DOCUMENT RESUME

ED 040 513 24 EA 002 944

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TITLE	Selected Relationships Between Pupil, Staff, and Educational Faculty Characteristics Associated with P.L. 89-10 Title I Projects in Iowa. Final Report.
INSTITUTION	Iowa Univ., Iowa City. Iowa Educational Information Center.
SPONS AGENCY	Office of Education (DHEW), Washington, D.C. Bureau of Research.
BUREAU NO	BR-8-0468
PUB DATE	May 69
CONTRACT	OEC-0-8-080468-3534
NOTE	83p.
EDRS PRICE	EDRS Price MF-$0.50 HC-$4.25
DESCRIPTORS	Ability Grouping, Achievement, *Basic Skills, Cost Effectiveness, *Educational Objectives, Educational Research, *Elementary Education, Expenditure Per Student, Individualized Instruction, Language, Longitudinal Studies, *Program Evaluation, Reading, *Secondary Education, Study Skills, Vocabulary
IDENTIFIERS	Iowa Test of Basic Skills, Iowa Test of Educational Development

ABSTRACT

To determine comparative achievement of Title I pupils from 1966 through 1968, as measured by composite scores on the Iowa Testing Program, basic skills data were analyzed for 1,794 pupils on a two-grade span at the elementary level (grades 3-5 and 4-6) and educational development data were analyzed for 1,203 pupils on a two-grade span at the secondary level (grades 9-11 and 10-12). Composite scores for a control group comprised of a 3-year sample of 1,353 elementary and 3,726 secondary non-Title I pupils were also analyzed. Multiple regression analysis of the data--based on high, average, and low ability groupings of participants--failed to indicate the effectiveness of a gross achievement measure across grade level and time for Title I programs. However, the study distinguished achievement for test and control groups as related especially to per pupil cost and achievement of specific objectives by grade level. Cost analysis and computer storage layout data are appended. A related document is ED 013 853. (Diagrams of storage layout, pp74-78, may reproduce poorly because of marginal legibility). (JK)

FINAL REPORT

Project No. 80468
Grant No. OEC-0-8-080468-3534

SELECTED RELATIONSHIPS BETWEEN PUPIL, STAFF, AND EDUCATIONAL FACULTY CHARACTERISTICS ASSOCIATED WITH P. L. 89-10, TITLE I PROJECTS IN IOWA

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May, 1969

The research reported herein was performed pursuant to a contract with the Office of Education, U. S. Department of Health, Education and Welfare. Contractors undertaking such projects under Government sponsorship are encouraged to express freely their professional judgment in the conduct of the project. Points of view or opinions stated do not, therefore, necessarily represent official Office of Education position or policy.

U. S. DEPARTMENT OF
HEALTH, EDUCATION, AND WELFARE

Office of Education
Bureau of Research

Abstract

SELECTED RELATIONSHIPS BETWEEN PUPIL, STAFF, AND EDUCATIONAL FACULTY CHARACTERISTICS ASSOCIATED WITH P. L. 89-10, TITLE I PROJECTS IN IOWA

On April 1, 1969, the Iowa Educational Information Center entered into a contract with the Bureau of Elementary and Secondary Education of the U. S. Office of Education to examine achievement of Title I pupils as measured by composite score on the Iowa Testing Programs over a three-year period. The study focused on three-year data on two grade spans at the elementary level -- grades three, four, and five and grades four, five, and six -- and two grade spans at the secondary level -- grades nine, ten, and eleven and grades ten, eleven, and twelve. For comparison purposes, the composite scores on the Iowa Testing Programs for a three-year sample of non-Title I pupils were analyzed for the same time period. The study covered the years 1966 through 1968.

The results of the multiple regression analysis on the achievement data indicated that the composite achievement score does not hold much promise in evaluating the outcomes of diverse Title I programs. The regression equations were based on high, average, and low ability groupings of participants. The indication from the comparisons was that the effectiveness of a gross achievement measure across grade level and time was not apparent.

The study also showed the relationship between expenditure, objective, and achievement level for each grade level.

FINAL REPORT

SELECTED RELATIONSHIPS BETWEEN PUPIL, STAFF, AND EDUCATIONAL FACULTY CHARACTERISTICS ASSOCIATED WITH P. L. 89-10 TITLE I PROJECTS IN IOWA

Introduction

On April 1, 1968, the Iowa Educational Information Center entered into a contract with the Bureau of Elementary and Secondary Education of the U. S. Office of Education to examine achievement of Title I pupils as measured by composite score on the Iowa Testing Programs (ITP) over a three-year period. For comparison purposes, the composite scores on the ITP for a three-year sample of non-Title I pupils were also analyzed for the same time period. The study covered the years 1966 through 1968.

As originally proposed, the study was to be conducted in two phases. Phase I would focus on the establishment of differential achievement curves for pupils from five levels of potential. The levels were to be established by dividing the first year score distribution into five parts consistent with the standard deviations of the normal distribution curve from probability theory. Stage one was to be conducted to provide information on questions related to the effect of compensatory education on achievement, the possibility of relating time of program intervention to high achievement gain at a particular grade level, differences in compensatory activity as reflected in achievement gain, and factors

which contribute to successful programs.

Phase II of the study, as originally proposed, was contingent upon the findings of Phase I in that in-depth study of beneficial programs would be made through a sample of pupils from these successful programs. However, the thrust of the proposal was changed after preliminary examination of the data from Phase I at a working conference at the U. S. Office of Education on July 9, 1968. The conference was attended by Dr. H. Piccariello and Dr. J. Froomkin of the U. S. Office of Education, and Dr. W. Foley of the Iowa Educational Information Center.

Three major changes were made at the July conference. First, the proposal was to focus on three-year data for the elementary level on two grade spans. Grades three, four, and five constituted the first group while grades four, five and six were in the second grade span. The reasoning behind this decision was that the Iowa Tests of Basic Skills (ITBS) are administered in the elementary setting and comparable test data in the same school setting would be limited to elementary pupils in these grade spans. The junior high programs in the state do not consistently employ the Iowa Tests of Basic Skills and also, the setting of the compensatory experience generally changes with the entrance into junior high school. The project also limited its focus at the secondary level to the two grade spans of nine, ten and eleven - the first grade span - and ten, eleven and twelve - the second grade span. Secondary achievement

was measured by the Iowa Tests of Educational Development (ITED).

The second major change made at the conference was that of describing the pupil population on a series of tables which showed the Title I expenditure category down the left side with the project objective classification by grade level for a three-year period across the top. The resultant tables are included in this report. The reason for this change was that the project coordinator, Dr. Harry Piccariello, felt the level of expenditure was a significant variable for analysis. Cost analysis tables were sent under separate cover to Dr. Piccariello, along with computer tapes containing additional project data for his analysis. An additional copy of these tables are included as Appendix A of this report along with a sample tape format of the data tapes on file at the U. S. Office of Education, Bureau of Elementary and Secondary Education.

Third, the contractor agreed to furnish the U. S. Office of Education with computer tapes of specified data available on the Title I pupils for the three-year period. A copy of the tape format has been included as Appendix B of this report. The individual pupil identification had been deleted from these tapes before transmittal. The reason for the decision to provide the source data tapes was that the further analysis of project data could best be performed by the U. S. Office of Education staff. This decision was also based on the funding limitations of the proposal. The computer tapes have been furnished to the U. S. Office of Education under separate cover and were addressed to Dr. Piccariello.

The achievement analyses were possible because of the systematic statewide use of the Iowa Testing Programs and U. S. Office of Education support of the CardPac system of educational accounting. In Iowa pupils are not only tested with the same measuring instruments, but they are also tested at the same time of the year. Thus, there are two major advantages in achievement data gathered by the Iowa Educational Information Center. A brief description of the tests follows.

> Iowa Tests of Basic Skills - The Iowa Tests of Basic Skills represent a generalized achievement testing series concerned with intellectual skills and abilities. These measures do not provide for specific achievement and content studies but center on the measurement of the basic intellectual skills necessary for success at the particular grade level.

The authors of the tests list three major purposes for the battery. First, the tests are designed to enable teachers and school officials to become quickly acquainted with the educational accomplishment and abilities of the pupils. This is done in order that the educational program can be better adjusted to the individual needs of the pupils in a particular setting. The second major purpose is to supply information for effective pupil guidance. Third, the authors list the provision of objectives and dependable evaluation data as a function of the test.

The organization of content of the ITBS is reported under five major score categories. Vocabulary (V) consists of 114 items designed to measure the vocabulary of a pupil from grade three through grade nine. As with all subtests of the Iowa Tests of Basic Skills, the items overlap across grade level. Reading (R) comprehension consists of 178 items designed to measure the reading understanding of pupils.

Language (L) skills consist of 404 items divided into four subclassifications. L-1 (spelling) consists of 114 items while L-2 (capitalization) and L-3 (punctuation) make up 102 items in each subtest. The fourth subcategory of language skills, L-4 (usage), consists of 86 items. Again we find the

overlap of items across grade levels as a standard feature of the test.

Work-study skills (W), the fourth major area of the test, has three subparts. W-1 (mapreading) consists of 89 items; W-2 (reading graphs and tables) include 74 items; and W-3 (knowledge and use of reference material) consists of 141 items. The total content of the subtests under work-study skills contains 304 items.

The fifth major area, arithmetic skills (A), has two subparts. A-1 (concepts) contains 136 overlapping items while A-2 (arithmetic problem solving) contains 96, for a total of 232 items. The total test, grade three through nine, is made up of 1, 232 items and the total administration time for grades three through nine consists of four hours thirty-nine minutes. A complete description of the tests as developed under the Iowa Testing Programs can be found in the manual for administrators provided by the Houghton Mifflin Company of Boston, publishers of the test.

The Iowa Tests of Educational Development - The Iowa Tests of Educational Development (ITED) were developed with two major purposes in mind. First, the authors of the tests state that "...teachers and counselors should keep themselves more intimately and reliably acquainted with the educational developments of each high school pupil." Second, the tests provide the school administrator with a more dependable and objective basis for evaluating the total educational offering of the school.

With these two major purposes in mind, a battery of nine objective tests was developed. The idea was to provide a comprehensive and dependable description of educational development. The tests themselves cover grades nine through twelve.

In the State of Iowa the ITED is used as an extension of or a supplement to the existing Iowa Testing Program for the elementary level. The individual test and the battery, the number of items, and the time necessary for completing the subtests of the battery are:

	Title of Test	Items	Time
1.	Understanding of Basic Social Concepts	90	55
2.	Background in the Natural Sciences	90	60

	Title of Test	Items	Time
3.	Correctness and Appropriateness of Expression	99	60
4.	Ability to do Quantitative Thinking	53	65
5.	Ability to Interpret Reading Materials in the Social Studies	80	60
6.	Ability to Interpret Reading Materials in the Natural Sciences	80	60
7.	Ability to Interpret Literary Materials	80	55
8.	General Vocabulary	75	22
9.	Use of Sources of Information	60	27

It should be noted that the composite test score is not a simple averaging of the standard scores on the test. It is obtained by changing the standard scores of the individual subtests into a weighted standard score. The composite score developed in this way has exactly the same meaning in terms of relative development as a standard score on any of the subtests. A complete description of the strengths of the ITED can be found in the manual prepared and furnished by The University of Iowa.

Procedures

The body of this report will focus first on the steps necessary to produce the three-year files of Title I pupils with their achievement records and the production of the data files of the comparison groups of non-Title I pupils' achievement records. Non-Title I pupils are defined as pupils in regular school programs who did not benefit from Title I support for the three-year period. The first steps in the procedure follow:

1. Title I pupil identification and project information was gathered from individual project applications and matched with an existing master file of pupil information to create a new master file containing Title I identified pupils and all

other pupils in the statewide CardPac system. This file was labeled the Master Pupil File for 1965-66.

2. The Master Pupil File for the 1965-66 academic year from step one was matched on name with the 1966-67 CardPac system Master Pupil File. This matching process resulted in a two-year master file of Title I and non-Title I pupils who had recorded testing program data for the consecutive years.

3. The existing achievement records on the two-year file from step two were screened and separated into complete records of Title I and non-Title I pupils. This process resulted in the creation of two master files, i.e., Title I pupils and non-Title I pupils for the 1965-67 period.

4. In order to create a file of student test information for three consecutive years, the ITBS-ITED test scores for 1967-68 were to be added to the appropriate student records in already existing Title I and non-Title I two-year files (1965-67). Tape layouts for both the ITBS-ITED file and the two-year files are shown in Appendix C, as is a layout for the three-year file created. The process is outlined in detail below. While there was a field for pupil identification number on the ITBS-ITED file, this information was not collected for the 1967-68 school

year. In order to match the students, it was necessary (step 1) to sort each input file into district, grade and name sequence so that the matching could be done on those fields.

The second step was to match the sorted test file with the sorted non-Title I two-year file to create a non-Title I three-year file; then match the test file with the two-year Title I file to create a three-year Title I file.

On Attrition

The input files had the following counts:

1967-68 ITBS-ITED file (all pupils tested in Iowa)	165, 901
1965-67 Non-Title I elementary file	15, 642
1965-67 Title I elementary file	8, 374
1965-67 Non-Title I secondary file	13, 902
1965-67 Title I secondary file	4, 997

The output counts were:

1965-68 Non-Title I elementary file	4, 296
1965-68 Title I elementary file	3, 394
1965-68 Non-Title I secondary file	8, 722
1965-68 Title I secondary file	3, 325

This high rate of attrition was caused by several factors:

1. In matching on name (12 characters) it is assumed that the name is recorded precisely the same in both cases. This, however, is not assured, and the occasional use of nicknames, initials, middle names and incorrect characters all result in no match.
2. It is assumed that students have remained in the same district for three years and have progressed two grades from the

grades they were in the first year. This would eliminate students who have moved or who have been held back.

3. To have been matched, students must have been on the file for the first two years. These students would be in grades one to five the first year, the sixth grade having been dropped off in creating the two-year files.

Therefore, the valid grade sequences that would be generated would be 1-2-3 through 5-6-7. Note that the 1-2-3 and 2-3-4 grade sequences would not have test scores for the first two years and first year respectively, because administration of the ITBS begins in grade 3. These points were covered in the July conference at the U. S. Office of Education, and the resultant files were based upon the conclusions reached at that meeting.

Achievement Groups

The elementary files for pupils in Title I programs were reconstructed into the grades 3-4-5 and grades 4-5-6 sequences for regression analysis. The range, mean score and standard deviation were computed by year for all pupils in each sequence. Table I summarizes the results of the preliminary analysis.

Table I

Iowa Tests of Basic Skills Summary for Title I Achievement Groups for the 1965-68 Testing Period

			1966		1967		1968	
Grades	Number	Range	Mean	St. Dev.	Mean	St. Dev.	Mean	St. Dev.
Grades 3-4-5								
Low	144	1.4-2.0	1.89	0.11	2.76	0.39	3.41	0.52
Ave.	538	2.1-3.0	2.51	0.27	3.34	0.50	4.10	0.64
High	120	3.1-4.4	3.34	0.27	4.07	0.49	4.97	0.66
Grades 4-5-6								
Low	159	1.8-2.7	2.50	0.19	3.25	0.36	3.99	0.48
Ave.	666	2.8-3.9	3.27	0.33	4.09	0.52	4.92	0.65
High	167	4.0-6.3	4.33	0.37	4.95	0.56	5.92	0.73

An effort was made to divide the groups into three levels containing approximately sixteen (high), sixty-eight (average), and sixteen (low) percent of the pupils involved in the analysis. Thus, the number of pupils shown in Table I represent these percentage distributions. The range of scores for each achievement level are also shown for the two grade sequences. The grades 3-4-5 sequence will be discussed first.

Grades 3-4-5

The low group contained 144 cases and showed a score range of 1.4 to 2.0 grade equivalent scores on the ITBS. The mean score for the low group was 1.89 in third grade. Or, the group was slightly more than one year behind in grade placement at the start of the Title I programs. It should be noted that the scores listed as grade equivalents are based

upon Iowa rather than national testing program norms. Over the three-year testing period the low group showed a .87 mean gain between third and fourth grade and a .65 mean gain from fifth to sixth grade. While not accurate in a statistical sense, as grade equivalent units are not equal, the differences in gain indicate a trend toward less gain over time or a decrease in relative standing at grade level that repeats itself across other comparisons of achievement groups. This is perhaps best explained as a regression tendency over repeated testings.

The average group showed less tendency to decrease in relative standing than did the low group. They began at the third grade level with a mean score of 2.51 and ended at the fifth grade level with a mean score of 4.10 with the expectancy for normal achievement being grade level or 5.0 at fifth grade. The average group contained 538 cases.

The high group began their programs at or above grade level and showed a slight loss over the three-year period and finished with a mean grade equivalency of 4.97. As expected, the standard deviation for the groups became larger over time. The tendency for groups to accentuate differences in scoring was apparent from Table I. In general, the lower a pupil scored initially, the greater his tendency to fall further behind in score over time in a relative score sense.

Grades 4-5-6

On Table I the second sequence shown has the fourth, fifth and sixth grades included. Again, the grade sequence is divided into the ability groups of low, average and high. Beginning with the low group, the initial group mean score was 2.50 at the fourth grade level. The increase in mean score for the low group across grades showed a tendency to become smaller over time, as did the low group in the 3-4-5 grade sequence. The comments made in relation to the 4-5-6 grade sequence are consistent with those for the first sequence.

The most obvious generalizations from the table were related to the tendency for those pupils whose mean scores were originally high on the scale to gain more in terms of test score over the three years of involvement in the program. Also, the tendency was for the standard deviation of the mean to increase over time for all groups studied. Stated simply, the brighter the pupil initially, the more he tended to profit from the Title I experience - all other things being equal. The spread in standard deviation can be best explained as the attenuation of initial score error over time. With each subsequent testing, pupils redistributed themselves over a wider range of scores than those used in initial grouping.

The secondary pupil files for Title I participants were also sorted into two major groups for the three-year period. Each of the major groups

was again subdivided. The sequences were therefore ninth, tenth, and eleventh grade, and tenth, eleventh, and twelfth grade, with each sequence containing a high, average and low group of pupils based upon the composite score of the Iowa Tests of Educational Development. Table II summarizes this effort and shows the mean score, standard deviation and range for the groups within each sequence. The scores reported in the Table are standard scores. In the narrative, percentile equivalents are presented to illustrate the relationship between the two types of reporting procedures possible with these testing program scores.

Table II

Iowa Tests of Educational Development Summary for Title I Achievement Groups for the 1965-68 Testing Period

			1966		1967		1968	
Grades	Number	Range	Mean	St. Dev.	Mean	St. Dev.	Mean	St. Dev.
Grades 9-10-11								
Low	138	1-6	4.64	1.40	7.78	2.62	8.76	3.50
Ave.	406	7-11	8.83	1.34	10.49	2.74	12.06	3.07
High	120	12-27	13.48	2.13	14.01	3.08	15.93	3.69
Grades 10-11-12								
Low	122	1-7	5.54	1.67	7.70	2.41	8.75	3.33
Ave.	294	8-12	10.23	1.42	11.74	2.83	12.75	2.94
High	123	13-28	14.31	2.04	15.98	3.05	17.55	3.40

Grades 9-10-11

In the grades nine, ten, and eleven sequence, the Title I group contained 664 pupils. One hundred and thirty-eight of these were

classified into the low range. This "low" group will be discussed first. The group mean was expressed as a standard score of 4.64 on the initial testing. This would be equivalent to a percentile rank of twelve based upon national n orms for the ITED. The group at the tenth grade had a mean score of 7.78 standard score points which would place the group at the fifteenth percentile on the national norms. In other words, the low group showed improvement over time in terms of group mean score, but their relative position on a percentile basis remained relatively stable. They began by being classified as low scoring and continued to maintain the same low standing over time.

The pupils classified into the average group numbered 406 and began the study with a group mean of 8.83 when expressed in standard score form. At the ninth grade level this represented a percentile rank of thirty-two on national norms. In the second year, the computed group mean score was 10.49 or at the twenty-eighth percentile nationally. Again, based upon national norms, at grade eleven the group's mean score was 12.06, or at the thirtieth percentile nationally. As was previously n oted for the low scoring group, the average scoring group tended to maintain a stable position on a relative percentile scale over the three-year period.

The "high" group in the 9-10-11 sequence numbered 120 and began the three-year study period with a mean testing program score of 13.48 which placed them at approximately the sixty-fifth percentile on national

norms. The contrast between Iowa and national norms for the Iowa Tests of Educational Development is presented at this time with this group as the group mean score falls near the forty-sixth percentile on Iowa norms - a difference of about twenty percentile points. A pupil can be above average on national norms and below average on Iowa norms when the fiftieth percentile represents average performance. The tenth and eleventh grade mean scores for the high group were 14.01 and 15.93 respectively. Stated as national percentile approximates, the groups were at the fifty-first and fifty-third percentile respectively.

On the basis of Iowa norms as an expression of the mean score over the three-year period, the percentile approximations were forty-sixth, thirty-sixth, and thirty-fifth. The standard deviations increased consistently with what was noted earlier in regard to other data over the three-year period.

The apparent drop in rate of growth for the high group over the sequence could be attributed, for the most part, to the spread of scores at the start of the groupings. The low group had a range of six standard score points, the middle group's range was five points, and the high group's range was sixteen points - thus allowing for the possibility of a greater regression effect with the high group over repeated testing.

Grades 10-11-12

The second sequence of ITED scores covered the grade span from ten to twelve inclusive. Again, as shown in Table II, the Title I

participants were divided into low, average, and high groups. The range of scores for the three groups was very similar to the range reported for the ninth through eleventh grade sequence.

The low group contained one hundred and twenty-two pupils and had an initial mean score of 5.54 for the tenth grade testing period. This was much lower than the tenth grade mean score for the low group of the first sequence at the tenth grade testing period. Stated as a national norm, the low group was at about the eighth percent. At grades eleven and twelve, the group mean was 7.70 and 8.75 respectively. This pattern fell between the ninth and twelfth percents on the national norms. Again, these mean scores were lower on the Iowa norms, falling between the third and fourth percentiles.

The average group for the second sequence had a range of five standard score points and contained 294 pupils. This group began with a group mean of 10.23 which fell at approximately the twenty-sixth percentile when converted to national norms. On the eleventh grade testing of the average group, the mean score was 11.74 or at about the twenty-seventh percentile on national norms. At grade twelve the average group had a mean score of 12.75, which again fell in the same range of percentile score as reported for the group at grade eleven. The Iowa norms for the same two years showed a percentile rank close to fourteen.

The high group in the ten through twelve sequence contained 123

pupils and had a range of standard scores of sixteen points. The group began at about the fifty-third percentile nationally with a mean score of 14.31 and maintained the same relative percentile position at the grade eleven and grade twelve testings with mean scores of 15.98 and 17.55 respectively. In other words, the high group began at about the fiftieth percentile and maintained this position on national norms over the three-year period. In general, Title I pupils made gains over the three-year period which maintained their relative position on national norms. They made sufficient progress to keep their relative position.

The Regular Academic Program Sample

The sample of regular program pupils drawn from the Iowa Testing Programs population was also divided into an elementary and secondary sequence consistent with those already described for Title I pupils. There were 634 pupils in the grade three through five sequence and 829 pupils in the grade four through six sequence tested with the Iowa Tests of Basic Skills. The two sequences covered by the Iowa Tests of Educational Development also contained samples of regular program pupils and were consistent with the Title I data in that they covered the 9-10-11 grade sequence and the 10-11-12 grade sequence. The total secondary comparison group consisted of 3,726 pupils. The major reason for the three levels within each sequence was to examine the trend over time within as well as between levels of achievement.

Grades 3-4-5

The sample of pupils from the regular programs for grades three through five represent the first sequence discussed and were also divided into a low, average, and high category on the basis of initial test results on the ITBS composite score, consistent with the Title I grouping criteria. The two elementary sequences are shown on Table III.

Table III

The Regular Academic Program Score Sequences
Based Upon ITBS Distributions For
Grades 3-4-5 and Grades 4-5-6

Grades	Number	Range	1966 Mean	1966 St. Dev.	1967 Mean	1967 St. Dev.	1968 Mean	1968 St. Dev.
Grades 3-4-5								
Low	104	1.8-3.1	2.76	0.32	3.82	0.53	4.60	0.68
Ave.	416	3.2-4.8	4.01	0.45	5.01	0.64	5.94	0.80
High	104	4.9-6.1	5.16	0.26	6.22	0.47	7.27	0.54
Grades 4-5-6								
Low	47	1.8-3.5	3.14	0.30	4.20	0.54	4.95	0.70
Ave.	517	3.6-5.7	4.80	0.58	5.68	0.75	6.69	0.89
High	165	5.8-7.6	6.26	0.39	7.26	0.56	8.39	0.66

An examination of the mean scores over the three testing periods supports the generally held belief that bright pupils start ahead and achieve more over time; therefore, the difference between mean score for the group at the initial testing and final testing will be large. The differences between the high (5.16), average (4.01), and the low (2.76) group mean scores

were 1.15 and 1.25 grade equivalent points at initial testing. At the final testing, the differences were 1.33 and 1.34 mean score points. While this is a very gross inference made from the data, plotting the mean scores for the three groups over the three-year period would also show the trend for the differences between high scoring pupils and low scoring pupils to increase over time. The increase in standard deviation for every group across testing periods also supports the tentativeness which must accompany the projection of an individual's score position over time for predictive purposes.

Grades 4-5-6

The regular program pupils included in the grade four through six sequence on Table III showed the same tendencies noted for all other sequences. The low, average, and high groups were further apart at the end of the study period than they were at the start. The low group began with a mean score below the expected fourth grade achievement level (the actual mean score was 3.14) and ended below the expected grade level mean score of 6.0 (the actual mean score was 4.95). As expected, the high group began the study period above expectation with a mean score of 6.26 and ended the study period with a group mean score of 8.39 at the sixth grade level. The high group was above average in an absolute sense in that they began above grade level and maintained their relative advantage over time.

In terms of a plot of mean scores for this sequence, the contrast between the high and low groups across all grades and the slope of the resultant lines connecting the mean scores would again point out the tendency for brighter childlen (in terms of achievement scores) to increase their advantage over time. This tendency was there for both Title I and non-Title I pupils at the elementary level. This would be expected in light of the initial selection process.

Grades 9-10-11

The ITED scores for the non-Title I sequences were also divided on the basis of score distribution into low (174 cases), average (944 cases), and high (161 cases) groups. The group means, when considered in terms of percentiles based on national norms, showed the low, average, and high groups at the thirtieth, seventy-fifth and the ninety-eighth percentiles respectively. In 1968, when the same pupils were in the eleventh grade, their mean scores were at the twenty-eighth, seventy-fifth, and the ninety-eighth percentiles for the low, average, and high groups. (See Table IV)

Table IV

The Regular Academic Program Score Sequences
Based Upon ITED Distributions For
Grades 9-10-11 and 10-11-12

Grades	Number	Range	1966 Mean	1966 St. Dev.	1967 Mean	1967 St. Dev.	1968 Mean	1968 St. Dev.
Grades 9-10-11								
Low	174	1-10	8.05	2.18	10.45	3.04	11.78	3.53
Ave.	944	11-21	15.86	2.93	18.06	3.56	20.08	4.05
High	161	22-33	24.31	2.46	26.90	3.02	29.91	2.95
Grades 10-11-12								
Low	238	1-11	8.75	2.29	10.63	3.26	11.90	3.39
Ave.	1686	12-22	17.26	2.98	19.42	3.63	20.92	3.99
High	523	23-34	25.66	2.66	28.24	3.16	30.42	3.01

Grades 10-11-12

The 2,447 pupils included in grades ten through twelve of the non-Title I sample were also divided into three ability groups on the basis of their tenth grade performance on the ITED. The low group began in 1966 with a mean score of 8.75 in standard score points which was equivalent to a percentile rank of approximately nineteen on national norms. The group's relative position in the 1967 testing program was at the twenty-second percentile and, in the 1968 testing, the group was at the twenty-second percentile. In other words, the group retained its relative position on the achievement scale across time.

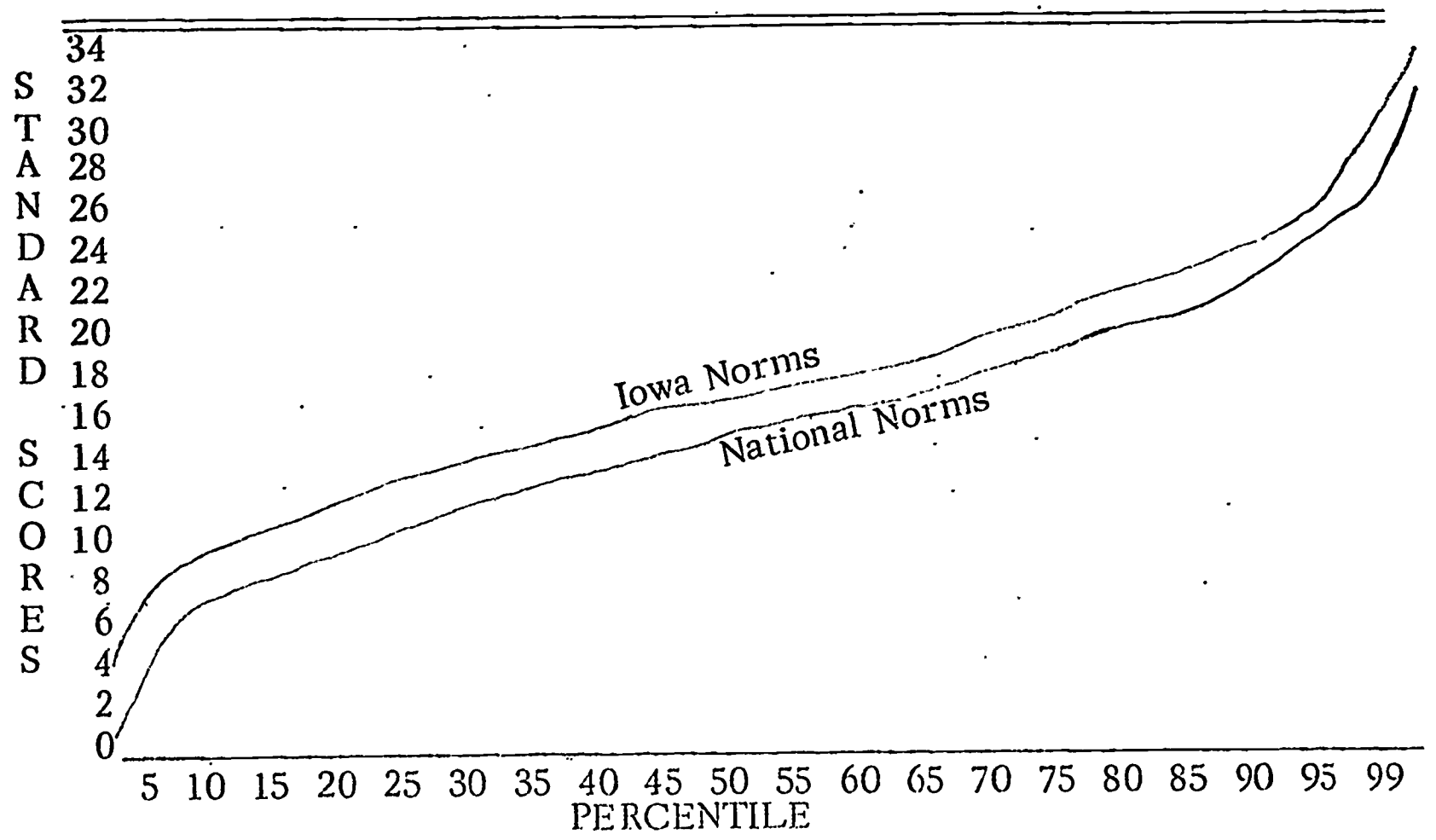
The average group, at the time of initial testing, was at the sixty-ninth percentile on national norms. In 1967, the group mean was

at the seventy-second percentile and the group finished at the seventieth percentile. Thus, the group showed a slight upward trend in scoring over the three-year period. The expected increase in standard deviation over time could also be noted on the table.

The high group began at the ninety-sixth percentile with a mean standard score of 25.66 and ended the three-year period slightly above the ninety-sixth percentile in 1968 - again retaining their relative advantage over time. It should be pointed out that the Iowa norms for the ITED are significantly higher than those for the nation. This relationship is shown in Table V which illustrates the discrepancy at the tenth grade level.

Table V

Relative Position of Standard Scores Expressed as Composite Scores to Percentile Scores for Iowa and National Norms at the Tenth Grade



Multiple Regression Analysis

As a result of the earlier work on a two-year comparison of scores for Title I pupils, the linear regression model was adopted for this study. Regression analyses were performed using the test scores on the Title I and non-Title I three-year files. In creating each file the following steps were followed:

1. A program was run to generate frequency distributions of the first year (of two or three - depending on the file) test score composites by grade.
2. These frequency distributions were used to determine the ranges of first-year test scores for three groups - high, average and low. Approximately sixteen percent of the highest and lowest scores were used to form the high and low achievement groups. Note that the actual percentage of the total scores selected for each group varied somewhat from the sixteen percent figure because of the way the scores were distributed. These figures then varied again as a result of some students having incomplete test information for the other years and thus being eliminated from the regression analyses.
3. The regression analyses were done for each achievement group in each valid grade sequence using a modification of

a program prepared by the University Computer Center, which has the following purpose (from the program description):

> "REGAN (the program name) performs multiple linear regression producing means, standard deviations, population standard deviations, and correlation coefficients according to an algorithm described in Communications of the ACM by Hafley and Lewis. The multiple R, standard error of estimate, F-ratio, degrees of freedom of regression Beta weights, regression coefficients, partial coefficients, and y-intercept are calculated from the coefficient matrix or a specific subset of it .... The basic regression equations described in Multivariate Procedures for the Behavioral Sciences, Cooley and Lohnes, 1962, have been modified to use pair-wise correlations."

The revisions made involved only checking the input for validity and then assigning each set of scores to the proper achievement group.

A Note on Valid Grade Sequences

The input files were for elementary (grades 1-6) or secondary (grades 7-12) students. The possible grade sequences on two-year files are 1-2, 2-3, 3-4, 4-5, 5-6, 7-8, 8-9, 9-10, 10-11, 11-12. For three-year files they are: 1-2-3, 2-3-4, 4-5-6, 5-6-7, 7-8-9, 8-9-10, 10-11-12. It was not possible to use all of these sequences, however.

1. The ITBS is first administered in the third grade. This makes the following grade sequences incomplete: 1-2, 2-3, 1-2-3, 2-3-4.

2. The ITBS is last administered usually in grade 8, and then the ITED is administered. The scores on these two sets of tests are not comparable, so the following sequences could not be used: 8-9, 7-8-9, 8-9-10.

3. As a further note, occasionally the ITED are administered only every other year. A student who is lacking one or more of the test scores is eliminated from further processing. This reduced the number of observations. The final N for each group has been presented in Tables I through IV.

Title I Pupils

The 1967-68 test score served as the predicted or Y variable in the equations. Table VI shows the summary of these twelve equations. As would be expected, the second year achievement composite score contributed more to the predictor than did the first year score. In fact, at the lower levels covered by the ITBS, knowledge of the first year score had very little effect on the prediction equation. The beta weights for the six levels on which computations were made at the elementary level did not exceed .09 as a multiplier. In contrast, the second year score beta weights varied around .50 for the six elementary levels. In no case were the weightings negative.

As a predictor, first year performance had little effect on third performance at the elementary level. In contrast, first year scores

on the ITED did contribute to the prediction of third year standing at the secondary level. The range of beta weights for the six groups was from .18 to .45 for grades nine through twelve. But, a word of caution is included in that the scoring pattern for Iowa pupils was higher than one would expect to find in typical Title I programs. Thus, the equations would not be expected to hold for extremely low score distributions.

Table VI

Multiple Regression Equations Covering a Three-year Testing Program for the Title I Pupils in Elementary and Secondary Sequence

ITBS	
Grades 3-4-5	
Low	$y = 0.01x_1 + 0.50x_2 + 2.00$
Average	$y = 0.02x_1 + 0.55x_2 + 2.18$
High	$y = 0.02x_1 + 0.51x_2 + 2.80$
Grades 4-5-6	
Low	$y = 0.04x_1 + 0.47x_2 + 2.37$
Average	$y = 0.09x_1 + 0.50x_2 + 2.58$
High	$y = 0.06x_1 + 0.52x_2 + 3.08$
ITED	
Grades 9-10-11	
Low	$y = 0.18x_1 + 0.70x_2 + 2.47$
Average	$y = 0.30x_1 + 0.67x_2 + 2.45$
High	$y = 0.20x_1 + 0.78x_2 + 2.21$
Grades 10-11-12	
Low	$y = 0.30x_1 + 0.65x_2 + 2.11$
Average	$y = 0.28x_1 + 0.64x_2 + 2.33$
High	$y = 0.45x_1 + 0.56x_2 + 2.13$

Non-Title I Pupils

A summary of the regression equations for non-Title I pupils is presented in Table VII.

Table VII

Multiple Regression Equations Covering a Three-year Testing Program for the Non-Title I Pupils in Elementary and Secondary Sequence

	ITBS
Grades 3-4-5	
Low	$y = 0.24x_1 + 0.51x_2 + 2.80$
Average	$y = 0.18x_1 + 0.41x_2 + 3.16$
High	$y = 0.11x_1 + 0.50x_2 + 3.66$
Grades 4-5-6	
Low	$y = 0.08x_1 + 0.43x_2 + 2.87$
Average	$y = 0.22x_1 + 0.47x_2 + 2.99$
High	$y = 0.20x_1 + 0.38x_2 + 4.33$
	ITED
Grades 9-10-11	
Low	$y = 0.27x_1 + 0.72x_2 + 2.09$
Average	$y = 0.35x_1 + 0.76x_2 + 0.74$
High	$y = 0.16x_1 + 0.72x_2 + 6.62$
Grades 10-11-12	
Low	$y = 0.19x_1 + 0.49x_2 + 5.08$
Average	$y = 0.48x_1 + 0.60x_2 + 0.92$
High	$y = 0.17x_1 + 0.66x_2 + 7.19$

At the elementary level the contribution of first year score to third year predicted score for the non-Title I groups was significant and ranged from .08 through .24. When this distribution of beta weight

is compared with the Title I group, the relative contributions become apparent. While the progression of Title I pupils across time showed negligible effect of initial score in final score, the non-Title I group did not show the same pattern. Stated positively, the relationship of initial score on final predicted performance for non-Title I pupils was higher than for Title I pupils. One possible interpretation of this effect would be the impact of the program on final performance rendered the initial score irrelevant for Title I pupils. This is a rather tenuous inference in that the relative gain in performance of Title I pupils was slight and therefore the first year performance added little to the final outcome. This appears to be the most plausable implication of the differences in first year beta weights.

The most striking difference between Title I and non-Title I pupil regression equations at the secondary level appeared in distribution of constants for the equations. While the Title I pupils ranged between 2.11 and 2.47 for all groups, the non-Title I groups ranged between 0.74 and 7.19 in value.

This difference in the distribution of constants can be best explained in terms of the relative need for a constant to stabilize the predictor relationship. For Title I pupils, the relative performance within groups was such that the equations within the non-Title I secondary groups were less stable in their interrelationship. Thus, the impact of a

constant on the equations showed considerable variance within the six equations.

PHASE II
Expenditures and Objectives

The second phase of this study examined the expenditures of Title I funds for the achievement of specific program objectives. The funding categories established were (1) under 75 dollars per pupil, (2) 76-175 dollars, (3) 176-275 dollars, and (4) over 275 dollars. Each grade level was examined for the three-year period of 1965-68 with the number of pupils, mean composite score and standard deviation computed for each expenditure level and total. The resultant crossbreaks contained fifteen cells for each grade level. The general design is shown below:

Objective _____
Grade _____

Expenditure	1965-66	1966-67	1967-68
Under 75			
N	_____		
M	_____		
S. D.	_____		
76-175			
N		_____	
M		_____	
S. D.		_____	
176-275			
N			
M			
S. D.			
Over 275			
N			_____
M			_____
S. D.			_____
TOTAL			
N	_____		
M	_____		
S. D.	_____		

Objective 11: To Improve Reading Skill

Grades 7 and 8 scores for the three-year period shown on Table VI indicate that the reading skill objective was not popular during the second and third year of Title I program operations, especially at the seventh grade level. Only nine pupils were included in 1966-67 and none were shown under this objective in 1967-68 at the seventh grade level. At the eighth grade level only twelve pupils were included under this objective in 1967-68. There was a slight relationship between mean composite score and the amount of money spent to improve pupil performance at either the seventh or eighth grade levels, the exception being that in both years the category of expenditure labeled "under 75 dollars" showed pupils with the highest mean composite scores. In all, 680 seventh grade pupils and 1, 286 eighth grade pupils were included in the Per Pupil Cost Analysis for "Objective 11: To Improve Reading Skill." (See Table VI)

Grades 9 and 10 contained 3, 803 pupils included under the reading skill objective and showed a rather consistent involvement of pupils over the three-year period covered. The largest number of ninth graders was included in 1965-66 with 777 participating, while at the tenth grade level 1966-67 had 769 pupils included as their highest participation year. The most common expenditure level was 76-175 dollars per pupil for both grade levels. Few pupils were included in either the "over 275 dollar" or the "under 75 dollar" levels.

Table VI

Average Composite Scores by Per-Pupil Cost
for Objective 11 -
To Improve Reading Skill

Grade	7			8		
Year	65-66	66-67	67-68	65-66	66-67	67-68
Category						
Under $75						
N	63	1	0	63	61	0
M	5.83	5.00	0.0	7.01	6.70	0.0
SD	0.81	0.00	0.0	1.02	0.87	0.0
$76-175						
N	378	8	0	334	378	11
M	5.54	5.45	0.0	6.27	6.40	6.24
SD	0.89	0.83	0.0	0.97	1.04	0.99
$176-275						
N	165	0	0	168	165	1
M	5.54	0	0.0	6.43	6.40	6.10
SD	0.79	0	0.0	1.02	0.97	0.0
Over $275						
N	65	0	0	40	65	0
M	5.52	0	0.0	6.21	6.33	0.0
SD	0.74	0	0.0	0.82	0.83	0.0
Total						
N	671	9	0	605	669	12
M	5.57	5.40	0.0	6.39	6.42	6.22
SD	0.85	0.79	0.0	1.00	0.99	0.95

Average Composite Scores by Per-Pupil Cost for Objective 11 (continued)

Grade	9			10		
Year	65-66	66-67	67-68	65-66	66-67	67-68
Category						
Under $75						
N	86	59	42	71	128	40
M	8.92	9.42	8.98	10.77	10.87	12.40
SD	2.95	2.95	3.38	3.16	3.66	3.28
$76-175						
N	405	294	296	363	396	291
M	8.26	8.62	8.55	9.90	10.15	10.31
SD	3.07	3.28	3.24	3.74	3.51	3.87
$176-275						
N	236	153	122	198	195	138
M	8.75	8.56	8.82	10.29	10.30	10.59
SD	3.24	2.99	3.11	3.46	3.43	3.34
Over $275						
N	50	41	55	49	50	37
M	8.32	8.24	8.31	8.84	10.10	9.81
SD	3.11	3.30	2.59	3.41	3.14	3.14
Total						
N	777	547	515	681	769	506
M	8.49	8.66	8.62	10.02	10.30	10.51
SD	3.13	3.18	3.16	3.60	3.50	3.68

Average Composite Scores by Per-Pupil Cost for Objective 11 (continued)

Grade	11			12		
Year	65-66	66-67	67-68	65-66	66-67	67-68
Category						
Under $75						
N	82	69	105	0	73	42
M	12.90	12.81	12.19	0	14.23	15.36
SD	3.85	3.35	3.92	0	4.31	3.13
$76-175						
N	305	309	357	1	229	302
M	11.19	11.61	11.41	8.00	13.16	13.17
SD	3.92	4.13	4.22	0.00	4.11	4.71
$176-275						
N	116	184	161	0	132	170
M	12.00	11.80	12.75	0	13.01	13.05
SD	4.06	3.85	3.99	0	4.41	4.23
Over $275						
N	16	47	44	0	6	37
M	10.56	10.62	11.61	0	10.00	12.78
SD	4.78	4.39	3.35	0	3.74	4.48
Total						
N	519	609	667	1	440	551
M	11.62	11.73	11.87	8.00	13.25	13.27
SD	4.02	4.02	4.11	0.00	4.27	4.49

The standard score composite for the ninth grade totals remained relatively constant over time with 1966-67 having the highest composite mean score. The tenth grade composite scores showed a constant increase over the three-year period which may be accounted for in part by a low group in the 1965-66 year under expenditure level "over 275 dollars" and a relatively high group in 1967-68 at the "under 75 dollars" expenditure level. In general, there was little change in group mean score within grade level over time.

Grades 11 and 12 were also well represented under "Objective 11: To Improve Reading Skill" with the notable exception of grade twelve in the 1965-66 academic year. Again the expenditure level of 76-175 dollars accounted for the largest number of pupils across both grade levels. A total of 1,795 eleventh graders and 992 twelfth graders received Title I assistance under the objective of improving reading skills.

In general, this objective tended to be the most popular across grade levels, and had a tendency to remain relatively constant in both typical level of expenditure and mean composite score within grade level over the three-year period. In summary, if one were to state the objective "to improve reading skills," he would also tend to spend between 76 and 175 dollars and maintain a relatively constant group involvement across composite score distribution for inclusion in the program.

Objective 14: To Improve General Achievement in School

The three-year period total N-counts shown on Table VII for grades seven and eight indicate that Objective 14 was less utilized in terms of pupil involvement than Objective 11. For example, only eight pupils were included in 1966-67 and none were listed under this objective in 1967-68 at the seventh grade level. In eighth grade only nine pupils were included under this objective in 1967-68. There was little relationship between mean composite score and the amount of money to improve general achievement in both the seventh and eighth grade levels. But, again, the expenditure "under $75" categorized pupils with the highest mean composite scores. Four hundred and eighty seventh grade pupils and 898 eighth grade pupils were included in the Per Pupil Cost Analysis for Objective 14: To Improve General Achievement in School.

Grades 9 and 10

Twelve hundred and eighty grade nine pupils and 1,299 grade ten pupils were included under Objective 14. The largest number of ninth graders was 531 in 1965-66, while the largest participant N-count for tenth graders was 515 in 1966-67. As in the previous objective, the most common expenditure level was $76-$175 per pupil for both grade levels. The "over $275" level contained the fewest participants.

Table VII

Average Composite Scores by Per-Pupil Cost
for Objective 14 -
To Improve General Achievement in School

Grade	7			8		
Year	65-66	66-67	67-68	65-66	66-67	67-68
Category						
Under $75						
N	99	1	0	109	97	0
M	5.82	5.00	0.0	6.84	6.57	0.0
SD	0.88	0.00	0.0	1.05	0.93	0.0
$76-175						
N	232	7	0	187	232	8
M	5.44	5.53	0.0	6.11	6.29	6.51
SD	0.89	0.86	0.0	0.90	1.04	1.02
$176-275						
N	88	0	0	98	89	1
M	5.60	0	0.0	6.32	6.45	6.10
SD	0.78	0	0.0	0.96	1.01	0.0
Over $275						
N	53	0	0	24	53	0
M	5.55	0	0.0	6.40	6.36	0.0
SD	0.76	0	0.0	0.94	0.84	0.0
Total						
N	472	8	0	418	471	9
M	5.56	5.46	0.0	6.37	6.39	6.47
SD	0.87	0.82	0.0	1.00	1.00	0.97

Average Composite Scored by Per-Pupil Cost for Objective 14 (continued)

Grade	9			10		
Year	65-66	66-67	67-68	65-66	66-67	67-68
Category						
Under $75						
N	126	103	42	99	123	38
M	9.14	9.35	8.98	9,93	10.84	12.68
SD	3.21	3.31	3.38	3.45	3.54	3.10
$76-175						
N	258	174	187	214	261	163
M	8.22	8.36	8.74	9.64	10.37	9.77
SD	3.08	3.08	3.37	3.32	3.44	3.57
$176-275						
N	102	85	89	130	86	88
M	8.96	8.45	9.19	10.67	10.45	10.68
SD	2.93	2.66	3.26	3.11	3.34	3.23
Over $275						
N	45	26	43	29	45	23
M	8.67	9.35	8.33	10.62	10.53	10.78
SD	2.97	3.36	2.78	2.88	3.00	3.48
Total						
N	531	388	361	472	515	312
M	8.62	8.71	8.83	10.05	10.51	10.46
SD	3.10	3.11	3.29	3.30	3.42	3.54

Average Composite Scores by Per-Pupil Cost for Objective 14 (continued)

Grade	11			12		
Year	65-66	66-67	67-68	65-66	66-67	67-68
Category						
Under $75						
N	100	97	50	0	88	39
M	12.42	11.66	13.38	0	13.74	15.36
SD	3.82	3.75	3.58	0	4.29	3.16
$76-175						
N	167	209	193	1	157	160
M	11.09	11.25	11.40	8.00	13.13	12.40
SD	3.65	3.57	4.05	0.00	4.03	4.08
$176-275						
N	72	109	90	0	61	122
M	12.08	12.56	13.02	0	13.64	13.62
SD	4.33	3.63	3.90	0	4.18	4.30
Over $275						
N	9	28	41	0	3	22
M	14.00	12.50	11.83	0	13.33	13.64
SD	2.87	4.19	3.36	0	1.25	3.74
Total						
N	348	443	374	1	309	343
M	11.75	11.74	12.10	8.00	13.40	13.25
SD	3.90	3.71	3.97	0.00	4.13	4.15

Grades 11 and 12

That portion of Table VII that categorizes pupil involvement at the eleventh and twelfth grade levels can be summarized by two trends. First, the majority of pupils were classified under the 76-175 dollar expenditure level. Second, twelfth graders were for all practical purposes not included under the objective during the first year of study. In all, 1,165 eleventh graders and 653 twelfth graders benefited under the objective over the three-year period.

Objective 18: More Individual Instruction and Attention

A total of 325 grade seven pupils and 615 eighth graders participated in Title I programs under Objective 18 (see Table VIII). In 1967-68 there were no grade seven participants listed and only six listed in grade eight. The "$76-175" category had the largest number of pupils included. This expenditure also classified the pupils with the highest mean composite scores.

Grades 9 and 10

The grade nine and grade ten N-count totals for the three-year period were similar to the previous two grades, with 854 for grade nine and 827 for grade ten. The year 1965-66 with 355 pupils was the highest participating year for grade nine; 320 grade ten pupils participated in 1966-67 to top that grade's totals. The "over $275" expenditure level was the least common level and the $76-175" level was the most common for both grades.

Grades 11 and 12

In grades eleven and twelve, the $76-175" expenditure level again accounted for the largest N-count for both grades. However, only one grade twelve pupil participated in 1965-66. A total of 734 eleventh grade pupils and only 402 in grade twelve received Title I assistance under Objective 18.

Under this objective, "More Individual Instruction and Attention," one would again generally involve the majority of pupils under the "$76-175" expenditure category.

Table VIII

Average Composite Scores by Per-Pupil Cost
for Objective 18
More Individual Instruction and Attention

Grade	7			8		
Year	65-66	66-67	67-68	65-66	66-67	67-68
Category						
Under $75						
N	2	0	0	2	2	0
M	5.95	0	0.0	5.00	6.50	0.0
SD	0.15	0	0.0	0.70	0.20	0.0
$76-175						
N	196	3	0	173	199	6
M	5.52	6.07	0.0	5.98	6.36	6.50
SD	0.83	0.93	0.0	0.90	0.97	1.11
$176-275						
N	90	0	0	81	90	0
M	5.62	0	0.0	6.75	6.54	0.0
SD	0.81	0	0.0	1.09	0.95	0.0
Over $275						
N	34	0	0	28	34	0
M	5.52	0	0.0	6.05	6.27	0.0
SD	0.71	0	0.0	0.68	0.76	0.0
Total						
N	322	3	0	284	325	6
M	5.55	6.07	0.0	6.20	6.40	6.50
SD	0.81	0.93	0.0	1.00	0.95	1.11

Average Composite Scores by Per-Pupil Cost for Objective 18 (continued)

Grade	9			10		
Year	65-66	66-67	67-68	65-66	66-67	67-68
Category						
Under $75						
N	6	3	2	1	5	2
M	4.00	5.33	9.00	10.00	8.00	7.00
SD	1.83	3.09	0.0	0.00	2.28	1.00
$76-175						
N	205	159	162	146	212	147
M	8.27	7.94	8.37	9.18	10.37	9.00
SD	3.10	3.19	3.16	3.22	3.55	3.53
$176-275						
N	132	61	60	98	88	67
M	9.52	9.69	9.25	10.76	11.03	10.96
SD	3.30	2.84	3.00	3.13	3.23	3.31
Over $275						
N	12	27	25	22	15	24
M	8.42	7.93	8.12	6.73	9.53	9.50
SD	3.80	3.41	1.99	2.65	3.12	2.78
Total						
N	355	250	249	267	320	240
M	8.67	8.34	8.56	9.56	10.48	9.58
SD	3.30	3.24	3.04	3.34	3.46	3.50

Average Composite Scores by Per-Pupil Cost for Objective 18 (continued)

Grade	11			12		
Year	65-66	66-67	67-68	65-66	66-67	67-68
Category						
Under $75						
N	4	0	4	0	2	1
M	11.00	0	9.25	0	13.50	14.00
SD	2.55	0	1.64	0	1.50	0.0
$76-175						
N	132	146	183	1	105	155
M	10.58	11.23	11.42	8.00	11.96	12.57
SD	3.36	3.89	4.40	0	3.88	4.33
$176-275						
N	46	67	108	0	31	85
M	11.85	11.42	13.69	0	11.94	13.67
SD	4.29	3.83	4.12	0	3.88	4.44
Over $275						
N	9	23	12	0	4	18
M	7.67	8.39	12.00	0	8.00	11.78
SD	3.68	3.02	2.89	0	2.92	4.76
Total						
N	191	236	307	1	142	259
M	10.75	11.00	12.21	8.00	11.87	12.88
SD	3.71	3.89	4.37	0.00	3.90	4.43

Objective 24: To Develop Expectations of Success Rather Than Failure in School

The total participation of pupils for the three-year period in grades seven and eight was 254 in grade seven, and 550 in grade eight. In 1967-68 there were no grade seven participants and only four grade eight pupils. One hundred and thirty-one grade seven and 290 grade eight pupils were included in the "$76-175" expenditure level, giving it the largest N-count of the four expenditure categories listed. Mean composite scores for participants under Objective 24 were generally higher than those shown for participants under Objectives 11, 14, and 18.

Grade 9 and 10

Following the general pattern set in the previous objectives. the "$76-175" expenditure level classified the largest number of participants with the "over $275" level containing the fewest - totaling nineteen in grade nine and eight in grade ten. There were 294 ninth graders participating in 1965-66 and 290 tenth graders in 1965-66 and again in 1966-67. For the three-year period, 746 ninth graders and 797 tenth graders were involved. The standard score composite for the ninth grade totals remained fairly constant through the three-year period with 1966-67 having the highest composite mean score of 9.05. The tenth grade composite score showed a constant increase from 10.14 in 1965-66 to 11.10 in 1967-68.

Table IX

Average Composite Scores by Per-Pupil Cost
for Objective 24
To Develop Expectations of Success Rather Than Failure in School

Grade	7			8		
Year	65-66	66-67	67-68	65-66	66-67	67-68
Category						
Under $75						
N	68	0	0	89	68	0
M	5.86	0	0.0	6.91	6.59	0.0
SD	0.85	0	0.0	1.11	0.92	0.0
$76-175						
N	129	2	0	155	131	4
M	5.58	5.65	0.0	6.33	6.48	6.60
SD	0.93	0.75	0.0	0.97	1.03	0.92
$176-275						
N	41	0	0	47	42	0
M	5.82	0	0.0	6.35	6.66	0.0
SD	0.70	0	0.0	1.02	0.90	0.0
Over $275						
N	14	0	0	0	14	0
M	5.24	0	0.0	0	5.95	0.0
SD	0.80	0	0.0	0	0.93	0.0
Total						
N	252	2	0	291	255	4
M	5.68	5.65	0.0	6.51	6.51	6.60
SD	0.88	0.75	0.0	1.06	0.99	0.92

Average Composite Scores by Per-Pupil Cost for Objective 24 (continued)

Grade	9			10		
Year	65-66	66-67	67-68	65-66	66-67	67-68
Category						
Under $75						
N	106	83	29	75	104	37
M	9.44	9.46	9.66	9.97	10.87	12.70
SD	3.35	3.51	3.31	3.69	3.67	3.14
$76-175						
N	153	137	106	155	150	141
M	8.51	9.12	8.80	9.99	10.49	10.65
SD	3.15	3.43	3.21	3.76	3.45	4.07
$176-275						
N	30	43	40	57	31	39
M	8.37	8.07	9.40	10.96	10.19	11.21
SD	2.61	2.42	2.42	3.66	3.17	2.88
Over $275						
N	5	0	14	3	5	0
M	5.20	0	7.86	6.67	6.20	0.0
SD	2.48	0	3.25	2.62	0.98	0.0
Total						
N	294	263	189	290	290	217
M	8.78	9.05	8.99	10.14	10.52	11.10
SD	3.23	3.34	3.11	3.75	3.53	3.81

Average Composite Scores by Per-Pupil Cost for Objective 24 (continued)

Grade	11			12		
Year	65-66	66-67	67-68	65-66	66-67	67-68
Category						
Under $75						
N	80	73	56	0	71	41
M	12.76	11.34	13.34	0	14.04	15.17
SD	3.93	3.98	3.43	0	4.46	3.22
$76-175						
N	145	130	144	1	130	129
M	11.10	11.15	11.79	8.00	12.56	13.12
SD	3.79	3.84	4.33	0.00	4.07	4.73
$176-275						
N	45	58	26	0	48	48
M	12.16	12.26	12.77	0	13.31	14.40
SD	3.98	4.95	2.72	0	4.05	4.83
Over $275						
N	1	2	3	0	1	3
M	3.00	9.00	8.67	0	4.00	11.67
SD	0.00	3.00	0.47	0	0.00	3.68
Total						
N	271	263	229	1	250	221
M	11.73	11.43	12.24	8.00	13.09	13.76
SD	3.97	4.17	4.02	0.00	4.26	4.58

Grades 11 and 12

Grades eleven and twelve were well represented under Objective 24, with the exception of just one grade twelve participant in 1965-66. The expenditure level of "$76-175" accounted for the largest number of pupils across both grade levels. A total of 763 eleventh graders and 472 twelfth graders received Title I assistance under the objective of developing expectations of success in school.

As in previous objectives, in stating this objective one would tend to spend between $76 and $175 and pick a relatively constant number of pupils for group involvement across composite score distribution under the program objective "To Develop Expectations of Success Rather Than Failure in School."

Summary

This summary's purpose is to recapitulate and highlight certain meaningful aspects and findings of the Title I Final Report.

The procedures which produced the three-year files of Title I pupils with their achievement records and the production of the data files of the comparison groups of non-Title I pupils' achievement records are shown. The valid grade sequences generated were 3-4-5, 4-5-6, 9-10-11, and 10-11-12.

The low group for grades 3-4-5 was slightly more than one year behind in grade placement at the start of the Title I programs. Over the three-year testing period, the low group showed a .87 mean gain between third and fourth grade and .65 mean gain from fifth to sixth grade. These scores were reported in grade equivalents for ease in understanding.

The average group of the 3-4-5 sequence showed less tendency to regress in relative standing over time than did the low group. The high group began its programs at or above grade level and showed a slight loss over the three-year period. Generally, for all groups, the lower a pupil scored initially, the greater his tendency to fall further behind in score over time in a relative score sense.

For grades 4-5-6 it seemed that the brighter the pupil initially, the more he tended to profit from the Title I experience. With subsequent

testing, pupils redistributed themselves over a wider range of scores than those used in the initial grouping. Or stated differently, the spread of scores for the average group was greater at the end of the three-year period.

The secondary pupil files for Title I participants were also sorted into two major groups for the three-year period. The low group for grades 9-10-11 showed improvement over time in terms of group mean score, but their relative position on a percentile basis remained fairly stable. The average group also tended to maintain a stable position over the three-year period. With the higher group it was demonstrated that a pupil can be above average on national norms and below average on Iowa norms when the fiftieth percentile represents average performance; thus indicating the influence on testing norms when referring to relative pupil progress.

The second sequence of the Iowa Tests of Educational Development scores covered the grade span from ten to twelve inclusive. Stated as a national norm, low group scores fell at about the eighth, ninth and twelfth percents, but between the third and fourth percentile on the Iowa norms. Average and high groups in general made sufficient progress to keep their relative position, but, overall showed little or no positive gain in score position on the norms.

The sample of regular program pupils was also divided into an elementary and secondary sequence so as to examine the trend over time

within levels as well as across levels of achievement for the three groups. In grades 4-5-6 the low, average, and high groups were further apart at the end of the study than at the start. The tendency for brighter pupils to increase their advantage over time was noted.

When the ITED scores for non-Title I pupils in grade sequence 9-10-11 were divided into low, average, and high groups, and considered in terms of percentiles based on national norms, the group means were at the twenty-eighth, seventy-fifth, and ninety-eighth percentiles respectively. When the study ended in 1968, the scores were at the thirtieth, seventy-fifth, and ninety-eighth percentiles.

The low group for grades 10-11-12 retained its relative position on the achievement scale across time. The average group showed a slight upward trend in scoring over the three-year period. The high group retained its relative advantage over time.

Regression analyses were performed using the test scores on the Title I and non-Title I three-year file. For the Title I pupils, first year performance, as a predictor, had little effect on third year performances at the elementary level. But, again, the scoring pattern for Iowa pupils was higher than might be expected in typical Title I programs.

For non-Title I pupils, the contribution of the first year score to third year predicted score was significant at the elementary level. For Title I pupils, the relative performance within groups was such that the equations within the non-Title I secondary groups were less

stable in their interrelationship. These multiple groups may also be thought of as rough indications of what might have resulted in a cross-validation of the regression equations, specifically, that they were relatively unstable as predictors.

Phase II of this study examined the expenditures of Title I funds for the achievement of specific program objectives. In general, the reading skill objective tended to be popular across grade levels, and had a tendency to remain relatively constant in both typical level of expenditure and mean composite score within grade level over the three-year period.

Such objectives as general achievement improvement, more individual instruction and attention, and expectations of success rather than failure displayed a similar pattern. That is, the $76-175" expenditure level classified the largest number of participants with the "over $275" level containing the fewest.

APPENDIX A

COST ANALYSIS BY TITLE I FUNDS PER-PUPIL COST

Grade 3

Per-Pupil Expenditure		Low Achievement 1965	Low Achievement 1966	Average Achievement 1965	Average Achievement 1966	High Achievement 1965	High Achievement 1966
Under $75	N	43	1	608	29	43	1
	MN	2.00	2.30	2.47	2.31	3.15	3.10
	SD	0.24	0.0	0.44	0.37	0.48	0.0
$75 - 149	N	6	15	59	239	6	15
	MN	2.07	1.99	2.56	2.63	3.27	3.43
	SD	0.20	0.32	0.46	0.66	0.16	0.72
$150 - 224	N	3	21	29	320	3	21
	MN	2.07	1.96	2.54	2.49	3.20	3.32
	SD	0.05	0.23	0.36	0.47	0.08	0.63
$225 - 299	N	1	6	11	79	1	6
	MN	1.80	1.90	2.34	2.56	3.00	3.37
	SD	0.0	0.31	0.31	0.51	0.0	0.34
$300 - 374	N	0	0	7	25	0	0
	MN	0.0	0.0	2.44	2.38	0.0	0.0
	SD	0.0	0.0	0.52	0.47	0.0	0.0
$375 - 449	N	0	0	3	0	0	0
	MN	0.0	0.0	2.27	0.0	0.0	0.0
	SD	0.0	0.0	0.46	0.0	0.0	0.0

(Grade 3 Cont'd)

Per Pupil Expenditure		Low Achievement 1965	Low Achievement 1966	Average Achievement 1965	Average Achievement 1966	High Achievement 1965	High Achievement 1966
$450 - 524	N	1	0	29	3	1	0
	MN	2.10	0.0	2.33	2.40	3.10	0.0
	SD	0.0	0.0	0.36	0.14	0.0	0.0
$525 - 599	N	0	0	0	0	0	0
	MN	0.0	0.0	0.0	0.0	0.0	0.0
	SD	0.0	0.0	0.0	0.0	0.0	0.0
Over $599	N	0	0	0	5	0	0
	MN	0.0	0.0	0.0	2.28	0.0	0.0
	SD	0.0	0.0	0.0	0.21	0.0	0.0
Total	N	54	43	746	700	54	43
	MN	2.01	1.97	2.47	2.53	3.16	3.36
	SD	0.23	0.28	0.44	0.55	0.43	0.63

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COST ANALYSIS BY TITLE I FUNDS PER-PUPIL COST

Grade 4

Per-Pupil Expenditure		Low Achievement 1965	Low Achievement 1966	Average Achievement 1965	Average Achievement 1966	High Achievement 1965	High Achievement 1966
Under $75	N	64	4	696	47	64	4
	MN	2.63	2.50	3.31	3.25	4.24	4.15
	SD	0.38	0.27	0.59	0.52	0.65	0.58
$75 - 149	N	6	25	87	396	6	25
	MN	2.45	2.58	3.09	3.21	4.23	4.09
	SD	0.20	0.42	0.50	0.60	0.48	0.46
$150 - 224	N	2	25	23	511	2	25
	MN	2.40	2.74	3.15	3.29	4.35	4.24
	SD	0.0	0.39	0.41	0.57	0.15	0.48
$225 - 299	N	0	7	10	119	0	7
	MN	0.0	2.69	3.06	3.27	0.0	4.56
	SD	0.0	0.27	0.40	0.63	0.0	0.97
$300 - 374	N	1	0	9	25	1	0
	MN	2.70	0.0	3.33	3.44	3.90	0.0
	SD	0.0	0.0	0.31	0.60	0.0	0.0
$375 - 449	N	0	0	6	0	0	0
	MN	0.0	0.0	3.62	0.0	0.0	0.0
	SD	0.0	0.0	0.74	0.0	0.0	0.0

(Grade 4 Cont'd)

Per-Pupil Expenditure		Low Achievement 1965	Low Achievement 1966	Average Achievement 1965	Average Achievement 1966	High Achievement 1965	High Achievement 1966
$450 - 524	N	2	0	33	7	2	0
	MN	2.55	0.0	2.96	3.46	3.60	0.0
	SD	0.25	0.0	0.39	0.39	0.40	0.0
$525 - 599	N	0	0	0	0	0	0
	MN	0.0	0.0	0.0	0.0	0.0	0.0
	SD	0.0	0.0	0.0	0.0	0.0	0.0
Over $599	N	0	0	0	3	0	0
	MN	0.0	0.0	0.0	3.47	0.0	0.0
	SD	0.0	0.0	0.0	0.19	0.0	0.0
Total	N	75	61	864	1108	75	61
	MN	2.61	2.65	3.27	3.26	4.22	4.21
	SD	0.37	0.40	0.58	0.59	0.63	0.58

COST ANALYSIS BY TITLE I FUNDS PER-PUPIL COST

Grade 5

Per-Pupil Expenditure		Low Achievement 1965	Low Achievement 1966	Average Achievement 1965	Average Achievement 1966	High Achievement 1965	High Achievement 1966
Under $75	N	44	8	633	71	44	8
	MN	3.21	3.11	4.06	4.11	4.74	4.79
	SD	0.32	0.44	0.62	0.60	0.53	0.44
$75 - 149	N	3	21	62	355	3	21
	MN	2.90	3.37	3.57	4.03	4.50	5.11
	SD	0.08	0.50	0.50	0.68	0.64	0.69
$150 - 224	N	2	40	24	535	2	40
	MN	3.65	3.19	4.08	3.96	5.65	5.02
	SD	0.05	0.35	0.55	0.65	0.05	0.75
$225 - 299	N	0	9	10	119	0	9
	MN	0.0	3.49	3.52	4.16	0.0	5.22
	SD	0.0	0.42	0.23	0.69	0.0	0.42
$300 - 374	N	2	3	11	44	2	3
	MN	3.30	3.00	3.97	4.13	4.55	4.67
	SD	0.30	0.16	0.53	0.50	0.05	0.12
$375 - 449	N	0	0	0	0	0	0
	MN	0.0	0.0	0.0	0.0	0.0	0.0
	SD	0.0	0.0	0.0	0.0	0.0	0.0

(Grade 5 Cont'd)

Per-Pupil Expenditure		Low Achievement 1965	Low Achievement 1966	Average Achievement 1965	Average Achievement 1966	High Achievement 1965	High Achievement 1966
$450 - 524	N	2	0	41	13	2	0
	MN	3.05	0.0	3.94	4.02	4.40	0.0
	SD	0.15	0.0	0.63	0.59	0.20	0.0
$525 - 599	N	0	0	0	0	0	0
	MN	0.0	0.0	0.0	0.0	0.0	0.0
	SD	0.0	0.0	0.0	0.0	0.0	0.0
Over $599	N	0	0	1	6	0	0
	MN	0.0	0.0	3.40	3.90	0.0	0.0
	SD	0.0	0.0	0.0	0 40	0.0	0.0
Total	N	53	81	782	1143	53	81
	MN	3.21	3.26	4.01	4.02	4.74	5.03
	SD	0.32	0.43	0.62	0.66	0.55	0.68

COST ANALYSIS BY TITLE I FUNDS PER-PUPIL COST

Grade 6

Per-Pupil Expenditure		Low Achievement 1965	Low Achievement 1966	Average Achievement 1965	Average Achievement 1966	High Achievement 1965	High Achievement 1966
Under $75	N	0	4	0	43	0	4
	MN	0.0	3.77	0.0	4.52	0.0	5.75
	SD	0.0	0.13	0.0	0.49	0.0	0.40
$75 - 149	N	0	26	0	392	0	26
	MN	0.0	3.92	0.0	4.90	0.0	6.16
	SD	0.0	0.53	0.0	0.79	0.0	0.79
$150 - 224	N	0	29	0	547	0	29
	MN	0.0	3.93	0.0	4.82	0.0	6.01
	SD	0.0	0.45	0.0	0.73	0.0	0.56
$225 - 299	N	0	9	0	130	0	9
	MN	0.0	3.98	0.0	4.91	0.0	6.01
	SD	0.0	0.39	0.0	0.89	0.0	0.81
$300 - 374	N	0	1	0	26	0	1
	MN	0.0	4.20	0.0	5.00	0.0	6.90
	SD	0.0	0.0	0.0	0.67	0.0	0.0
$375 - 449	N	0	0	0	0	0	0
	MN	0.0	0.0	0.0	0.0	0.0	0.0
	SD	0.0	0.0	0.0	0.0	0.0	0.0

(Grade 6 Cont'd)

Per-Pupil Expenditure		Low Achievement 1965	Low Achievement 1966	Average Achievement 1965	Average Achievement 1966	High Achievement 1965	High Achievement 1966
$450 - 524	N	0	2	0	14	0	2
	MN	0.0	3.80	0.0	4.87	0.0	5.35
	SD	0.0	0.10	0.0	0.40	0.0	0.05
$525 - 599	N	0	0	0	0	0	0
	MN	0.0	0.0	0.0	0.0	0.0	0.0
	SD	0.0	0.0	0.0	0.0	0.0	0.0
Over $599	N	0	0	0	6	0	0
	MN	0.0	0.0	0.0	5.08	0.0	0.0
	SD	0.0	0.0	0.0	0.42	0.0	0.0
Total	N	0	71	0	1158	0	71
	MN	0.0	3.92	0.0	4.85	0.0	6.05
	SD	0.0	0.45	0.0	0.76	0.0	0.69

COST ANALYSIS BY TITLE I FUNDS PER-PUPIL COST

Grade 7

Per-Pupil Expenditure		Low Achievement 1965	Low Achievement 1966	Average Achievement 1965	Average Achievement 1966	High Achievement 1965	High Achievement 1966
Under $75	N	37	1	273	15	37	1
	MN	4.44	4.10	5.52	5.91	6.57	6.80
	SD	0.49	0.0	0.70	1.01	0.55	0.0
$75 - 149	N	1	3	10	43	1	3
	MN	4.00	4.80	5.66	5.51	6.50	6.33
	SD	0.0	0.54	0.44	0.81	0.0	1.40
$150 - 224	N	3	6	18	100	3	6
	MN	4.07	4.20	5.46	5.48	6.63	6.58
	SD	0.21	0.44	0.59	0.81	0.17	0.56
$225 - 299	N	1	1	10	9	1	1
	MN	4.30	4.20	5.46	5.54	6.50	6.60
	SD	0.0	0.0	0.40	0.97	0.0	0.0
$300 - 374	N	0	3	0	16	0	3
	MN	0.0	4.10	0.0	5.51	0.0	6.53
	SD	0.0	0.08	0.0	0.74	0.0	0.83
$375 - 449	N	0	0	0	0	0	0
	MN	0.0	0.0	0.0	0.0	0.0	0.0
	SD	0.0	0.0	0.0	0.0	0.0	0.0

(Grade 7 Cont'd)

Per-Pupil Expenditure		Low Achievement 1965	Low Achievement 1966	Average Achievement 1965	Average Achievement 1966	High Achievement 1965	High Achievement 1966
$450 - 524	N	0	0	4	0	0	0
	MN	0.0	0.0	5.35	0.0	0.0	0.0
	SD	0.0	0.0	0.76	0.0	0.0	0.0
$525 - 599	N	0	0	0	0	0	0
	MN	0.0	0.0	0.0	0.0	0.0	0.0
	SD	0.0	0.0	0.0	0.0	0.0	0.0
Over $599	N	0	0	0	5	0	0
	MN	0.0	0.0	0.0	4.68	0.0	0.0
	SD	0.0	0.0	0.0	0.45	0.0	0.0
Total	N	42	14	315	188	42	14
	MN	4.40	4.30	5.52	5.51	6.57	6.54
	SD	0.48	0.46	0.68	0.84	0.52	0.85

COST ANALYSIS BY TITLE I FUNDS PER-PUPIL COST

Grade 8

Per-Pupil Expenditure		Low Achievement 1965	Low Achievement 1966	Average Achievement 1965	Average Achievement 1966	High Achievement 1965	High Achievement 1966
Under $75	N	25	11	244	58	25	11
	MN	5.24	5.21	6.34	6.68	8.17	8.02
	SD	0.56	0.49	0.90	0.64	1.20	0.52
$75 - 149	N	1	21	15	200	1	21
	MN	5.20	4.93	6.65	6.38	8.10	7.80
	SD	0.0	0.69	0.83	0.91	0.0	0.73
$150 - 224	N	2	26	10	182	2	26
	MN	5.20	4.94	7.22	6.24	9.05	7.48
	SD	0.70	0.45	0.68	0.84	0.15	0.57
$225 - 299	N	2	5	12	43	2	5
	MN	4.75	5.20	5.85	6.63	7.15	7.88
	SD	0.15	0.46	0.46	0.57	0.35	0.42
$300 - 374	N	0	3	0	25	0	3
	MN	0.0	4.97	0.0	6.40	0.0	7.67
	SD	0.0	0.17	0.0	0.75	0.0	0.33
$375 - 449	N	1	0	6	4	1	0
	MN	4.50	0.0	5.63	5.77	7.20	0.0
	SD	0.0	0.0	0.65	0.67	0.0	0.0

(Grade 8 Cont'd)

Per-Pupil Expenditure		Low Achievement 1965	Low Achievement 1966	Average Achievement 1965	Average Achievement 1966	High Achievement 1965	High Achievement 1966
$450 - 524	N	0	1	3	10	0	1
	MN	0.0	5.20	7.77	6.18	0.0	6.90
	SD	0.0	0.0	1.86	0.74	0.0	0.0
$525 - 599	N	0	0	0	0	0	0
	MN	0.0	0.0	0.0	0.0	0.0	0.0
	SD	0.0	0.0	0.0	0.0	0.0	0.0
Over $599	N	0	0	0	0	0	0
	MN	0.0	0.0	0.0	0.0	0.0	0.0
	SD	0.0	0.0	0.0	0.0	0.0	0.0
Total	N	31	67	290	522	31	67
	MN	5.18	5.01	6.37	6.38	8.13	7.70
	SD	0.56	0.55	0.93	0.84	1.15	0.63

COST ANALYSIS BY TITLE I FUNLS PER-PUPIL COST

Grade 9

Per-Pupil Expenditure		Low Achievement 1965	Low Achievement 1966	Average Achievement 1965	Average Achievement 1966	High Achievement 1965	High Achievement 1966
Under $75	N	39	15	297	75	39	15
	MN	4.46	4.53	8.78	9.24	12.67	14.53
	SD	2.02	1.41	2.62	1.80	2.46	2.68
$75 - 149	N	7	15	50	123	7	15
	MN	4.00	4.33	9.00	8.49	13.14	12.33
	SD	1.69	2.15	2.34	2.53	2.80	2.24
$150 - 224	N	5	13	47	140	5	13
	MN	4.60	4.31	8.26	8.63	12.20	13.08
	SD	1.36	1.77	2.57	2.79	2.71	2.62
$225 - 299	N	0	10	0	93	0	10
	MN	0.0	3.70	0.0	7.98	0.0	11.70
	SD	0.0	1.42	0.0	2.68	0.0	2.19
$300 - 374	N	0	3	0	32	0	3
	MN	0.0	4.00	0.0	9.03	0.0	13.00
	SD	0.0	1.63	0.0	2.34	0.0	1.41
$375 - 449	N	0	0	4	0	0	0
	MN	0.0	0.0	8.00	0.0	0.0	0.0
	SD	0.0	0.0	1.58	0.0	0.0	0.0

(Grade 9 Cont'd)

Per-Pupil Expenditure		Low Achievement 1965	Low Achievement 1966	Average Achievement 1965	Average Achievement 1966	High Achievement 1965	High Achievement 1966
$450 - 524	N	0	1	0	13	0	1
	MN	0.0	1.00	0.0	6.46	0.0	10.00
	SD	0.0	0.0	0.0	1.39	0.0	0.0
$525 - 599	N	0	0	0	0	0	0
	MN	0.0	0.0	0.0	0.0	0.0	0.0
	SD	0.0	0.0	0.0	0.0	0.0	0.0
Over $599	N	0	0	0	0	0	0
	MN	0.0	0.0	0.0	0.0	0.0	0.0
	SD	0.0	0.0	0.0	0.0	0.0	0.0
Total	N	51	57	398	476	51	57
	MN	4.41	4.19	8.74	8.53	12.69	12.96
	SD	1.93	1.79	2.58	2.56	2.55	2.63

COST ANALYSIS BY TITLE I FUNDS PER-PUPIL COST

Grade 10

Per-Pupil Expenditure		Low Achievement 1965	Low Achievement 1966	Average Achievement 1965	Average Achievement 1966	High Achievement 1965	High Achievement 1966
Under $75	N	27	24	231	130	27	24
	MN	5.07	4.96	10.47	10.90	13.67	16.08
	SD	2.57	1.59	3.36	2.12	3.02	3.72
$75 - 149	N	10	33	54	255	10	33
	MN	5.20	5.61	10.48	10.50	15.50	15.88
	SD	2.18	2.62	2.31	2.98	2.20	3.03
$150 - 224	N	6	13	35	151	6	13
	MN	5.50	6.08	11.51	10.17	16.83	15.15
	SD	2.43	1.64	2.51	3.00	2.41	2.25
$225 - 299	N	0	8	0	65	0	8
	MN	0.0	5.00	0.0	10.23	0.0	13.75
	SD	0.0	1.87	0.0	3.07	0.0	2.05
$300 - 374	N	0	4	2	35	0	4
	MN	0.0	6.00	6.00	9.60	0.0	16.00
	SD	0.0	1.22	0.0	2.26	0.0	1.87
$375 - 449	N	0	0	3	0	0	0
	MN	0.0	0.0	8.33	0.0	0.0	0.0
	SD	0.0	0.0	1.25	0.0	0.0	0.0

(Grade 10 Cont'd)

Per-Pupil Expenditure		Low Achievement 1965	Low Achievement 1966	Average Achievement 1965	Average Achievement 1966	High Achievement 1965	High Achievement 1966
$450 - 524	N	0	2	0	15	0	2
	MN	0.0	3.00	0.0	8.20	0.0	10.50
	SD	0.0	1.00	0.0	2.48	0.0	1.50
$525 - 599	N	0	0	0	0	0	0
	MN	0.0	0.0	0.0	0.0	0.0	0.0
	SD	0.0	0.0	0.0	0.0	0.0	0.0
Over $599	N	0	0	0	0	0	0
	MN	0.0	0.0	0.0	0.0	0.0	0.0
	SD	0.0	0.0	0.0	0.0	0.0	0.0
Total	N	43	84	325	651	43	84
	MN	5.16	5.39	10.54	10.37	14.53	15.50
	SD	2.47	2.14	3.14	2.83	3.01	3.17

COST ANALYSIS BY TITLE I FUNDS PER-PUPIL COST

Grade 11

Per-Pupil Expenditure		Low Achievement 1965	Low Achievement 1966	Average Achievement 1965	Average Achievement 1966	High Achievement 1965	High Achievement 1966
Under $75	N	20	12	176	82	20	12
	MN	5.85	6.42	11.72	11.56	17.15	16.58
	SD	2.52	1.89	3.46	3.12	3.28	2.06
$75 - 149	N	5	12	34	149	5	12
	MN	8.20	6.50	11.94	11.23	16.80	18.08
	SD	1.94	2.9	2.20	3.89	1.33	2.02
$150 - 224	N	3	19	21	155	3	19
	MN	3.67	6.37	12.62	11.76	16.33	16.79
	SD	2.05	2.34	3.03	3.51	0.47	3.20
$225 - 299	N	0	6	0	64	0	6
	MN	0.0	6.00	0.0	10.53	0.0	15.17
	SD	0.0	0.82	0.0	3.32	0.0	0.69
$300 - 374	N	0	2	3	17	0	2
	MN	0.0	2.50	4.67	11.88	0.0	19.00
	SD	0.0	0.50	2.05	3.08	0.0	1.00
$375 - 449	N	0	0	5	0	0	0
	MN	0.0	0.0	9.60	0.0	0.0	0.0
	SD	0.0	0.0	2.73	0.0	0.0	0.0

(Grade 11 Cont'd)

Per-Pupil Expenditure		Low Achievement 1965	Low Achievement 1966	Average Achievement 1965	Average Achievement 1966	High Achievement 1965	High Achievement 1966
$450 - 524	N	0	2	0	17	0	2
	MN	0.0	2.00	0.0	10.65	0.0	11.00
	SD	0.0	1.00	0.0	3.88	0.0	1.00
$525 - 599	N	0	0	0	0	0	0
	MN	0.0	0.0	0.0	0.0	0.0	0.0
	SD	0.0	0.0	0.0	0.0	0.0	0.0
Over $599	N	0	0	0	0	0	0
	MN	0.0	0.0	0.0	0.0	0.0	0.0
	SD	0.0	0.0	0.0	0.0	0.0	0.0
Total	N	28	53	239	484	28	53
	MN	6.04	6.06	11.70	11.37	17.00	16.72
	SD	2.67	2.47	3.37	3.57	2.84	2.80

COST ANALYSIS BY TITLE I FUNDS PER-PUPIL COST

Grade 12

Per-Pupil Expenditure		Low Achievement 1965	Low Achievement 1966	Average Achievement 1965	Average Achievement 1966	High Achievement 1965	High Achievement 1966
Under $75	N	0	10	0	68	0	10
	MN	0.0	6.70	0.0	13.81	0.0	20.30
	SD	0.0	1.55	0.0	2.96	0.0	2.79
$75 - 149	N	0	10	0	106	0	10
	MN	0.0	7.80	0.0	12.45	0.0	19.30
	SD	0.0	2.32	0.0	3.69	0.0	3.23
$150 - 224	N	0	13	0	140	0	13
	MN	0.0	7.08	0.0	13.13	0.0	18.08
	SD	0.0	2.81	0.0	3.99	0.0	1.27
$225 - 299	N	0	4	0	35	0	4
	MN	0.0	4.75	0.0	11.29	0.0	17.75
	SD	0.0	2.28	0.0	3.44	0.0	4.82
$300 - 374	N	0	0	0	1	0	0
	MN	0.0	0.0	0.0	4.00	0.0	0.0
	SD	0.0	0.0	0.0	0.0	0.0	0.0
$375 - 449	N	0	0	1	0	0	0
	MN	0.0	0.0	8.00	0.0	0.0	0.0
	SD	0.0	0.0	0.0	0.0	0.0	0.0

MACHINES CORPORATION

LAYOUT

1420 - 1440 - 1460

T-9

DATE 3/3/66

BF = 5

40 45 50 55 60 65 70 75 80 85 90 95

40 45 50 55 60 65 70 75 80 85 90 95

40 45 50 55 60 65 70 75 80 85 90 95

...ETE, 1-COMPLETE

ED, (1 = ITBS)

STD. SCORES = ΔXX

40 45 50 55 60 65 70 75 80 85 90 95

ITED STANDARD SCORES (UPPER) AND ITBS G.E.'S

SS-2	SS-3	SS-4	SS-5	SS-6	SS-7	SS 8	SS-[illegible]	SS 9					
R	L1	L2	L3	L4	LT	W1	W2	W3	WT	A1	A2	AT	C

ITED (UPPER) AND ITBS

FR-1	FR-2	FR-3	FR-4	FR-5	FR-6	FR-7	FR-8	C	FR-[illegible]
FR-[illegible]	FR-R	L1	L2	L3	L4	LT	W1	W2	W3

55

40 45 50 55 60 65 70 75 80 85 90 95

40 45 50 55 60 65 70 75 80 85 90 95

40 45 50 55 60 65 70 75 80 85 90 95

40 45 50 55 60 65 70 75 80 85 90 95

45 50 55 60 65 70 75 80 85 90 95

(1445)

65-67

APPLICATION [ ] TITLE I SAMPLE FILE

STORAGE

IBM 1240-1401-14

0-99.

R.L. = 456, ±
BF = 1

SYMBOLIC	
DATA	DIST. | BLDG. | YEAR GRADE | (hatched) | PUPIL I.D.
LOCATION	0 5 10 15 20 25 30 35
WORD MARK	

100

SYMBOLIC	
DATA	8 W1 | 6 W2 | 9 W3 | WT | A1 | A2 | AT | C | (1) | (2) | 3 | 4 | (5) | 6
LOCATION	0 5 10 15 20 25 30 35
WORD MARK	

200

SYMBOLIC	(hatched) | DIST | ?
DATA	(END OF 1964-65 RECORD)
LOCATION	0 5 10 15 20 25 30 35
WORD MARK	

300

SYMBOLIC	(hatched) | TEST INFORMATION (ITBS OR ITED)
DATA	(hatched) | INC | TEST FORM | V 1 | R 2 | L1 3 | L2 4 | L3 5 | L4 6 | LT 7 | W1 8 | W 9 | W 9
LOCATION	0 5 10 15 20 25 30 35
WORD MARK	

400

SYMBOLIC	ATTEN
DATA	4 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | ED | ENTERED A-CD | DAY | WITH A-CD
LOCATION	0 5 10 15 20 25 30 35
WORD MARK	

SYMBOLIC	
DATA	
LOCATION	0 5 10 15 20 25 30 35
WORD MARK	

SYMBOLIC	
DATA	
LOCATION	0 5 10 15 20 25 30 35
WORD MARK	

SYMBOLIC	
DATA	
LOCATION	0 5 10 15 20 25 30 35
WORD MARK	

SYMBOLIC	
DATA	
LOCATION	0 5 10 15 20 25 30 35
WORD MARK	

SYMBOLIC	
DATA	
LOCATION	0 5 10 15 20 25 30 35
WORD MARK	

GE LAYOUT

1410 - 1420 - 1440 - 1460

T.W. Asher

DATE 10-30-67

NAME	D.O.B. MO	DA	YR	SEX	GRADE			1 V	2 R	3 L1	4 L2	5 L3	6 L4
Deleted													

QUESTIONAIRE RESPONSES

7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37

PROB. 1	PROB. 2	PROB. 3	PROB. 4	PUPIL I.D. NO.	NAME	D.O.B. MO	DA	YR	SEX	GRADE	MARK POINT AVERAGE
✓											

CARD PAC INVENTORY RESPONSES

W3	UT	A1	A2	AT	C	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
9																												

NDANCE (MTH. DREW) D	DAY	1st SEM ABS	TDY	2nd SEM ABS	TDY	RECORD CODE TYPE	I S	I C	

NOTE:
FORMAT C WILL CONSIST OF THIS FORMAT COMBINED WITH FORMAT A BEGINNING IN 457

0 = ITED
1 = ITBS

APPENDIX B

IBM

INTERNATIONAL BUSIN

STORAG

IBM 1240 - 1401 - 1

APPLICATION *TITLE I PROJECT FILES 65-68*

0-99

SYMBOLIC	DIST.	BLD.	YEAR CODE		PUPIL ID
DATA					
LOCATION	0	5		10 15 20	25 30 35
WORD MARK					

100-199

SYMBOLIC	(ITBS OR ITED)													
DATA	8 / W1	C / W2	9 / W3	WT	A1	A2	AT	C	1	2	3	4	5	6
LOCATION	0	5		10	15		20		25		30			35
WORD MARK														

200-299

SYMBOLIC	ATTENDANCE								DIST	BLD
DATA	ENTERED A-CD	ENTERED DAY	WITHDRAWN A-CD	WITHDRAWN DAY	1ST SEM ABS	1ST SEM TDY	2ND SEM ABS	2ND SEM TDY		
LOCATION	0	5		10		15		20	25	30 35
WORD MARK										

300-399

SYMBOLIC		ITIC	TEST	FORM	TEST SCORES (ITBS OR										
DATA					1 / V	2 / R	3 / L1	4 / L2	5 / L3	6 / L4	7 / LT	8 / W1	C / W2	9 / W	
LOCATION	0	5			10		15		20	25		30		35	
WORD MARK															

400-499

SYMBOLIC	QUESTIONNAIRE RESPONSES															ATTEND		
DATA	4	25	26	27	28	29	30	31	32	33	34	35	36	37	EDCL	ENTERED A-CD	ENTERED DAY	WITD A-C
LOCATION	0			5			10		15		20			25		30		35
WORD MARK																		

500-599

SYMBOLIC	NAME			GRD				
DATA		BLANK	SEX		← BLANK →	ITIC	TEST	FORM
LOCATION	0 5	10 15			20 25 30			35
WORD MARK								

600-685

SYMBOLIC	
DATA	← BLANK
LOCATION	0 5 10 15 20 25 30 35
WORD MARK	

SYMBOLIC	
DATA	
LOCATION	0 5 10 15 20 25 30 35
WORD MARK	

SYMBOLIC	
DATA	
LOCATION	0 5 10 15 20 25 30 35
WORD MARK	

SYMBOLIC	
DATA	
LOCATION	0 5 10 15 20 25 30 35
WORD MARK	

MACHINES CORPORATION

Form X24-6438-5

Printed in U. S. A.

LAYOUT

1410 - 1420 - 1440 - 1460

DATE R. CLARK 3/20/67

1	2	3	4	5	6	7
V	R	L1	L2	L3	L4	LT

8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37

PUPIL ID	NAME	DATE OF BIRTH MO	DA	YR	SEX	GRD	MPA

WT	A1	A2	AT	C	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23

REMARKS	1ST SEM ABS	1ST SEM TDY	2ND SEM ABS	2ND SEM TDY	DIST	BLD	BLANK	PUPIL ID	NAME

2	3	4	5	6	7	8	C	9	WT	A1	A2	AT	C	BLANK
R	L1	L2	L3	L4	LT	W1	W2	W3						

APPENDIX C

IBM ... File ... OUT

INTERNATIONAL BUSI...

STORAGE

... - ITED

IBM 1240 - 1401 - 1410

APPLICATION 351, 352, 353, 354, 355, 356

BLEKE...

SYMBOLIC

DATA

LOCATION 0 5 10 15 20 25 30 35

WORD MARK

X

SYMBOLIC

DATA: DIST SCH 13 SCHOOL NAME

LOCATION 0 5 10 15 20 25 30 35

WORD MARK

SYMBOLIC

DATA

LOCATION 0 5 10 15 20 25 30 35

WORD MARK

SYMBOLIC

DATA

LOCATION 0 5 10 15 20 25 30 35

WORD MARK

STUDENT

133 CH.

SYMBOLIC: GRADE, INC IND, ITED, FLORA

DATA: DIST SCH 11 STUDENT NAME (DELETED)

LOCATION 0 5 10 15 20 25 30 35

WORD MARK

SYMBOLIC: P.R.'S ... CODED INFO. ... SEX

DATA: WT AI A2 AT C STUDENT ID ITED = 12 CH. (1-3-4-4) ITBS = FIRST 10 CH. (1-3-3-3)

LOCATION 0 5 10 15 20 25 30 35

WORD MARK

SYMBOLIC

DATA

LOCATION 0 5 10 15 20 25 30 35

WORD MARK

SYMBOLIC

DATA

LOCATION 0 5 10 15 20 25 30 35

WORD MARK

SYMBOLIC

DATA

LOCATION 0 5 10 15 20 25 30 35

WORD MARK

SYMBOLIC

DATA

LOCATION 0 5 10 15 20 25 30 35

WORD MARK

T-5

...INES CORPORATION

LAYOUT

. 1420 - 1440 - 1460

T

BF = 5

DATE 3/3/66

...ETE, 1=COMPLETE

ED. (1=ITBS)

STD. SCORES = AXX

SS-2	SS-3	SS-4	SS-5	SS-6	SS-7	SS 8	SS-C	SS 9					ITED (UPPER) AND ITBS									
													FK-1	FK-2	FK-3	FK-4	FK-5	FK-6	FK-7	FK-8	C	FK-9
R	L1	L2	L3	L4	LT	W1	W2	W3	WT	A1	A2	AT	C	CR-1	CR-2	L1	L2	L3	L4	LT	W1	W2	W3

55