respective districts spent the same amount of time in the program. In contrast, both Garvey and Ontario-Montclair indicated that the principals in their districts spent varying amounts of time in the program.

Table II-3 illustrates the number of teachers who participated in the ALL WIN Program during 1974-75 and their annual salary charged against the program. Since all the instructors were full-time faculty members in the program, one hundred percent of their salaries were charged to the program. The Los Angeles County Special Schools had the most teachers in the program (10) and Duarte and Garvey had the least amount (3 each).

Table II-4 shows the number of instructional aides who participated in the program as well as their annual salary charged against the program for 1974-75. As was the case with the faculty members, all the instructional aides were full time in the program. In most of the districts, there was at least one instructional aide with each full-time teacher. The exceptions were the Compton District with eight teachers and seven instructional aides and the Los Angeles County Special Schools with ten teachers and two instructional aides. Since the types of schools that

TABLE II-3

Teachers' Salaries Charged to
ALL WIN-USA Program by District
for Fiscal Year 1974-75

School District	Number of Teachers in Program	Salary FY 1975	Percent of Time in Program	Amount of Salary Applicable to Program
(1)	(2)	(3)	(4)	(5)
Colton	4	$ 58,597	100	$ 58,597
Compton	8	119,891	100	119,891
Duarte	3	36,950	100	36,950
Fontana	8	112,855	100	112,855
Garvey	3	43,116	100	43,116
Lawndale	5	71,008	100	71,008
L.A. County Spec. Sch.	10	141,110	100	141,110
Ontario-Montclair	8	122,430	100	122,430

Sources: Column 2, Column 3, and Column 4: Data supplied by participating districts. Column 5: Column 3 x Column 4.

TABLE II-4

Instructional Aides' Salaries Charged to ALL WIN-USA Program by District for Fiscal Year 1974-75

School District	Number of Aides in Program	Salary FY 1975	Percent of Time in Program	Amount of Salary Applicable to Program
(1)	(2)	(3)	(4)	(5)
Colton	6	$16,683	100	$ 16,683
Compton	7	24,522	100	24,522
Duarte	3	15,990	100	15,990
Fontana	9	32,594	100	32,594
Garvey	3	13,181	100	13,181
Lawndale	6	16,549	100	16,549
L.A. County Spec. Sch.	2	10,587	100	10,587
Ontario-Montclair	8	30,248	100	30,248

Sources: Column 2, Column 3, and Column 4: Data supplied by participating districts. Column 5: Column 3 x Column 4.

are administered by the Los Angeles County Superintendent of Schools are unique (schools designed to enroll students classified as delinquents), it is not surprising that the data for these schools do not always follow the same pattern as those for the other districts. In this instance, there were fewer aides for the program, in all likelihood, because each teacher in the program had responsibility for fewer students than the teachers in the other districts (see Table II-16). The special nature of the schools dictates that class size be considerably smaller than it is in a more typical school district.

One should also mention that even though all the instructional aides spent full time in the program, some of their salaries were computed on an hourly basis, some on a monthly basis, and others on an annual basis.

Table II-5 illustrates the estimated expenditures for substitute teachers who replaced the regular full-time teachers in the program during 1974-75. The expenditures are estimated, since the project directors were not asked to identify the number of actual days each teacher in the program was absent during 1974-75. Instead, the evaluation staff estimated seven days of leave for each instructor. This estimate was based upon the staff's experiences with districts throughout the state. (The California Education Code specifies ten days of leave per instructor, but the staff felt this did not properly reflect the actual number of days leave taken.) Thus, the total number of days absent

TABLE II-5

Estimated Expenditures for Substitute Teachers in ALL WIN-USA Program for fiscal year 1974-75

School District	Number of Teachers in Program	Average Number of Days Absent	Total Number of Days Absent	Rate of Pay for Substitutes	Cost of Substitutes Applicable to Program
(1)	(2)	(3)	(4)	(5)	(6)
Colton	4	7	28	$25	$ 700
Compton	8	7	56	34	1,904
Duarte	3	7	21	30	630
Fontana	8	7	56	25	1,400
Garvey	3	7	21	30	630
Lawndale	5	7	35	36	1,260
L.A. Co. Spec. Sch.	10	7	70	41	2,870
Ontario-Montclair	8	7	56	28	1,568

Sources: Column 2 and Column 5: Data supplied by participating districts. Column 3: California State Department of Education. Column 4: Column 2 x Column 3. Column 6: Column 4 x Column 5.

was arrived at by multiplying the number of teachers in the program in each district by the number seven. This product was then multiplied by the rate of pay for substitutes--provided by the project directors through the questionnaire. The product is the estimated expenditures for substitute teachers in the ALL WIN Program by district. It should be pointed out that these are the only data in the study which were derived through estimates made by the evaluation staff rather than by the project directors in each district.

The total amount of salary for personnel in the ALL WIN Program--calculated from Tables II-1-5--is shown in Column 2 of Table II-15.

Expenditures for Health-Welfare Benefits

The project directors were asked to supply the evaluation staff with the health-welfare benefits that were given by each district to its certificated employees as well as to its classified employees. These data are shown in Tables II-6-8 and Table II-9 respectively.

Tables II-6-7 depict the expenditures for health-welfare benefits for administrators (project directors and building principals) who had some responsibilities in the ALL WIN Program during 1974-75. The annual expenditures for these fringe benefits--supplied by the project directors--were multiplied by the percent of time each administrator spent in the program. Although the fringe benefit contribution per certificated employee in Compton is considerably

TABLE II-6

Expenditures for Health-Welfare Benefits for Central Administrators in ALL WIN-USA Program by District for Fiscal Year 1974-75

School District	Number of Administrators in Program	Percent of Time in Program	Average Expenditure Per Certificated Employee FY 1975	Cost of Health-Welfare Benefits Applicable to Program
(1)	(2)	(3)	(4)	(5)
Colton	1	10.0	$ 453	$ 45
Compton	1	1.0	1,567	16
Duarte	1	5.0	420	21
Fontana	1	2.0	636	13
Garvey	1	8.0	574	46
Lawndale	1	8.0	511	36
L.A. County [illegible]	2	[illegible]	2,5[illegible]0	25[illegible]
Ontario-Mont[illegible]	1	3.5	375	13
	1	1.2	375	4

Sources: Column 2, Column 3, and Column 4: Data supplied by participating districts. Column 5: Column 2 x Column 3 x Column 4.

TABLE II-7

Expenditures for Health-Welfare Benefits for Principals
in ALL WIN-USA Program by District for Fiscal Year 1974-75

School District	Number of Administrators in Program	Percent of Time in Program	Average Expenditure Per Certificated Employee FY 1975	Cost of Health-Welfare Benefits Applicable to Program
(1)	(2)	(3)	(4)	(5)
Colton	4	25.0	$ 453	$453
Compton	8	1.0	1,567	125
Duarte	3	5.0	420	63
Fontana	8	2.5	636	127
Garvey	1	15.0	574	86
	1	8.0	574	46
Lawndale	5	3.0	511	77
L.A. County Spec. Sch.	5	5.0	2,503	626
Ontario-Montclair	1	4.0	375	15
	1	3.4	375	13
	1	2.5	375	9
	2	2.3	375	17
	2	2.1	375	16
	1	1.4	375	5

Sources: Column 2, Column 3, and Column 4: Data supplied by participating districts. Column 5: Column 2 x Column 3 x Column 4.

higher than those of the other districts--with the exception of the Los Angeles County Special Schools--the project director and four building principals spent only one percent of their work loads in the program. The result, of course, is a modest expenditure for health and welfare are charged against the program. However, since the contribution for health and welfare in the Los Angeles County Special Schools is high--and the percent of time its administrators are spending in the program is close to the mean of all districts (4.7 and 5.7 respectively)--the result is the highest expenditure for health and welfare in all districts.

Table II-8 illustrates the districts' expenditures for health and welfare benefits for teachers in the ALL WIN Program. Since all instructors were full time in the program, one hundred percent of the average annual expenditure per certified employee was charged against the program. As in Tables II-6 and II-7, the Compton District and the Los Angeles County Special Schools had the highest expenditures for health and welfare benefits

Table II-9 shows the expenditures that districts contributed toward health and welfare benefits for instructional aides in the ALL WIN Program. As in Table II-8, the average expenditure per classified employee was charged against the program, since all instructional aides were full time in the program. In three districts, the

TABLE II-8

Expenditures for Health-Welfare Benefits for Teachers in ALL WIN-USA Program by District for Fiscal Year 1974-75

School District	Number of Teachers in Program	Percent of Time in Program	Average Expenditure Per Certificated Employee FY 1975	Cost of Health-Welfare Benefits Applicable to Program
(1)	(2)	(3)	(4)	(5)
Colton	4	100	$ 453	$ 1,812
Compton	8	100	1,567	12,536
Duarte	3	100	420	1,360
Fontana	8	100	636	5,088
Garvey	3	100	574	1,722
Lawndale	5	100	511	2,555
L.A. County Spec. Sch.	10	100	2,034	20,340
Ontario-Montclair	8	100	375	3,000

Sources: Column 2, Column 3, and Column 4: Data supplied by participating districts. Column 5: Column 2 x Column 3 x Column 4.

TABLE II-9

Expenditures for Health-Welfare Benefits for Instructional Aides
In ALL WIN-USA Program by District for Fiscal Year 1974-75

School District	Number of Aides in Program	Percent of Time in Program	Average Expenditure Per Classified Employee FY 1975	Cost of Health-Welfare Benefits Applicable to Program
(1)	(2)	(3)	(4)	(5)
Colton	6	100	$ 113	$ 678
Compton	7	100	1,068	7,476
Duarte	3	100	420	1,260
Fontana	8	100	375	3,000
Garvey	3	100	[illegible]	1,722
Lawndale	5	100	511	2,555
L.A. County Spec. Sch.	1	100	1,852	1,852
	1	100	1,786	1,786
Ontario-Montclair	8	100	450	3,600

Sources: Column 2, Column 3, and Column 4: Data supplied by participating districts. Column 5: Column 2 x Column 3 x Column 4.

expenditures per classified employee were the same as those for certificated employees. In Ontario-Montclair the expenditure per classified employee was reported as higher than that per certificated employee. As in Tables II-6, II-7, and II-8, the expenditures for health and welfare per certificated employee are highest in the Compton District and the Los Angeles County Special Schools. With the exception of Los Angeles County Special Schools, all of the instructional aides within each district were given the same expenditure for health and welfare. In the special schools of Los Angeles County, however, each of the two instructional aides was given different allocations, since one was employed by the County on a full-time basis and the other on only a 75 percent basis.

Expenditures for Retirement Benefits

The expenditures for retirement benefits were computed for both certificated and classified employees of the ALL WIN Program. These are shown in Tables II-10 and II-11. Since all of the employees in the study were part of either the California State Teachers Retirement System or the California Public Employees Retirement System, there was no need to collect retirement data from the project directors. Table II-10 shows that 4.3 percent of the salaries for certificated employees (central administrators, building principals, and instructors) in the program was the retirement contribution each district made; and this

amount was charged against the ALL WIN Program. In turn, Table II-11 shows that 13.45 percent of the salaries for classified employees (instructional aides) in the program was contributed for retirement, and this was also charged against the program. One should mention that 5.85 percent of the 13.45 percent for classified employees was the district contribution toward Social Security benefits and the remaining percent went to the California Public Employees Retirement System.

The total amount of health and welfare benefits including retirement benefits for personnel in the ALL WIN Program--calculated from Tables II-6 to II-11--is shown in Column 3 of Table II-15.

Expenditures for Regular Supplies and Materials

Table II-12 illustrates the expenditures for regular supplies and materials that were consumed by students in each district who were enrolled in the ALL WIN Program during 1974-75. These expenditures were estimated by the project directors when they completed their questionnaires. It must be stressed that these are supplies and materials other than those which were paid for directly by the grant itself. This latter expenditure--in comparison to the districts' expenditures for the more or less daily supplies and materials--were far more extensive.

The total expenditures for regular supplies and materials in all districts is shown in Column 4 of Table II-15.

TABLE II-10

Expenditures for Retirement Benefits for Certificated Employees in ALL WIN-USA Program by District for Fiscal Year 1974-75

School District (1)	Salaries of Certificated Employees Applicable to the Program (2)	Percent of Employee Salary Contributed by District for Retirement (3)	Cost of Retirement Contribution Applicable to Program (4)
Colton	$ 83,644	4.8	$4,015
Compton	122,175	4.8	5,864
Duarte	41,932	4.8	2,013
Fontana	117,760	4.8	5,652
Garvey	50,551	4.8	2,426
Lawndale	75,896	4.8	3,643
L.A. Co. Spec. Sch.	148,553	4.8	7,131
Ontario-Montclair	128,180	4.8	6,153

Sources: Column 2: From Table II-1/II-3. Column 3: California Education Code.
Column 4: Column 2 x Column 3.

TABLE II-11

Expenditures for Retirement Benefits for Classified Employees in ALL WIN-USA Program by District for Fiscal Year 1974-75

School District	Salaries of Classified Employees Applicable to Program	Percent of Employee Salary Contributed by District for Retirement	Cost of Retirement Contribution Applicable to Program
(1)	(2)	(3)	(4)
Colton	$16,683	13.45	$2,244
Compton	24,522	13.45	3,298
Duarte	15,990	13.45	2,151
Fontana	32,594	13.45	4,384
Garvey	13,181	13.45	1,773
Lawndale	16,549	13.45	2,226
L.A. Co. Spec. Sch.	10,587	13.45	1,424
Ontario-Montclair	30,248	13.45	4,068

Sources: Column 2: From Table II-4. Column 3: California Education Code. Column 4: Column 2 x Column 3.

TABLE II-12

Expenditures for Regular Supplies and Materials Used in ALL WIN-USA Program by District for Fiscal Year 1974-75

School District (1)	Regular Supplies and Materials (2)
Colton	$ 150
Compton	3,674
Duarte	3,888
Fontana	3,016
Garvey	5,420
Lawndale	100
Los Angeles County Special Schools	1,780
Ontario-Montclair	1,400

Sources: Column 2: Estimates made by participating districts.

Expenditures for Plant Operations and Maintenance

Tables II-13 and II-14 illustrate the percent of expenditures by district for plant operations and maintenance that were charged against the ALL WIN Program. The project directors were asked to provide the total expenditures--as recorded in their districts' 1974-75 budgets--for plant operations and maintenance as well as the total number of full-time teachers in their districts. The evaluation staff then computed the cost of both plant operations and maintenance per full-time instructor in the district and multiplied each of these amounts by the number of instructors in each district who participated in the ALL WIN Program. Garvey and the Los Angeles County Special Schools had the lowest total expenditures for plant operations (the latter schools, in all likelihood, because of their special nature and the fact that some maintenance and operations costs might be subsumed in an other than education budget), and Compton and Colton had the highest total expenditures. For maintenance, Garvey, Duarte, and the Los Angeles County Special Schools had the lowest total expenditures and Compton and Ontario-Montclair had the highest.

The total expenditures for plant operations and maintenance in all districts is shown in Columns 5 and 6 respectively of Table II-15.

TABLE II-13

Expenditures for Plant Operations for ALL WIN-USA Program for Fiscal Year 1974-75

School District	Total Cost of Plant Operations FY 1975	Total Number of Full-Time Teachers in District	Cost of Plant Operations Per Full-Time Teacher in District	Number of Teachers in Program	Cost of Plant Operations Applicable to Program
(1)	(2)	(3)	(4)	(5)	(6)
Colton	$1,177,262	439	$2,682	4	$10,728
Compton	3,455,653	1,374	2,515	8	20,120
Duarte	389,495	179	2,176	3	6,519
Fontana	1,208,960	545	2,218	8	17,744
Garvey	289,708	228	1,271	3	3,813
Lawndale	521,050	194	2,686	5	13,430
L.A. Co. Spec. Sch.	315,000	152	2,072	10	20,720
Ontario-Montcl.	769,950	609	1,264	8	10,112

Sources: Column 2, Column 3, and Column 5: Data supplied by participating districts. Column 4: Column 2 divided by Column 3. Column 6: Column 4 x Column 5.

TABLE II-14

Expenditures for Maintenance for ALL WIN-USA Program
for Fiscal Year 1974-75

School District	Total Cost of Maintenance FY 1975	Total Number of Full-Time Teachers in District	Cost of Maintenance Per Full-Time Teacher in District	Number of Teachers in Program	Cost of Maintenance Applicable to Program
(1)	(2)	(3)	(4)	(5)	(6)
Colton	$496,110	439	$1,130	4	$ 4,520
Compton	922,302	1,374	671	8	5,368
Duarte	110,074	179	615	3	1,845
Fontana	710,229	545	1,303	8	10,424
Garvey	73,724	228	323	3	969
Lawndale	167,497	194	863	5	4,315
L.A. Co. Spec.Sch.	135,000	152	888	10	8,880
Ontario-Montcl.	832,035	609	1,366	8	10,928

Sources: Column 2, Column 3, and Column 5: Data supplied by participating district. Column 4: Column 2 divided by Column 3. Column 6: Column 4 x Column 5.

Total District Expenditures

The total district expenditures for the ALL WIN Program are shown in Column 7 of Table II-15. These expenditures were the direct costs of instruction for the program during 1974-75. In terms of total expenditures, Duarte and Garvey had the lowest expenditures and Compton, Fontana, and the Los Angeles Special Schools had the highest expenditures. The total direct expenditures in all districts for the program were $1,249,288.

Table II-16 presents both the number of stations (booths that contain the New Century audio-visual devices) that were available in each district as well as the number of students who were enrolled in the program. While the official enrollment by center was reported monthly to the Office of the Los Angeles County Superintendent of Schools, the enrollment shown in Table II-16 was taken from the June 1975 report. The evaluation staff compared these data with those from other monthly reports and found that the enrollment figures did not vary significantly among the reports.

Column 5 of Table II-16 shows the total district costs per student of the program. This per student cost was derived by dividing the total costs for each district by the district's enrollment. The average per student cost was $156. Duarte had the lowest per student costs of all districts and the Los Angeles County Special Schools had the highest per student costs. The costs were high for the special schools of Los Angeles County because each school

TABLE II-15

Total District Expenditures for ALL WIN-USA Program by District for Fiscal Year 1974-75

School District	Total Salaries Applicable to Program	Total Health-Welfare Benefits Applicable to Program	Regular Supplies and Materials Applicable to Program	Plant Operations Applicable to Program	Maintenance Applicable to Program	Total District Costs Applicable to Program
(1)	(2)	(3)	(4)	(5)	(6)	(7)
Colton	$101,027	$ 9,247	$ 150	$ 10,728	$ 4,520	$ 125,672
Compton	148,601	29,315	3,674	20,120	5,368	207,078
Duarte	58,552	6,768	3,888	6,519	1,845	77,572
Fontana	151,754	18,264	3,016	17,744	10,424	201,202
Garvey	64,362	7,821	5,420	3,813	969	82,385
Lawndale	93,699	11,092	100	13,430	4,315	122,636
L.A. Co. Spec. Sch.	168,602	33,412	1,780	20,720	8,880	233,394
Ontario-Montclair	159,996	16,913	1,400	10,112	10,928	199,349
Total	946,593	132,832	19,428	103,186	47,249	1,249,288

Sources: Column 2: From Tables II-1/II-5. Column 3: From Tables II-6/II-11. Column 4: From Table II-12. Column 5: From Table II-13. Column 6: From Table II-14. Column 7: Total of Columns 2-6.

TABLE II-16

Total District Expenditures Per Student in ALL WIN-USA Program by District for Fiscal Year 1974-75

School District	Number of Stations	Number of Daily Students	Total District Costs of Program	Total District Costs Per Student
(1)	(2)	(3)	(4)	(5)
Colton	134	710	$125,672	$177
Compton	308	1,580	207,078	131
Duarte	108	648	77,572	120
Fontana	230	1,132	201,202	178
Garvey	92	552	82,385	149
Lawndale	184	960	122,636	128
Los Angeles Co. Spec. Sch.	162	906	233,394	258
Ontario-Montclair	276	1,514	197,349	132
Total	1,494	8,002	1,249,288	156

Sources: Column 2 and Column 3: ALL WIN-USA Statistical Summaries supplied by the Office of the Los Angeles County Superintendent of Schools. Column 4: From Table II-15. Column 5: Column 4 divided by Column 3.

in the program had a lower teacher-student ratio than did the other districts that participated in the program. Another possible explanation for the cost of the program in special schools is the extent to which it was used as the "regular" program rather than a "supplementary" one.

EXPENDITURES FOR THE ALL WIN-USA PROGRAM MADE FROM THE FEDERAL GRANT

In addition to the costs incurred directly by school districts, there were other expenses paid for directly by the federal grant. Evaluation project staff feels that it is important to examine these costs in two categories: on-going expenditures, and start-up expenditures.

On-Going Expenditures

Table II-17 illustrates the expenditures that were considered to be on-going each year that the program is operated. These expenditures were paid for directly by the grant. The largest on-going expenditure was for instructional supplies. This amount is considerably higher than the expenditures made by the individual districts for their regular supplies and materials (see Table II-12). The expenditures for the Los Angeles County Educational Auditor and for Evaluation were grouped separately from the remaining on-going expenditures because they are both items that might undergo some change in scope each year that the program is conducted in school districts. The on-going

expenditures excluding the two items relating to evaluation are $662,174.

Start-Up Expenditures

Table II-18 represents the start-up expenditures that were paid for directly by the grant. They were considered to be "start-up" because they would not have to be made each time the program was offered in a school district. Each of the four items was amortized over a specified number of years. This period of time was arrived at through estimates made by evaluation project staff after consultation with several project directors.

The item of pre-service training involved a one-week training session of the ALL WIN Program instructors prior to the initiation of the program. The rationalization for amortizing the session over a five-year period was that the instructors presently in the program would, in all likelihood, not require any additional pre-service training in the first five years of the program. However, after five years there is a strong probability that the program would have to undergo some extensive changes which might then require new pre-service training.

The audiovisual equipment and the typewriter (the latter purchased for the project director's secretary and housed at the Office of the Los Angeles County Superintendent of Schools) were amortized respectively over a four- and five-year period. The carrels, however, were amortized

TABLE II-17

On-Going Expenditures of ALL WIN-USA Program
Paid Directly by the Grant for Fiscal Year 1974-75

Category (1)	Amount of Expenditure (2)
Project Director	$ 26,232
Typist	7,908
Fringe Benefits	5,623
In-Service Training	25,300
Instructional Supplies	558,777
Office Supplies	965
Mileage and Conferences	2,169
Contract Maintenance	35,200
Sub-Total On-Going Expenditures	$662,174
Los Angeles County Educational Auditor	13,134
Evaluation	58,076
Sub-Total On-Going Evaluation Expenditures	$ 71,210
Total On-Going Expenditures Including Evaluation	$733,384

Sources: Column 1 and Column 2: Data supplied by the Office of the Los Angeles County Superintendent of Schools.

TABLE II-18

Amortization of Start-Up Expenditures of ALL WIN-USA Program Paid Directly by the Grant for Fiscal Year 1974-7[illegible]

Category	Amount of Start-Up Expenditure	Years of Amortization	Amortized Expenditure
(1)	(2)	(3)	(4)
Pre-Service Training	$ 70,400	5	14,080
Audiovisual Equipment	253,394	4	63,349
Carrels	54,873	10	5,487
Typewriter	770	5	154
	Total Amortized Expenditures		83,070

Sources: Columns 1 and 2. Data supplied by the Office of the Los Angeles County Superintendent of Schools. Column 3: Estimates made by participating districts. Column 4: Column 2 divided by Column 3.

over a ten-year period, since unlike the equipment, they had no movable parts and therefore were not subjected to "wear and tear" by the students. The total yearly start-up expenditures, amortized over their respective periods, were $83,070.

Total Grant Expenditures

Table II-19 illustrates the total expenditures (on-going and start-up) for the ALL WIN Program which were paid for directly by the grant. The total expenditures were $816,454. When this amount was divided by the total number of students enrolled in the program (8,002), the result showed a total cost of $102 per student--which was paid directly by the grant.

TOTAL EXPENDITURES FOR ALL WIN-USA STUDENTS

Total Direct Expenditures
(Not Including Indirect Costs)

Table II-20 shows in Column 3 the total expenditures of the ALL WIN Program. These expenditures represent the total expenditures made by all the districts that participated in the program (Column 1) as well as those expenditures that were paid for directly by the grant (Column 2). Since the total expenditures for the program were $2,053,072, and there were 8,002 students enrolled in the program throughout the eight districts, the total cost of enrolling each student in the program for 1974-75 was $258.

TABLE II-19

Total Grant Expenditures Per Student in ALL WIN-USA Program for Fiscal Year 1974-75

Total On-Going Expenditures Including Evaluation	Total Amortized Expenditures	Total Costs Paid by Grant	Number of Daily Students	Total Costs Per Student Paid by Grant
(1)	(2)	(3)	(4)	(5)
$733,384	$83,070	$816,454	8,002	$102

Sources: Column 1: From Table II-17. Column 2: From Table II-18. Column 3: Total of columns 1 and 2. Column 4: From Table II-16. Column 5: Column 3 divided by Column 4.

TABLE II-20

Total Direct Expenditures Per Student in ALL WIN-USA Program for Fiscal Year 1974-75

Total Expenditures Made by Districts for Program	Total Expenditures Made by Grant for Program	Total Expenditures of Program	Number of Daily Students	Total Direct Costs Per Student in Program
(1)	(2)	(3)	(4)	(5)
$1,249,288	$816,454	$2,065,742	8,002	$258

Sources: Column 1: From Table II-15. Column 2: From Table II-19. Column 3: Total of Columns 1 and 2. Column 4: From Table II-16. Column 5: Column 3 divided by Column 4.

Total District Expenditures
(Including Other Program costs)

Table II-21 illustrates the total of other program expenditures incurred by each district that participated in the program. These expenditures were calculated in the following way. The eight project directors indicated on the questionnaire the total amount of expenditures that were made in each of their districts for 1974-75. The evaluation staff subtracted from each of these totals the direct cost of the ALL WIN Program in each respective district (see Table II-15). These new totals (Column 4 of Table II-21) then represented each district's expenditures excluding their expenditures for the ALL WIN Program. By dividing these totals by each district's average daily attendance for 1974-75 (which the evaluation staff obtained by telephoning the offices of the Los Angeles County Superintendent of Schools and the San Bernardino County Superintendent of Schools), the total district costs per student excluding the costs of the ALL WIN Program (Column 6 of Table II-21) were derived. By multiplying each of these costs by the number of students enrolled in the ALL WIN Program in each district, the evaluation staff obtained the costs of the regular program in the eight participating districts (Column 8 of Table II-21).

Compton had the highest indirect costs of the program and Los Angeles County Special Schools had the lowest regular program costs. Since Compton had the highest

total expenditures and Los Angeles County Special Schools had one of the lowest of the eight districts, these results are not surprising. Because of the special nature of the schools administered by Los Angeles County, the evaluation staff calculated the total regular program costs of the program in each district as well as the total regular program costs in each district except the Los Angeles County Special Schools. Each of these totals are also shown in Table II-21.

Table II-22 depicts the total expenditures including the regular program costs that were incurred during 1974-75 in conducting the ALL WIN Program (Column 5). When these total expenditures were divided by the total number of enrolled students, the total expenditures per student ($1,380) were derived.

Once again, because of the special nature of the schools administered in Los Angeles County, the evaluation staff also calculated the total expenditures of the ALL WIN Program in all districts except Los Angeles County. To do this, the staff subtracted the total expenditures for Los Angeles County Special Schools (shown in Table 15) from the total expenditures made by all districts. The staff also subtracted the regular program costs for the special schools of Los Angeles County (shown in Table II-21) from the total regular program costs of the program in all districts. To subtract the share of the expenditures made by the grant for Los Angeles County Special Schools, the staff first determined

TABLE II-21

Total Regular Program Expenditures Per Student in ALL WIN-USA Program by District for Fiscal Year 1974-75

School District	Total District Expenditures Including All Win Program FY 1975	Total District Expenditures for All Win Program FY 1975	Total District Expenditures Excluding All Win Program FY 1975	District Average Daily Attendance FY 1975	Total District Expenditures Per ADA Excluding All Win Program FY 1975	Number of Daily Students in All Win Program FY 1975	Total Regular Program District Costs for All Win Students FY 1975
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Colton	$ 13,670,215	$125,672	$ 13,544,543	11,495	$1,178	710	$ 836,380
Compton	45,923,969	207,078	45,716,891	33,397	1,369	1,580	2,163,020
Duarte	5,362,733	77,572	5,285,161	4,300	1,229	648	796,392
Fontana	15,482,139	201,202	15,280,937	13,048	1,171	1,132	1,325,572
Garvey	7,134,371	82,385	7,051,986	5,985	1,178	552	650,256
Lawndale	5,520,407	122,636	5,397,771	5,224	1,033	960	991,680
L.A. Co. Spec. Sch.	5,575,770	233,394	5,342,376	8,048	664	906	601,584
Ontario-Montclair	17,297,684	199,349	17,098,235	15,932	1,073	1,514	1,624,522
Total	115,967,288	1,249,208	114,717,900	97,429		8,002	8,989,406
Total excluding L.A. Co. Spec. Sch.	110,391,518	1,015,894	109,375,524	89,381		7,096	8,387,822

Sources: Column 2: Data supplied by participating districts. Column 3: From Table II-15. Column 4: Column 3 subtracted from Column 2. Column 5: Data supplied by office of Los Angeles County Superintendent of Schools and office of San Bernardino County Superintendent of Schools. Column 6: Column 4 divided by Column 5. Column 7: From Table II-16. Column 8: Column 6 x Column 7.

TABLE II-22

Total Expenditures Per Student in ALL WIN-USA Program for Fiscal Year 1974-75
(Including Regular Program Costs)

School District	Total Direct District Expenditures for Program	Total Regular Program District Expenditures for Program	Total Expenditures Made by Grant	Total Expenditures for Program	Number of Daily Students in Program	Total Expenditures per Student in Program
(1)	(2)	(3)	(4)	(5)	(6)	(7)
All Districts	$ 1,249,288	$ 8,989,435	$ 816,454	$ 11,055,148	8,002	$1,382
All Districts excluding Los Angeles Co. Special Schools	1,015,894	8,387,822	724,031	10,127,747	7,096	1,427

Sources: Column 2: From Table II-15. Column 3: From Table II-21. Column 4: From Table II-20. Column 5: Total of Columns 2, 3, and 4. Column 6: From Table II-16. Column 7: Column 5 divided by Column 6.

the percent of total students which were enrolled in the special schools (11.32 percent). This percentage was then multiplied by the total grant expenditures to obtain the grant expenditures that went to the special schools of Los Angeles County ($92,423). Subtracting that amount from the total grant expenditures produced the total expenditures made by the grant to all districts excluding Los Angeles County Special Schools (Column 4 of Table II-22). Finally, dividing this amount by the number of students enrolled in all districts except Los Angeles County Special Schools, the evaluation staff derived the total expenditures per student (excluding Los Angeles County Special Schools) enrolled in the program (Column 7 of Table II-22).

CHAPTER III

SUMMARY OF OUTCOME DATA

The educational impact of the ALL WIN-USA Program during the 1974-75 school year has been assessed and reported in the final evaluation report of Educational Evaluation Associates. In an effort to identify information that will be most useful in performing a rigorous cost-effectiveness analysis of the ALL WIN Program, we reviewed the evaluation procedures and outcome data that were previously reported.

Although a number of different outcome measures covering a variety of program effects were utilized in the original evaluation design, only the student cognitive outcomes lend themselves to a reliable cost-effectiveness methodology. Measures of student, staff and parent affect were used in the evaluation, but the outcome data generated by these instruments must be cautiously regarded as "suggestive" of the program's impact. This concern for the possible unreliability of these data was shared by the EEA evaluators as they commented that "the general ineffectiveness of affective measures or the inability of educational programs to alter affect is, of course, a hotly debated issue in the field of educational evaluation" (EEA: 1975, p. 55).

Student cognitive effects were assessed with standardized achievement measures and criterion-referenced tests. The latter were constructed to measure specifically the learning objectives of the New Century educational program, the curriculum package which provided the instruc-

tional foundation for the ALL WIN-USA Program. The testing procedures for these criterion-referenced tests followed a rather complex sampling plan that was designed to avoid overlap with district standardized testing, and to minimize testing time in general. The actual sampling plan for the criterion-referenced reading tests appears in Table III-1, while Table III-2 presents the comparable plan for Mathematics tests. It is important to note from these tables that approximately half of the learning centers were scheduled for either pre-testing or post-testing. Unfortunately, collection of these outcome data revealed that only four mathematics centers reported complete pre- and post-test results, while comparable data for the reading centers was even more critically scarce. Since complete pre- and post-test data for the same schools are necessary for meaningful cost-effectiveness assessments, the criterion-referenced results are unusable for our purposes. Consequently, we defer further discussion of these data in favor of the standardized achievement outcomes.

Procedures for the analysis of standardized achievement outcomes included a pretest-posttest gain analysis, as well as a time series assessment of the program's impact. The latter was performed by comparing student performance on standardized tests to their achievement growth in previous years. Records of ALL WIN students in grades three, four, five and six were searched for test scores from the years 1973 and 1974. Students with comparable end-of-year test

TABLE III-1

School and Grade Sampling Plan for Criterion-Referenced Reading Tests

District	School	Grades 4	5	6	7	8	9	10
Duarte Unified	Andres-Duarte			Pre	Pre	Pre		
	Duarte High School						Pre/ Post	Pre/ Post
	Northview		Post	Post	Pre	Pre		
Lawndale Elementary	Anderson	Pre	Pre	Pre				
	Roosevelt	Pre	Pre	Pre				
	Addams	Post	Post	Post				
	Green	Post	Post	Post				
	Rogers				Post	Post		
Fontana	Randall Pepper	Pre	Pre	Pre				
Ontario-Montclair	Mission	Pre						
Colton Unified	Lincoln	Post						
Number pretested		200	150	200	100	100	80	80
Number posttested		150	150	150	120	120	80	80

TABLE III-2

School and Grade Sampling Plan for Criterion-Referenced Mathematics Tests

District	School	Grades 4	5	6	7	8	9	10
Fontana Unified	Oleander	Pre/ Post	Pre/ Post	Pre/ Post				
	N. Tamarind	Pre/ Post	Pre/ Post	Pre/ Post				
Ontario-Montclair	Imperial				Pre/ Post	Pre/ Post		
	DeAnza				Pre/ Post	Pre/ Post		
Number pretested		110	110	110	180	180		
Number posttested		110	110	110	180	180		

scores were then selected for an analysis of the program's impact during the present year over achievement growth in previous years when students did not participate in ALL WIN learning centers. The range of standardized instruments, their forms and levels of administration during the three-year period appear in Table III-3.

In order to determine the differential impact of the ALL WIN program, two periods of achievement growth were statistically compared for different "cohorts," or groups of students. Period "A" referred to achievement gain from 1973 to 1974, and was termed "predicted gain" since it represents the amount of growth that might be expected in the absence of the ALL WIN program. Period "B" referred to achievement gain from 1974 to 1975, and was termed "actual gain" since it represented the effect of the ALL WIN program. Superior performance by ALL WIN students would be indicated by greater achievement gain during Period B than during Period A. This information is summarized in the upper portions of Table III-4. Specific comparisons of actual and predicted gains were carried out for four separate cohorts of students whose progress through the ALL WIN program began at different times in their educational careers. These groups are presented in the lower portion of Table III-4.

The results of this analysis are summarized in Table III-5 for the reading centers, and Table III-6 for the Math centers. Inspection of these tables indicates that about 28% of all reading center comparisons showed superior achievement

TABLE III-3

Standardized Achievement Tests Administered In Each District and Grade for Each of Three Years

District	Grade	75 Posttest	74 Posttest	73 Posttest
Colton Unified	3	CPT-23A	CPT-23A	CPT-12A
	4	CTBS-Q2	CPT-23B	CPT-23A
	5	CTBS-Q2	CTBS-Q2	CPT-23B
	6	CTBS-Q2	CTBS-Q2	CTBS-Q2
Compton Unified	3	CTBS-SC	CPT-12B	CPT-12A
	4	CTBS-S1	CPT-23B	CPT-23A
	5	CTBS-S2	CTBS-Q1	CPT-23B
	6	CTBS-S2	CTBS-Q2	CTBS-Q1
Fontana Unified	4	CTBS-S1	CPT-23B	CPT-23A
	5	CTBS-Q2	CTBS-Q2	CPT-23A
	6	CTBS-Q2	CTBS-Q2	CTBS-Q2
Garvey Elementary	3	CPT-23B	CPT-23A	CPT-12A
	4	CTBS-Q2	CPT-23B	CPT-23A
	5	CTBS-Q2	CTBS-Q2	CPT-23B
Ontario-Montclair Elementary	3	CTBS-S1	CPT-23A	CPT-12A
	4	CTBS-S1	CPT-23B	CPT-23A
	5-6	CTBS-S2	CTBS-Q2	CPT-23B

TABLE III-4

ACHIEVEMENT GAIN PERIODS AND STUDENT COHORTS
COMPARED IN "STANDARIZED TIME-SERIES" ANALYSIS

Gain Period	Time Span		All Win Status
A (predicted)	1973 post-test to 1974 pre-test		Not implemented
B (actual)	1974 post-test to 1975 pre-test		Implemented
Student Cohort	1973	1974	1975
1 - 2 - 3	Grade 1	Grade 2	Grade 3
2 - 3 - 4	Grade 2	Grade 3	Grade 4
3 - 4 - 5	Grade 3	Grade 4	Grade 5
4 - 5 - 6	Grade 4	Grade 5	Grade 6

gain during the period of ALL WIN implementation. For the Math centers, only one comparison out of a total of three proved significant. The tentative nature of the Math center results was pointed out in the evaluation report.

Procedures for the standardized pre-test/post-test gain analysis included all learning center students who were pre- and post-tested with a normed reading or mathematics test for purposed other than the evaluation of the ALL WIN program. These purposes included statewide, district and Title I testing, and utilized the Cooperative Primary Test (CPT), the Comprehensive Test of Basic Skills (CTBS), and the Wide Range Achievement Test (WRAT). The actual distribution of these tests across districts and grade levels appears in Table III-7.

Standardized achievement effects were determined by statistically comparing mean pre-test/post-test gain scores to an estimated criterion of 1.25 months growth for each month of center operation. Because ALL WIN centers were only operational for eight school months, the observed pre-test, post-test gains were adjusted by a factor of 10/8 ths. This correction factor was intended to project each center's achievement growth through a regular ten month school year. The comparisons of "adjusted" pre-test/post-test growth were then made for each school, district and grade level in both reading and mathematics. The results for each grade level are summarized in the upper portion of Table III-8 for reading, and the lower portion of Table III-8

for Math. Inspection of these findings indicates a greater achievement growth at upper grade levels in both reading and mathematics.

In an effort to utilize the most powerful analytic tools to provide outcome data that would be useful for a cost-effectiveness analysis of the ALL WIN program, the standardized pre- and post-test scores were re-analyzed by the method of linear regression (Guilford, 1965). This procedure generates a statistical prediction equation that specifies the expected relationship between pre-test score levels and their corresponding predicted post-test levels. The analyses were performed separately for each grade level in reading and mathematics, and the results of these analyses are presented in Table III-9 for the standardized reading outcomes, and in Table III-10 for the corresponding mathematics outcomes. Inspection of the prediction equations in Table III-9 indicates a differential pattern of pre-test/post-test growth from grades 2 through 6. We determine this by inspecting the number that multiplies the pre-test levels in each of the prediction equations. For example, at grade 4, the best statistical prediction of a reading post-test level is obtained by multiplying a given pre-test score by a factor of .973, then adding this result to the constant 1.064. The most important thing to note about the prediction equation is that the multiplication factor for the pre-test actually specifies the rate of achievement growth in post-test scores relative to pre-test achievement.

Table III-5

Mean Predicted and Actual Reading Gain Scores and Values of t-Statistic for Each of Four Grade Cohorts Based on Grade Equivalent Scores from Schools with Reading Learning Centers[1]

School/ District	Grade Cohorts											
	1-2-3			2-3-4			3-4-5			4-5-6		
	Gain A	Gain B	t	Gain A	Gain B	t	Gain A	Gain B	t	Gain A	Gain B	t
District 1												
1A	.42	.52	.47	.32	1.03	2.29*	.93	.80	-.20	1.07	.31	-1.17
1B	.54	.99	2.26*	.05	1.05	5.30*	.63	.82	.87	.86	.67	-.58
1C	--	--	--	.10	.45	1.25	.75	.98	.97	1.02	1.46	1.58
1D	.98	.45	2.39	.63	.46	-.63	.85	1.52	2.73*	1.56	.48	-4.86
Total	.64	.66	.11	.28	.74	2.32*	.79	1.05	2.00*	1.12	.74	-1.46
District 2												
2A	.30	.97	5.82*	1.30	-.58	-1.90						
2B	.34	1.28	5.98*	--	--	--	--	--	--			
2C	.21	1.10	2.53*	-.08	.46	1.13	.55	-.40	-1.72			
2D	.75	.65	-.1	.14	.86	1.56	-.9	.63	2.48*	--	--	--
2E	.28	2.34	2.45*	.46	.80	1.19	1.26	2.96	2.38*	-.02	2.30	4.71*
2G	--	--	--	.72	.80	.43	.77	1.19	2.17*	--	--	--
2H	-.06	.34	1.36	.29	1.20	3.25	.53	.21	-.81	-.08	1.14	4.30*
Total	.30	.34	1.36	.29	1.20	3.25	.53	.21	-.81	-.08	1.14	4.30*
District 4												
4B				.69	1.30	2.24*	.99	.41	-1.07	.58	.67	.25
4E				.94	.51	-1.33	.39	.69	1.15	.70	1.88	5.22*
4F				.61	.76	.45	.37	.86	1.96*	.75	.57	-.62
4G				.57	.87	1.44	.86	1.47	2.32*	1.16	.85	-1.42
4H				-.22	.53	2.33*	.08	1.61	5.28*	--	--	--
Total				.51	.79	1.33	.53	1.00	1.39	.80	.99	.58

Table III-5, Continued

School/ District	Grade Cohorts											
	1-2-3			2-3-4			3-4-5			4-5-6		
	Gain A	Gain B	t	Gain A	Gain B	t	Gain A	Gain B	t	Gain A	Gain B	t
District 5												
5A	.34	.80	2.98*	.81	.95	.65	.13	1.04	1.29			
District 8												
8A	.16	.70	1.31	.25	1.08	3.95*	.90	1.76	1.53	1.00	.73	-.94
8C	.57	.52	-.12	.31	1.24	2.25*	.60	.95	.72	1.22	1.26	.04
8D	.21	.60	2.12*	.65	1.68	2.92*	--	--	--	--	--	--
8E	.60	.35	-.29	.47	.92	1.18	.58	1.15	1.82*	1.12	1.03	-.27
8G	.38	.88	2.59*	.45	1.03	3.13*	.73	.79	.29	.91	1.42	1.71*
Total	.38	.61	1.42	.42	1.19	7.04*	.70	1.16	2.71*	1.06	1.11	.28
Cohort Totals	.40	.87	3.38*	.46	.82	2.66*	.57	.97	2.66*	.86	1.05	.90

1 Dependent t-test employed with student gains as unit of analysis

* Significant at .05 level.

Table III-6

Mean Predicted and Actual Mathematics Gain Scores and Values of t-Statistic for Each of Four Grade Cohorts Based on Grade Equivalent Scores from Schools with Mathematics Learning Centers[1]

School/ District	Grade Cohorts											
	1-2-3			2-3-4			3-4-5			4-5-6		
	Gain A	Gain B	t	Gain A	Gain B	t	Gain A	Gain B	t	Gain A	Gain B	t
District 4												
4C				.46	.53	.25	.36	.81	2.54*	.72	.98	.94
4D				.96	.84	-.24				1.04	.81	-.96
Total				.53	.57	.18	.36	.81	2.54*	.78	.90	.69
District 8												
8H	.88	.79	-.24	.81	.64	-.63	1.20	1.63	1.41	1.02	1.46	1.66
Cohort Totals	.88	.79	-.24	.74	.67	-1.00	.78	1.22	**	.92	1.08	.78

[1]Dependent t-test employed with student gains as unit of analysis.

*Significant at .05 level.

**Insufficient number of schools to compute overall t-value.

Table III-7

Standardized Achievement Tests Administered in Each District and Grade

District	Grade	1974 Pretest	1975 Posttest
Colton Unified	3	CTP-23A	CPT-23B
	4-6	CTBS-Q2	CTBS-Q2
Compton Unified	1	CTBS-SA	CTBS-SB
	2	CTBS-SB	CTBS-SB
	3	CTBS-SC	CTBS-SC
	4	CTBS-S1	CTBS-S1
	5-6	CTBS-S2	CTBS-S2
Fontana Unified	4	CTBS-S1	CTBS-S1
	5-6	CTBS-Q2	CTBS-Q2
Garvey Elementary	2	CPT-23A	CPT-23A
	3	CPT-23B	CPT-23B
	4-5	CTBS-Q2	CTBS-Q2
	7	CTBS-Q2	CTBS-Q2
L.A. County Special	7-12	WRAT	WRAT
Ontario-Montclair Elementary	2	CPT-23B	CPT-23A
	3-4	CTBS-Q1	CTBS-S1
	5-6	CTBS-Q2	CTBS-S2
	7-8	CTBS-Q3	CTBS-S3

TABLE III-8

Mean Grade Equivalent Gain Scores in Reading [1]

Grade Level					
2	3	4	5	6	Grand Total
1.0	1.2	1.7*	1.6*	1.3*	1.4*

Mean Grade Equivalent Gain Scores in Mathematics [1]

Grade Level							
2	3	4	5	6	7	8	Grand Total
.8	1.1	1.0	1.5*	1.3*	2.1*	2.9*	1.6*

1. Entries rounded to one decimal place

* Meets criterion of exceeding 1.25 months growth

TABLE III-9

STATISTICAL PREDICTION RESULTS FROM STANDARDIZED READING OUTCOMES

Grade		Observed Pretest Mean	Observed Posttest Mean	Pre-Post Corr.	Sample Size
2	Posttest = .270 x pretest + 1.745	1.432	2.171	.35	174
3	Posttest = .629 x pretest + 1.660	1.934	2.877	.57	412
4	Posttest = .973 x pretest + 1.064	2.694	3.686	.75	786
5	Posttest = .794 x pretest + 2.098	3.429	4.822	.52	636
6	Posttest = .954 x pretest + 1.197	4.375	5.369	.83	461

TABLE III-10

STATISTICAL PREDICTION RESULTS FROM STANDARDIZED MATHEMATICS OUTCOMES

Grade	Prediction Equation	Observed Pretest Mean	Observed Pretest Mean	Pre-Post Corr.	Sample Size
2	Posttest = -.159xPretest + 2.912	1.908	2.601	.15	26
3	Posttest = .592x Pretest + 1.783	2.218	3.097	.54	62
4	Posttest = .790x Pretest + 1.433	3.000	3.801	.61	198
5	Posttest = 1.139x Pretest + .704	3.641	4.850	.77	130
6	Posttest = .953x Pretest + 1.271	4.852	5.894	.95	145
7	Posttest = .662xpretest + 3.277	4.549	6.287	.56	194
8	Posttest = .614xPretest + 4.063	4.432	6.790	.53	156

For example, at grade 4, a one-year grade equivalent increase at pre-test corresponds to a .794 grade equivalent increase at post-test. Thus, whenever the multiplication factor for the pre-test is less than 1.0, it indicates that a one-year increase at pre-test corresponds to some lesser degree of achievement at post-test. Consequently, the larger the multiplication factor the greater the achievement gain and the greater the impact of the educational program.

The pattern of increasing pre-test multiplication factors with increasing grade levels suggest greater achievement growth in the upper grades for standardized reading outcomes. A similar, but somewhat less consistent pattern is evident for the standardized mathematics outcomes appearing in Table III-10. A glaring exception occurs at grade 2, where a one-year grade equivalent increase at pre-test corresponds to a .159 grade equivalent decrease at post-test. We should accept this result with great caution since only 26 students provided the basis for this analysis. Such a small sample size can hardly be deemed representative of the entire ALL WIN-USA program.

That greater pre-test/post-test growth generally occurs at higher grade levels is a finding that is consistent with the results of the previously reported ALL WIN evaluation (q.v., Table III-8). We speculate, tentatively, that the poorer achievement growth observed at lower grade levels may result from the younger child's more limited ability to work

with complex curricular products. Of course, we possess no empirical evidence to substantiate this speculation, but we offer it merely as an educated guess about the cause for the results of the standardized achievement analysis.

The use of regression analysis to examine pre-test/post-test achievement relations would provide an excellent foundation for statistically sophisticated cost-effectiveness because constraints in the original sampling plan did not permit the kind of representative sampling that cost-effective analysis necessitates. Examination of the last column in Tables III-9 and III-10 reveal a wide variation in the number of students tested in reading (174 to 786 students) and mathematics (16 to 198). Such variations would, unfortunately, render some of the cost-effectiveness ratios (based on predicted outcome residuals) unreliable. As a consequence, we utilize the best alternative procedure to provide informative cost-effectiveness results for the ALL WIN program. This approach involved cost-effectiveness ratios that are computationally based upon cost per gross outcome unit utilizing the data from Table III-8.

CHAPTER IV

COST EFFECTIVENESS ANALYSIS

This chapter is concerned with producing cost-effectiveness ratios for the ALL WIN-USA program. These ratios will be produced for both reading and mathematics and for each of the grade levels for which appropriate data are available. We will consider the fiscal data produced in Chapter II and the outcome data of Chapter III. Each will be examined and modified as necessary to bring the two sets of data into conformity. Next, the cost-effectiveness ratios will be calculated. Finally, we will report on the procedures followed in attempting to attain cost-effectiveness data from other projects or programs that might be used for base-line comparison purposes.

Fiscal Data

In Chapter II, we have indicated procedures utilized for determining the costs of the ALL WIN program. Calculations have been made based upon the various data sources and in a succession of tables we have indicated quite clearly the manner in which each calculation was performed. Based upon this meticulous fiscal analysis, precise cost data for the program have been determined.* Three categories of cost have been isolated:

1. District expenditures directly related to the ALL WIN program.
2. Expenditures made directly from the grant by Los Angeles County Schools; and

*Under the assumption of the accuracy of the data reported by local school districts.

3. Regular program costs.

Examining the first of these, district expenditures directly related to the operation of the ALL WIN program, we note that the results of our calculations have determined this figure to be $143.00 per student in the program. This was determined by dividing the expenditures in this category from Table II-15, Column 7 by the total number of daily students in the program (7,096). We have performed these calculations excluding the Los Angeles County Special Schools data for the reasons indicated within Chapter 2. Included within this $143 per student expenditure are the costs of teacher's salaries, aides, administrative costs, employee benefits, regular supplies and expenses, and the maintenance and operations costs attributable to the space utilized by the program. (As previously noted, this was determined on a student pro-rata basis.)

The second category of fiscal data is expenditures made directly through the contract as supervised by Los Angeles County Schools. These costs include project administration by the Los Angeles County Schools, pre-service and in-service training, evaluation, instructional supplies and equipment (appropriately amortized). The per pupil average cost for this category of expenditure is $102.00. This figure was determined by dividing $724,031 (Column 4 of Table II-22) by 7,096 (Column 6 of Table II-22). The total of the above mentioned items gives a sum ($245) which may be considered an indication of the supplemental expendi-

tures for the program.

However, students in all cases are in regular classrooms and attend the ALL WIN Center for only a portion of their total school day. Thus, the total cost of education for each student must include the regular program costs of providing education in the indicated school districts as supplemented by the $245.00 additional cost incurred from the two sources mentioned above. Calculations from Table II-21 of Chapter 21 yield an average regular program cost for the districts involved (excluding Los Angeles County Special Schools) of $1,182 per student in Average Daily Attendance.

A closer examination of the actual practices that takes place within the school districts reveals a further difficulty with the fiscal data. While each of the school districts reported teachers' salaries associated with operating the ALL WIN-USA Learning Centers, apparently this does not represent an incremental teacher salary above and beyond that which would normally be provided for the number of students stipulated. Whether it was the intent of the program that there be an additional teacher, we do not know. But based upon our observations and follow-up conversation with Dr. Harry Holmberg, we have been assured that what happens in actuality is that through a process of students being assigned to teachers for various hours (e.g. the ALL WIN Learning Center is a homeroom for a group of students) no incremental teacher cost is incurred. Thus, while the

data reported by the districts and the program, as we understood it, seemed to imply the necessity of calculating teachers' salaries as an additional district expenditure, apparently there is the need to modify those fiscal data to concur with the reality of the situation. The expenditures for teachers' salaries indicated as spent directly by the districts (Table II-3) is $564,847.00. The expenditure for substitute teachers which need not be included since it is, by this line of reasoning, already a part of the regular program expenses of the district, is $8,092.00 (Table II-5) and the associated health and welfare benefits for the teaching personnel excluded (Table II-8) is $27,973.00. These total $600,912.00 in excluded expenditures for all districts except Los Angeles County Special Schools, or a total of $84.68 per student.

When the $84.68 per student is deleted, this reduces the direct district expenditure per student from $143.00 to $58.00, which when added to the $102.00 per pupil average cost directly spent by the contract yields a total of $160.00 per pupil in supplemental costs. A further comment on the subject of the actual practice of the school districts and potential areas of conflict--while some instructional aides in the districts may have been paid for by "other" grant funds and not directly chargeable to ALL WIN, this practice is by no means uniform and, in any case, seems to be appropriately listed as a direct district expenditure for the program. Likewise, all other costs charged to the direct

expenditure category, including proportionate share of administrative expenses, related benefits, instructional supplies and materials, all appear to be quite appropriate. Thus, to summarize, based upon actual practice in the districts involved, and not necessarily upon the intent of the program, the total of the direct expenditures incurred either by the district or through the contract, is $160.00 per student.

However, the inclusion of $600,912.00 from district direct expenditures, increases the regular district expenditure tabulation of Table II-21 (Column 4) by a like amount. The net effect of this addition is to increase our estimate of the average regular program costs for the districts involved by $7.00 per student, to $1,189.00. This is summarized in Table IV-1, which follows.

Outcome Data

The outcome data are presented in complete form in Chapter III. The results presented in that chapter are not in need of adjustment in order to be compatible with the fiscal data as modified. Thus, we will simply present a summary of the pre-test/post-test differences as indicated in Chapter III. They are summarized by grade level in Table IV-2, following.

TABLE IV-1

Expenditure Summary (per ALL WIN Student):
Before and After Teacher Salary Modification

	Before Modification	After Modification
Direct District Expenditures	$143.00	$58.00
Expenditures Made by Grant	$102.00	$102.00
SUB TOTAL	$245.00	$160.00
Regular Program District Expenditures	$1,182.00	$1,189.00
TOTAL	$1,427.00	$1,349.00

TABLE IV-2

Pre-Test/Post-Test Differences
(By Grade Level)

GRADE	READING	MATH
2	1.0	0.8
3	1.2	1.1
4	1.7	1.0
5	1.6	1.5
6	1.3	1.3
7		2.1
8		2.9

Since L.A. County Special Schools fiscal data have been excluded, it is necessary to be sure that Special Schools test data also are excluded from the cost effectiveness analysis. Fortunately, these schools were not included in the test sample used in this study because they used a vastly different Reading Test. This omission insures a "cleaner" comparison of fiscal and outcome data.

Cost Effectiveness Ratios

The fiscal data were collected on a basis aggregated by district; thus, there is no breakdown as to the expenses incurred at each specific grade level within district or incurred at a grade level basis across districts. Given the time of funding of the project and the necessity for making great demands upon district personnel during the difficult vacation period, we felt it best not to impose the additional request of itemized breakdown of costs by individual class. Thus, we are unable to determine different cost figures for different grade levels and must use the aggregate data discussed above as indicators at all grade levels. Fortunately, the test data to be utilized in this analysis are only available up to the 8th grade and our examination of fiscal patterns in the school districts of California reveals that greatest cost increases occur past that level. Thus, the use of the same aggregated cost total for each grade level is not viewed as a severe disadvantage.

Using the fiscal costs directly incurred by the

program ($160.00 per student) and the regular program costs ($1,189.00 per student) in comparison with the student test gains reported in Table IV-2, we are able to determine cost effectiveness ratios for each grade level. These cost effectiveness ratios are, in essence, the cost per month gain in student achievement for every month students are in the program (cost per month's gain per month in program). These calculations are shown in Tables IV-3 and IV-4.

Comparison Data

As previously noted in Chapter I, there are no comparison programs available within the school districts in which the ALL WIN-USA program was implemented. Thus, in order to make any kind of comparisons of cost effectiveness ratios, even crude ones, it was necessary to generate baseline data from other sources. Nothing was available currently from either the California State Department of Education, Office of Planning and Evaluation, or the Office of Evaluation of the U.S.O.E., that would be of assistance in this study. The study team conducted an extensive computer search of the literature on compensatory education using a number of descriptors designed to potentially provide information on the cost effectiveness of compensatory education programs. This procedure, which is described more fully in Appendix 2, yielded 681 references which were then systematically examined by the

TABLE IV-3

ALL WIN Cost Effectiveness Ratios: Reading
(by Grade Level)

Grade	C/E Ratios for Supplemental Costs	C/E Ratios for Total Costs
2	$\frac{\$160}{1.0} = 160$	$\frac{\$1,349}{1.0} = 1,349$
3	$\frac{160}{1.2} = 133$	$\frac{1,349}{1.2} = 1,124$
4	$\frac{160}{1.7} = 94$	$\frac{1,349}{1.7} = 794$
5	$\frac{160}{1.6} = 100$	$\frac{1,349}{1.6} = 843$
6	$\frac{160}{1.3} = 123$	$\frac{1,349}{1.3} = 1,038$

TABLE IV-4

ALL WIN Cost Effectiveness Ratios: Mathematics
(by Grade Level)

Grade	C/E Ratios for Supplemental $	C/E Ratios for Total $
2	$\frac{\$160}{.8} = 200$	$\frac{\$1,349}{.8} = 1,686$
3	$\frac{160}{1.1} = 145$	$\frac{1,349}{1.1} = 1,226$
4	$\frac{160}{1.0} = 160$	$\frac{1,349}{1.0} = 1,349$
5	$\frac{160}{1.5} = 107$	$\frac{1,349}{1.5} = 899$
6	$\frac{160}{1.3} = 123$	$\frac{1,349}{1.3} = 1,038$
7	$\frac{160}{2.1} = 76$	$\frac{1,349}{2.1} = 642$
8	$\frac{160}{2.9} = 55$	$\frac{1,349}{2.9} = 465$

evaluation staff in a lengthy period of library research. A large number of the more comprehensive studies in terms of the description of costs as well as outcomes of compensatory education programs were found in Georgia. Apparently, state laws there require the inclusion of certain fiscal data in the evaluation reports. However, the school accounting practices in Georgia vary substantially from those in California and those reports were found to be not appropriate for use for comparison purposes.

The studies found through the course of this extensive investigation to have the greatest potential relevance for use in comparison in this study, were two California Title I reports for fiscal 1972. One, the Annual Report for the Evaluation of ESEA Title I Projects of California Schools 1971-72, provided average gain scores by grade and average dollars per student spent on the program statewide. These data proved to be too highly aggregated to be of value for comparison purposes. But this report did prove to be of value in helping to establish the credibility and correctness of data in another report found through the literature search. We had been informed by the California State Department of Education officials that there were problems with respect to the uniformity of fiscal reports provided in 1971-72, and no attempt at systematic collection of fiscal data for cost effectiveness purposes has occurred in California compensatory education programs since that time. However, in a study performed by G. Kasten

Tallmadge of the American Institute for Research in the Behavioral Sciences, relatively "clean" cost and student achievement data are available for 1971-72.

First, Tallmadge considered compensatory programs as being in either of two categories: "saturated" (consisting of 75% or more of the student population eligible for Title I participation), or "unsaturated." For purposes of the ALL WIN comparison, it is more appropriate to use his data from saturated schools. For his analysis he utilized those schools within each category which had reported both achievement data and expenditures in their ESEA Title I report of 1971-72. Results were reported by grade level for both reading and mathematics. The average monthly gain for reading in the saturated programs was 1.04 and the similar gain for mathematics was 1.29. These mean results across grade levels are summarized in Table IV-5. The comparable data by grade level are summarized in Tables IV-6 and IV-7. In these tables, we note that the greatest gain in student achievement relative to total expenditure occurred in the 7th and 9th grades with high (for the most part) but generally unpredictable costs and cost effectiveness ratios in grades 10-12.

It would be inappropriate, however, to simply compare these cost effectiveness ratios (cost per month's growth) with the ALL WIN ratios of the same type since 1971-72 school costs were quite different from 1974-75 school costs. Thus, in order to compare (even in some kind of tentative

Table IV-5

Achievement, Expenditure Means and Cost Per Month's Growth
Across Grade Levels - California
1971-1972

	READING	MATH
1. Average Monthly Gain (Month's Growth)	1.04	1.29
2. Regular Cost per Pupil	$817	$817
3, Total Supplementary Cost	$104	$ 86
4. Cost per Month's Growth -Supplementary Cost	$100	$ 67 *
5. Total Cost per pupil	$ 921	$903
6. Cost per Month's Growth - Total Cost	$886	$700 **

* Row 4 equals Row 3 divided by Row 1

** Row 6 equals Row 5 divided by Row 1

Table IV-6

Achievement and Expenditure Means-- Reading Projects in California Saturated Schools 1971-72*

Grade	Average Mo. Gain	Regular & Per-pupil	Supplementary $	Cost per Month's Growth, Supplem.$	Total $	Cost per Month's Growth Total $
1	1.02	832	172	169	1004	$ 984
2	.96	814	99	103	913	951
3	.99	814	100	101	914	923
4	1.07	815	101	94	916	856
5	.99	814	97	98	911	920
6	1.07	814	95	89	909	850
7	1.71	873	153	89	1026	600
8	2.34	873	153	65	1026	438
9	3.46	890	150	43	1040	301
10	-.99	965	373	?	1338	?
11	1.00	965	373	373	1338	1338
12	1.50	965	373	249	1338	892

* Adapted from G. Kasten Tallmadge An Analysis of the Relationship Between Reading and Mathematics Achievement Gains and Per-pupil expenditures in California Title I Projects, Fiscal Year 1972. Final Report.

Table IV-7

Achievement and Expenditure Means-- Math Projects in California Saturated Schools,1971-72*

Grade	Average Mo. Gain	Regular $ Per Pupil	Supplem. $ Per Pupil	Cost per Month's Growth, Supplem.$	Total $ Per Pupil	Cost per Month's Growth, Total $
1	1.36	811	108	79	919	676
2	1.33	829	123	92	952	716
3	1.41	812	64	45	876	621
4	1.31	814	65	50	879	671
5	1.21	815	66	55	881	728
6	1.13	814	64	57	878	777
7	2.61	836	72	28	908	348
8	2.46	836	72	29	908	369
9	2.26	877	143	63	1020	451
10	-1.82	965	373	?	1338	?
11	.50	965	373	746	1338	2676
12	.33	965	373	1130	1338	4054

* Adapted from G. Kasten Tallmadge An Analysis of the Relationship Between Reading and Mathematics Achievement Gains and Per-pupil expenditures in California Title I Projects, Fiscal Year 1972. Final Report.

fashion) the ALL WIN cost effectiveness ratios with the 1971-72 comparison ratios, it is necessary that they be converted to similar dollar equivalencies. An examination of the Annual Report of Financial Transactions Concerning School Districts of California for the years 1971-72, 1972-73 and 1973-74 provides information on the average total current expenses of education per ADA in California for each of those years. These data are summarized in Table IV-8.

TABLE IV-8

Total Current Expenses of Education per ADA in California*

	Elementary Districts	Percent Increase	Unified Districts	Percent Increase
71-72	$792.10		$ 896.47	
72-73	866.61	9%	969.70	8%
73-74	985.48	14%	1,083.41	12%

Conversations with finance personnel in the administration section of the California State Department of Education reveal that comparable data are not yet available

*Data from Annual Report of Financial Transactions Concerning School Districts of California. 1971-72, 1972-73, 1973-74.

for the year 1974-75. Thus, it is necessary for us to estimate the appropriate increase in TCEE.

Since we do not have data readily available on the distribution of districts within the Tallmadge study that were elementary as opposed to unified districts, we have chosen to take a yearly rate of increase equal to the average of the percent increases for the two categories designated in Table IV-8. This would amount to an 8½% increase to 1972-73, a 13% increase over the previous year to 1973-74. We have arbitrarily selected, based upon historical experience as well as our own best judgment, a rate of increase of 11% to use in the conversion of the data to 1974-75 equivalencies. The application of these cost inflators provides 1974-75 cost effectiveness equivalent ratios for each grade level and in total for the Tallmadge data. These are shown in Table IV-9. With the effect of compounding of the percentage increases (13% of 8½%, etc.) the total percentage necessary to apply to 1971-72 data, in order to obtain comparable 1974-75 data, is approximately 36%.

Applying the cost inflators to the California Title I 1971-72 data, new ratios are determined which may be considered as adjusted to 1974-75 dollar equivalencies. These adjusted ratios are shown in Table IV-10.

In Tables IV-11 and IV-12, we have displayed the cost effectiveness ratios of the California Title I project (adjusted) from Table IV-10, and the ALL WIN cost effectiveness ratios (cost per month's growth) from Tables

Table IV- 9

COST INFLATORS FOR FISCAL DATA *

	Elementary School Districts	Unified Districts	*Average Percent Increase
1971-72 to 1972-73	9%	8%	8.5%
1972-73 to 1973-74	14%	12%	13 %
1973-74 to 1974-75	-	-	11 % **
3 Year Compounded Percent	-	-	36+ %

* For purposes of determining a basis for inflating costs, an average of Elementary School Districts and Unified District has been taken.

** Data are not available; this has been taken as a crude estimate.

Table IV-10

Cost-Effectiveness Ratios, California Title I, 1971-72 (Adjusted to 1974-75 Dollars)

	READING		MATH	
Grade	Supplemental $ per Month's Gain	Total $ Per Month's Gain	Supplemental $ per Month's Gain	Total $ Per Month's Gain
2	$140	$1294	$ 125	$974
3	137	1256	61	845
4	127	1165	68	913
5	133	1252	75	991
6	121	1157	78	1057
7			38	474
8			39	502

IV-6 and IV-7. An examination of Table IV-11 shows lower cost effectiveness ratios for ALL WIN relative to the comparison programs at all grade levels other than grade 2. At several grade levels, in particular grades 4 and 5, the difference in cost effectiveness ratios seems to be quite substantial. The higher cost effectiveness ratios in reading at grade 2 seems to be compatible with the phenomena that we have been hypothesizing throughout the course of this report; that is, it may well be that ALL WIN materials are less effective with younger children because of the complexity of their use. This "explanation" must be considered as merely speculation on the part of the researchers into possible causes of the disparity.

In Table IV-12, we have displayed the cost effectiveness ratios for the ALL WIN program and the comparison programs for the area of mathematics where the results were much more mixed. In no instance was the supplemental dollar cost effectiveness ratio for ALL WIN schools more advantageous than for the comparison programs. In part, this may be related to the generally lower level of expenditure for mathematics as opposed to reading in Title I. In part, the achievement gains on the State averages of the comparison programs are higher than for ALL WIN. When we turn to an examination of the total dollar cost effectiveness ratios for mathematics, the picture is somewhat more favorable. In this category, the comparison programs have more favorable cost effectiveness ratios in four instances, while the

Table IV-II

Cost Effectiveness Ratios: Reading

All Win Program and 1971-1972 California Title I Comparison (adjusted)

Grade	C/E Ratios for Supplemental $		C/E Ratios for Total $	
	All Win	Comparison	All Win	Comparison
2	$160	$140	$1349	$1294
3	133	137	1124	1256
4	99	127	794	1165
5	100	133	843	1252
6	123	121	1038	1157

Table IV - 12

Cost Effectiveness Ratios: Mathematics

All Win Program and 1971-1972 California Title I Comparison (Adjusted)

Grade	C/E Ratios for Supplemental $		C/E Ratios for Total $	
	All Win	Comparison	All Win	Comparison
2	$200	$125	$1686	$974
3	145	61	1226	845
4	160	68	1349	913
5	107	75	899	991
6	123	78	1038	1057
7	76	38	642	474
8	55	39	465	502

ALL WIN program has more favorable ratios in three instances. Again, the familiar pattern noted in the earlier description of reading persists. That is, the ALL WIN program does less well at the early grade levels (grades 2, 3, and 4) and does better at the middle grade levels (grades 5, 6, and 8). The pattern is broken at grade 7 where the ALL WIN cost effectiveness ratios are higher than the ratio for the comparison programs.

Summary

When compared to the average cost effectiveness ratios of California Title I reading programs, for 1971-72, adjusted to a 1974-75 level of cost effort, the ALL WIN program appears to have more favorable cost effectiveness ratios at grades studied other than Grade 2. The consistency of the finding of generally lower scores and generally higher cost effectiveness ratios at early primary grades may be related to the nature of the ALL WIN materials. The results at grades 3 through 6 would certainly seem to be an encouraging indicator of the potential cost effectiveness ratios of ALL WIN reading materials at these grade levels. Especially is this true when one considers that the ALL WIN program results were achieved during the first year of implementation of the program, ordinarily a time of considerable chaos.

The cost effectiveness ratios for mathematics bear out the tendency of ALL WIN students to do less well at the early grade levels and consequently all of the cost effective-

ness ratios tend to be higher. The performance of the ALL WIN mathematics program at the middle grades yields cost effectiveness ratios slightly more advantageous to the ALL WIN program. It would be worth examining the extent to which the settling of the program in subsequent years modifies the cost effectiveness ratio differences between ALL WIN and the comparison program.

Final Note

As we have indicated throughout this entire report, this cost effectiveness study must be considered as primarily an indicator of potential cost effectiveness. We have engaged in an exercise designed to consider the manner in which a cost effectiveness study might take place. To the extent to which the cost data initially collected are sound, effectiveness data are correct and the comparison districts are similar, the results of this study increase in significance. The methodology employed in this study has been sound. Hopefully, greater attention to refining procedures for cost data (as discussed in Chapter II) should increase the trust that can be placed in the findings of subsequent studies.

APPENDIX 1

EDUCATIONAL EVALUATION ASSOCIATES
9230 Jellico, Northridge, California 91324, (213) 993-8070

Dear

As you undoubtedly know, EEA has been conducting an evaluation of the ALL-WIN program for the Los Angeles County Schools. We have been asked to expand the study to include cost effectiveness considerations. Certain data is needed for the cost effectiveness study being sponsored by OEO and the Los Angeles County Schools. Would you be kind enough to provide the information requested on the enclosed questionnaire related to your District's overall costs and to ALL-WIN costs and operation. You may need the assistance of your district's business division in providing some of this information. All data required should be for the 1974-75 fiscal year.

If there are any questions about what is needed, please feel free to contact me at (213) 825-4800 or (213) 993-8070. I will be pleased to provide whatever clarification is necessary or to provide other assistance.

Please make every effort to return the questionnaire by July 28. Time is of the essence and we do appreciate your assistance.

Sincerely,

MCA/k
Enclosure

Marvin C. Alkin
Director

Questionnaire on All-Win Financial Data

1. Please provide information related to those District personnel (irrespective of funding sources) serving directly in the All-Win program. Please list all.

Category	Name of Person(s)	School Location	Salary	Per Cent of Time in Program *
A. Central Office Admin. Responsible for Program				
B. School Principal(s) Serving in Program				
C. Classroom Teachers Serving in Program				
D. Teacher Aides Serving in Program				

* Present best estimate possible

2. What was the district average expenditure per employee for Health and Welfare benefits.(Health Insurance, Tax Shelter Annuities, Life Insurance, etc.)?

Certificated Employees_____

Classified Employees _____

According to district policy do all classified employees receive a full Health and Welfare allocation?

Yes____ No____

If not, what part of the Health and Welfare allocation did the Teacher Aides (1D above) receive?

Name	Amount or Percentage
1.	
2.	
3.	
4.	

3. How much did the District spend directly in the All-Win program for supplies and materials?

_____

4. How much was spent in the Operations (custodial, grounds, utilities) portion of the District budget as determined by the program budget?

_____

5. How much was spent in the Maintenance portion of the District budget as determined by the program budget?

_____

6. Is the District securing classroom facilities under a lease or lease/purchase plan specifically for the All-Win program?

Yes___ No___

If yes, what is the annual payment(s)?

Per Classroom_____Total for All-Win Facilities_____

7. What was the District's total expenditures for all budget categories (1000, 2000, 3000, 4000, 5000 and 6000 excluding 7000)?

_____

8. How many full-time equivalent teachers served in the District during the 1974-75 school year? Include all regular, special education, special project, and Federally funded teachers in count.

_____

9. What is your daily rate for substitue teachers?

_____

DATA NEEDED FOR COST DETERMINATION

I. Direct Costs

Item	Determination	Data Collection
A. Central Administration - Person responsible at District level.	Percent of actual salary as estimated by respondent	Questionnaire
B. Site Administration -Person responsible at School level	Percent of actual salary as estimated by respondent	Questionnaire
C. Teacher serving in program	Actual salary of participant	Questionnaire
D. Aide(s) serving in program	Actual salary of participant(s)	Questionnaire
E. Health and Welfare benefits of all participants	Percent of actual fringe benefit	Questionnaire
F. Custodial and Operations	Actual expenditures for operations prorated according to number of work stations	Questionnaire
G. Maintenance	Actual expenditures for maintenance prorated according to number of work stations	Questionnaire
H. Supplies and Materials	Actual expenditures for All Win	
I. Retirement	Use percent of salaries determined in A-D above	Use State required percent

II. Indirect Costs

Items	Determination	Data Collection
All expenditures for the following categories:	Take total expenditures for 1975-75 and subtract the following:	Questionnaire
1000 Certified 2000 Classified 3000 Fringe benefits 4000 Supplies, Materials 5000 Contract Services 6000 Capital outlay	7000 Debts, transfers All costs determined in IA-I above All lease payments for All Win facilities Prorate according to work stations	

APPENDIX 2

LITERATURE SEARCH PROCEDURES AND ANNOTATED BIBLIOGRAPHY

The SDC On-line Bibliographic Search Service has been developed and operated by System Development Corporation. The educational data base for the literature search is ERIC (Educational Resources Information Center), developed and maintained by the U.S. Office of Education. Currently, there are eighteen ERIC clearinghouses located throughout the United States that now report to the National Institute of Education. They collect, screen and abstract the reports and periodical literature in education and education-related fields. SDC's ERIC data base covers all citations published monthly in Research in Education and Current Index to Journals in Education, and it is retrospective to 1966.

In order to conduct the most efficient and relevant search possible, the study team established certain search parameters. First, all citations referenced to the descriptors "compensatory education," "Title I," "ESEA Title I," "cost effectiveness," "student expenditures," and "program costs" were located. This produced an initial reference file of over 1,400 citations. The second phase of the search involved further refinement of this reference file, and was conducted by first specifying all descriptors associated with higher education. Next, any of the 1,400 citations referenced to higher education were deleted from

the file. This procedure ensured that the final citations would not only cover compensatory education, but would be restricted to compensatory education at grades K-12. The final citation file contained 681 references. Those references which appeared to be most relevant from the reading of the abstract were examined with relevant information summarized on the following form. These references have been presented to Dr. Harry Holmberg for his further examination.

ALL WIN COST EFFECTIVENESS STUDY

Data Form

Complementary Ed. program Yes_____ No_____

What grade level was the program ? _____

_____

What subject field? _____

What kind of outcome test was used? _____

Gains shown (describe fully) _____

_____

_____

_____

_____

Costs described Yes_____ No _____

How much? _____

What is included in costs? or how were they determined? _____

_____

_____

_____

_____

Source: