

A COMPARATIVE STUDY OF THE
STANFORD ACHIEVEMENT TEST AND
THE STATE OF TENNESSEE BASIC
SKILLS TEST

HELEN LANELL ROBERTS WOODWARD

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TEST AND THE STATE OF TENNESSEE BASIC
SKILLS TEST

An Abstract
Presented to
the Graduate Council of
Austin Peay State University

In Partial Fulfillment
of the Requirements for the Degree
Education Specialist

by
Helen LaNell Roberts Woodward
June, 1983

ABSTRACT

Reading, Spelling, Mathematics, and Language scores from the Stanford Achievement Test (SAT) administered at grades 5.9 and 6.9 and from the State of Tennessee Basic Skills Tests (BST) administered at grades 8.4 and 8.5 were analyzed for 266 and 281 students respectively enrolled in each of two counties. Scores for each content area were positively and significantly related. Prediction of scores from one test to the other based on regression statistics were comparable to actual scores from expectancy tables. In both counties the students who scored at the mean on the SAT Language test were found to have less than a 25 percent chance of passing the Language section of the BST.

Prediction of BST and State of Tennessee Proficiency Test (STPT) scores may be useful in further evaluating the appropriateness of cut-off scores and the difficulty level of material included in proficiency tests. Prediction may also be valuable in determining need for remediation or instructional adjustment at the elementary level.

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To the Graduate Council:

I am submitting herewith a Field Study written by Helen LaNell Roberts Woodward entitled "A Comparative Study of the Stanford Achievement Test and the State of Tennessee Basic Skills Test." I recommend that it be accepted in partial fulfillment of the requirement for the degree of Education Specialist.

Garland E. Blair
Major Professor

We have read this field study
and recommend its acceptance:

Elizabeth V. Stokes
Second Committee Member

Donald B. Lambert
Third Committee Member

Accepted for the
Graduate Council:

William H. Ellis
Dean of the Graduate School

FIGURE	PAGE
12. County A Expectancy Table - SAT and BST	
Language	42
13. County B Expectancy Table - SAT and BST	
Reading.	43
14. County B Expectancy Table - SAT and BST	
Spelling	44
15. County B Expectancy Table - SAT and BST	
Mathematics.	45
16. County B Expectancy Table - SAT and BST	
Language	46

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TABLE OF CONTENTS

	PAGE
LIST OF TABLES	vii
LIST OF FIGURES.	viii
CHAPTER	
1. INTRODUCTION.	1
2. METHOD.	7
3. RESULTS	9
4. DISCUSSION.	12
REFERENCE NOTES.	20
REFERENCES	21

LIST OF TABLES

TABLE		PAGE
1.	Pearson Correlations, Means, and Standard Deviations for the SAT and BST Content Areas.	24
2.	Summary of Regressions Between the SAT and the BST Content Areas.	25
3.	SAT Scale Scores, Stanines, and Standard Deviations from the Mean Associated with 50 Percent Probability of Passing the BST. .	26
4.	Predicted BST Scores and Probability of Passing for SAT National Norms and Obtained Sample Means at Grade 5.9.	27
5.	Predicted BST Scores and Probability of Passing for SAT National Norms and Obtained Sample Means at Grade 6.9.	28
6.	SAT Scale Scores and Stanines Associated with Selected Predicted BST Scores for County A	29
7.	SAT Scale Scores and Stanines Associated with Selected Predicted BST Scores for County B	30

LIST OF FIGURES

FIGURE	PAGE
1. County A Scattergram - SAT and BST Reading.	31
2. County A Scattergram - SAT and BST Spelling	32
3. County A Scattergram - SAT and BST Mathematics.	33
4. County A Scattergram - SAT and BST Language	34
5. County B Scattergram - SAT and BST Reading.	35
6. County B Scattergram - SAT and BST Spelling	36
7. County B Scattergram - SAT and BST Mathematics.	37
8. County B Scattergram - SAT and BST Language	38
9. County A Expectancy Table - SAT and BST Reading.	39
10. County A Expectancy Table - SAT and BST Spelling	40
11. County A Expectancy Table - SAT and BST Mathematics.	41

Chapter 1

INTRODUCTION

By 1980, thirty-eight (38) states had laws or regulations requiring some form of minimum competence testing (Lerner, 1981; Mills, 1980). Although programs vary widely, the focus is on setting standards of minimum achievement in the basic skill areas of reading, writing, and arithmetic (Mills, 1980). Minimum competency testing may also be utilized as one factor in accountability studies related to teacher effectiveness and cost effectiveness of various factors.

In Tennessee, three diplomas are awarded. These are the High School Diploma, the Certificate of Attendance, and the Special Education Diploma. In order to be awarded the High School Diploma, a student who graduates at the end of the 1982-1983 school year must earn eighteen units of credit and pass the four areas of the State of Tennessee Proficiency Test (STPT). The proficiency test is administered at the end of the ninth grade with an opportunity to be retested once in the tenth and eleventh grades and twice in the twelfth. The four content areas assessed are Reading, Spelling, Mathematics, and Language. Retesting is not required over sections previously passed ("Tennessee," 1980).

At least two preliminary diagnostic tests are required: one in the eighth grade, the State of Tennessee Basic Skills Test (BST), and another in either the fourth, fifth, or sixth grade. Most school districts use nationally normed achievement tests for the elementary diagnosis and use them at more grade levels than required.

Despite the potential benefits of early diagnostic testing, administrative and building level personnel have reported little actual utilization of the results (Salmon-Cox, 1981; Sproull & Subrow, 1981). Other researchers (Fremer, 1978; Mills & Hambleton, 1980) have found two major reasons for lack of use or insufficient use of test results: the lack of familiarity with test interpretation and the length of time required to interpret test results.

In Tennessee, however, it appears possible, if not likely, that test results may become more important to both these personnel groups as a result of points included in Governor Lamar Alexander's Better Schools Plan. The governor's plan includes two proposals which relate to student performance on tests. The first is that eighth grade students should pass a test of basic skills before entering ninth grade. The second is an incentive pay scheme for teachers which would involve

teacher evaluation. Student achievement scores have been suggested as one facet of that evaluation.

Most school learning, particularly at the elementary level, is basic and sequential. Thus, it is not surprising that early performance or achievement has been shown to be predictive of later achievement (Block, 1971; Elford, 1977). To the degree that this is true, information gained from test results at the elementary level would likely be useful in determining needs for instructional modification or for indicating a need for student review or remediation ("American," 1978; Bunda, 1978; Elford, 1977).

Early identification of students who would likely have difficulty passing the eighth grade Basic Skills Test could have several beneficial results:

1. Instruction could be altered at the elementary level with a minimum of curricular change;
2. Sufficient time and opportunity for remediation would be available for the marginal students and underachievers who appear to experience the greatest difficulty with competency tests ("American," 1978);
3. Fewer students would require remedial classes at the secondary level;

4. Less of the budget would need to be allocated for retesting and remedial materials and instruction at the secondary level;
5. Teachers could be more certain of the appropriateness of their instruction; and,
6. Fewer students might have to contend with years of continuous failure and wasted time in school.

All of these factors impact on the desire of educators to establish a productive and efficient system of instruction and to satisfy the demand for accountability.

In a previous study, Woodward (Note 1) compared scores of 794 eighth graders from one county in Middle Tennessee on the California Achievement Test (CAT) and the Basic Skills Test. It was found that the probability of passing all the sections of the Basic Skills Test, other than Reading, was marginal at the mean CAT score of the group and even less at the national mean for eighth graders. Probabilities were based on the traditional 70 percent correct cut-off for passing the Basic Skills Test.

The content areas in order of ascending difficulty were found to be Reading, Spelling, Mathematics, and Language. Only approximately 48 percent of students

passed the Language section. The results of the study suggested that the difficulty presented by the Basic Skills Test was not related to an achievement lag but to the difficulty level of the test. Also, considerable difference was found in levels of difficulty among the four content areas included on the test.

This academic year, of the total number of seniors in the state taking parts of the STPT in November, the greatest number were taking the Language section. After the November administration, 12.2 percent or 6,562 students still needed to pass one or more sections of the STPT. Of this number all but 1,555 failed Language as at least one part ("Tennessee," 1983).

It is the specific purpose of this study to extract and analyze information from tests administered in two counties in Middle Tennessee in order to:

1. Determine whether difficulty in passing the BST extends beyond the one county involved in the previous study;
2. Determine whether the Stanford Achievement Test (SAT), as the CAT, is useful as a predictor of performance on the BST;
3. Determine whether prediction can be made at elementary grade levels; and,

4. Determine at what stanine score the average student, as assessed by the SAT, has at least a 50 percent chance of passing the BST.

Chapter 2

METHOD

Subjects

The data for the study were taken from Tennessee State Testing and Evaluation Center reports for 266 students enrolled in County A and for 281 students enrolled in County B. In order to maintain confidentiality, scores were coded only as a case number.

Instruments

Stanford Achievement Test. The SAT consists of a series of test batteries with two forms, A and B, at 6 levels designed to measure achievement of students from third to eighth grade. Norm-referenced information is reported. In addition to percentile ranks, stanines, and grade equivalents, scale scores are obtained. The latter are derived from an equal interval scale for each content area across all grades for use with all levels and thus have an advantage over other scales.

Internal consistency, assessed in terms of the Kuder-Richardson formula 20 (KR20), is reported as being from .84 to .95 at the end of fifth grade and from .86 to .95 at the end of sixth grade within each content area for Form A. Spearman-Brown split-half reliability

coefficients range from .84 to .96 at the end of fifth grade and from .87 to .96 at the end of sixth grade for Form A content areas. Validity is reported primarily in terms of content validity.

Basic Skills Test. The BST is a criterion-referenced instrument which yields percent correct scores in Reading, Spelling, Mathematics, and Language. No information is available on reliability and validity.

Procedure

For each subject in County A, SAT Form A scale scores and BST percent correct scores from fifth grade (4-1980) and eighth grade (12-1982) respectively were selected for Reading, Spelling, Mathematics, and Language. For the subjects in County B the same scores were selected from sixth grade (3-1979) and eighth grade (1-1981).

Data were entered manually into the Austin Peay State University VAX 11/780 computer from Digital Equipment Corporation. Each score from the SAT was compared with its counterpart from the BST using SPEED Version 1.0 programs MULTR, CROSSTAL, and SCAT (Blair, Note 2). SAT and BST scores were divided into ranges of 20 and 10 points respectively.

Chapter 3

RESULTS

Means and standard deviations for the SAT and BST are presented in Table 1 along with Pearson correlations between the appropriate sections. Mean scores on the SAT for both County A and County B fell within one standard error of measure of the means reported for the respective national norm groups. Scores on the BST were negatively skewed for both counties with skewness being greatest for the Reading and Spelling sections (see Figures 1 through 8). Sixth grade correlations were generally higher than those at fifth grade. Results of the regression analyses shown in Table 2 indicate that the relationships between analogous sections on the SAT and BST are significant, $p < .001$.

In evaluating the results of this study the minimum passing scores presently in effect for the STPT are used. Passing scores, previously set at 70 percent, are now 65 percent for Mathematics and 75 percent for Reading, Spelling, and Language. The percent of students scoring at 10 point intervals for all sections and both counties may be derived from Figures 9 through 16.

Reading

The percent of students passing this BST section was 85 for County A and 74 for County B. Passing the Reading section appeared to present little difficulty for most subjects. Scores on the SAT at which students would have a 50 percent chance of passing this section fell within the fourth and fifth stanines (see Table 3). The mean SAT scores for both counties were higher than the scores associated with a 50 percent chance of passing. For County A it was approximately .5 SD higher.

Spelling

For counties A and B the percent of subjects passing was 81 and 75 respectively. The county means on the SAT were again above the scores associated with a 50 percent chance of passing. These scores also fell within the fourth and fifth stanines.

Mathematics

The greatest difference between percent passing for the two counties was found for Mathematics. In County A 53 percent of the subjects passed whereas in County B 75 percent of the subjects passed. In both cases the county means on the SAT were higher than the scores associated with a 50 percent chance of passing.

The stanines at which the associated SAT scores fell were four and five.

Language

This section appeared to present the greatest difficulty to subjects in both counties. In both, only 41 percent of the subjects passed. The SAT scores associated with a 50 percent chance of passing fell within the sixth stanine. Both county means on the SAT were below the scores corresponding to a 50 percent chance of passing.

Chapter 4

DISCUSSION

The data indicate that the SAT as well as the CAT is useful as a predictor of future performance on the BST. The usefulness of these nationally normed achievement tests as predictors likely extends to the STPT as the BST is required at eighth grade for the specific purpose of determining which students need remediation before attempting the STPT. The data also suggest that such prediction can be made at the elementary level as early as the fifth grade.

The data for this study are consistent with that of the previous study in that the mean scores on the SAT for all three counties across content areas were at or above the norm group means. Reading and Spelling BST scores were negatively skewed across counties reflecting the fact that approximately 70 to 85 percent of subjects passed those sections. This estimate is based on the cut-off scores now in use. The range of subjects passing the Mathematics section was greatest: from 53 percent to 75 percent. This range reflects the difference between the two samples in the present study. The Language section was passed by approximately 41 to 48 percent of subjects across counties. The probability

of passing the Language section for SAT scores at the county and norm group means for this study was between 14 and 21 percent (see Tables 4 and 5).

Testing for significance of t values for analogous BST sections between the two counties was found not to be appropriate as the variance between the performance of the two counties was too great.

Predicted BST scores including those which might be considered in the future as minimal passing scores are presented in Tables 6 and 7 with associated SAT scale scores and stanines. Since average SAT scale scores increase for each year of school, stanines associated with BST scores may be more readily compared to determine cut-off points for remediation. Examination of data suggests that at the present BST minimum passing scores remediation might be considered for students scoring at or below the third stanine on the SAT Reading and Spelling sections, at or below the third and fourth stanines on the Mathematics section, and at or below the fifth stanine on the Language section. Had the BST passing score for Mathematics not been decreased from 70 percent to 65 percent, the number failing that section and thus the number suggested for remediation would have been greater.

This information is consistent with indications from the previous study that the major difficulty in passing the BST and thus the STPT lies with the tests rather than with an overall lag in student achievement. Although setting cut-off scores is always a subjective decision, several important factors should be considered. These factors appear not to have been considered thoroughly for the BST and STPT. First, the level of difficulty of each section should be related to the achievement of average students. Second, the level of difficulty across sections should be similar. The present BST Language cut-off is decidedly not an appropriate expectation for average students. This is likely the basis for the large proportion of high school seniors who failed this section in November of this year. Consistency among the sections would help circumvent the awkward situation of needing to re-establish cut-off scores to match the finances available for remediation and the tolerance of the public for diplomas withheld. The minimums already range from 65 percent to 75 percent. With Language appearing to be the most difficult section, the next adjustment might result in a range from 60 percent or lower to 75 percent.

Several widely varying cut-off scores on a single test are not likely to contribute to the

confidence of parents or educators regarding the use of proficiency measures. People are also less likely to consider valuable a criterion-referenced test with cut-offs below 70 or 80 percent. This is especially true in view of recent changes in the grading policies of many high schools. Whereas minimum passing scores in terms of percent correct for classwork was set at 60, it is now set at 70.

Difficulties are compounded when one considers the range in achievement of students at any one grade level. Only approximately half score at grade level on nationally normed tests. The range by twelfth grade likely extends from first grade to college level. Therefore, in order to set feasible cut-off scores on a proficiency measure, the decision-maker may have to opt for middle level elementary content. Although many members of the community might consider testing over material at this level a farce ("American," 1978; Kosecoff, et. al., 1976; Miller, 1978), it may not be unreasonable. The level of content is generally associated with the grade at which it is first introduced. Most of the basic skills are addressed in the elementary grades and are thereafter practiced or elaborated to levels of proficiency.

The Better Schools Plan includes the requirement

that students will pass a basic skills test in eighth grade before being promoted to ninth grade. The governor has stated that all students, unless they are severely handicapped, will pass the test. It has not been stated that that test will be the same as the one currently administered in grade eight. However, the stipulation that all students other than those who are severely handicapped will pass before being promoted will add yet another difficulty to setting the minimum passing scores. There are many conditions which are severely handicapping. Of those which are certifiable according to present state guidelines, some do not relate to school achievement, some relate to all areas of achievement, and some relate to certain areas but not to others. Furthermore, many children who are not certifiably handicapped have extreme difficulty in school. Some of the factors involved include borderline intellectual ability, deprived environments, and factors which impact on motivation such as parental attitudes and family stability.

In view of the subjectivity and difficulties inherent in setting cut-off scores, proficiency requirements may not be the best method for attempting to raise achievement levels. Used as devices for student and instructional diagnosis, proficiency tests might

serve a more beneficial function. Criterion-referenced instruments have been found to be effective for providing feedback and correction in the classroom. In turn, feedback and correction are cited as contributing to maximum achievement and minimum variability (Block, 1971). Such instruments may be developed by means of appropriate analysis of norm referenced tests (Ebel, 1971). Clark and Thompson (1976) state that teachers can evaluate individual items for content validity and levels of difficulty and can then set criterion levels. Item banks thus generated can later be used in the construction of classroom, building level, or county wide measures. The wide use of computers enhances the feasibility of this procedure.

Many nationally normed achievement tests such as the CAT and SAT now offer both a norm-referenced and a criterion-referenced component. Mills and Hambleton (1980) believe that a single test with both these components is preferable to two different tests in that consistency of format and approach are maintained and data on inter-relationships of scores are available. Included in the CAT and SAT manuals is information providing for interpretation of individual and group performance in terms of specific instructional objectives. The objectives are stated

for each item and for groups of items and item discrimination indices are reported.

Where teachers with appropriate training in test theory, test construction, and test analysis are not available, further instruction would be necessary. This training might be one requirement for those who wish to achieve Master Teacher status if and when that section of the Better Schools Plan is implemented. Persons who are already involved with system wide testing programs might contribute both to analysis of data and to training of teachers. Such training would likely be of benefit if only to insure that personnel have the knowledge to make more than minimal use of test results.

Differentiating among achievement levels at graduation would seem to be more appropriate if related to national norms as students in our society are highly mobile both before and after graduation. One method of ascertaining achievement level might be consideration of both nationally normed test results and teacher observations. Levels of achievement in basic areas might be designated on diplomas of students who have met the units of credit requirement.

Finally, absolute minimums of achievement are not realistic for the public school system. No guarantee

of achievement can be made in a system which compels students to attend and schools to accept all who enter. A more realistic goal might be to assist students to reach their potential. Presently, much evidence is available which suggests that this potential is not being reached (Lerner, 1981). For this reason, it seems especially important to begin analysis of available data at early grade levels in order to attend to weaknesses before motivation declines.

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TABLE 1
Pearson Correlations, Means, and Standard Deviations
for the SAT and BST Content Areas

County	Pearson <u>r</u>	<u>M</u>	<u>SAT</u>	<u>M</u>	<u>BST</u>	<u>SD</u>
			<u>SD</u>		<u>SD</u>	
County A						
Reading	.679	164.74	19.57	85.40		13.65
Spelling	.613	170.05	19.86	83.60		13.97
Mathematics	.727	164.24	15.11	66.80		17.24
Language	.627	169.40	24.52	68.07		14.27
County B						
Reading	.750	173.65	23.90	80.63		19.47
Spelling	.698	175.02	21.45	79.91		19.93
Mathematics	.709	173.86	20.60	75.23		20.01
Language	.743	180.85	31.42	66.41		21.37

TABLE 2
Summary of Regressions Between the SAT
and the BST Content Areas

County	R^2	F^a	p
County A			
Reading	.462	226.345	< .001
Spelling	.376	159.315	< .001
Mathematics	.529	296.040	< .001
Language	.394	171.372	< .001
County B			
Reading	.562	358.025	< .001
Spelling	.487	264.870	< .001
Mathematics	.502	281.663	< .001
Language	.552	343.131	< .001

^aCounty A (1,264). County B (1,279).

TABLE 3

SAT Scale Scores, Stanines, and Standard Deviations from the Mean Associated
with 50 Percent Probability of Passing the BST

Variable	Scale Score	<u>County A</u>		Scale Score	<u>County B</u>	
		Stanine	<u>SD</u>		Stanine	<u>SD</u>
Reading	155	4	-.52	168	5	-.22
Spelling	163	4	-.38	171	5	-.17
Mathematics	163	5	-.08	166	4	-.36
Language	177	6	.30	190	6	.30

TABLE 4

Predicted BST Scores and Probability of Passing for SAT National Norms
and Obtained Sample Means at Grade 5.9

Variable	<u>x</u>	<u>National Norms</u>		<u>x</u>	<u>County A</u>	
		Predicted BST	Probability of Passing		Predicted BST	Probability of Passing
Reading	162	84	89	165	85	92
Spelling	165	81	77	170	84	84
Mathematics	165	67	62	164	67	59
Language	165	66	16	169	68	21

TABLE 5

Predicted BST Scores and Probability of Passing for SAT National Norms
and Obtained Sample Means at Grade 6.9

Variable	<u>x</u>	National Norms		<u>x</u>	County B	
		Predicted BST	Probability of Passing		Predicted BST	Probability of Passing
Reading	170	78	66	174	81	75
Spelling	176	81	71	175	80	69
Mathematics	173	75	83	174	75	85
Language	177	64	14	181	66	18

TABLE 6
SAT Scale Scores and Stanines Associated with
Selected Predicted BST Scores for County A

BST	<u>CAT</u>			
	Reading	Spelling	Mathematics	Language
100	179-7	184-7	185-8	204-8
90	169-6	176-6	179-7	193-8
80	160-5	167-5	173-6	182-6
75	155-4	163-5	169-6	177-6
70	150-4	158-4	166-5	171-5
65	145-3	154-4	163-5	166-5
60	140-3	149-3	160-4	161-5
55	135-3	145-3	157-4	155-5
50	130-2	141-3	154-4	150-4

TABLE 7

SAT Scale Scores and Stanines Associated with
Selected Predicted BST Scores for County B

BST	<u>SAT</u>			
	Reading	Spelling	Mathematics	Language
100	191-7	190-7	192-7	218-8
90	182-6	183-6	185-6	207-7
80	173-5	175-5	177-5	196-7
75	168-5	171-5	174-5	190-6
70	164-5	167-4	170-5	185-6
65	159-4	164-4	166-4	179-5
60	155-4	160-4	163-4	174-5
55	150-3	156-3	159-3	168-4
50	145-3	153-3	155-3	163-4

FIGURE 1
COUNTY A SCATTERGRAM
SAT AND BST READING

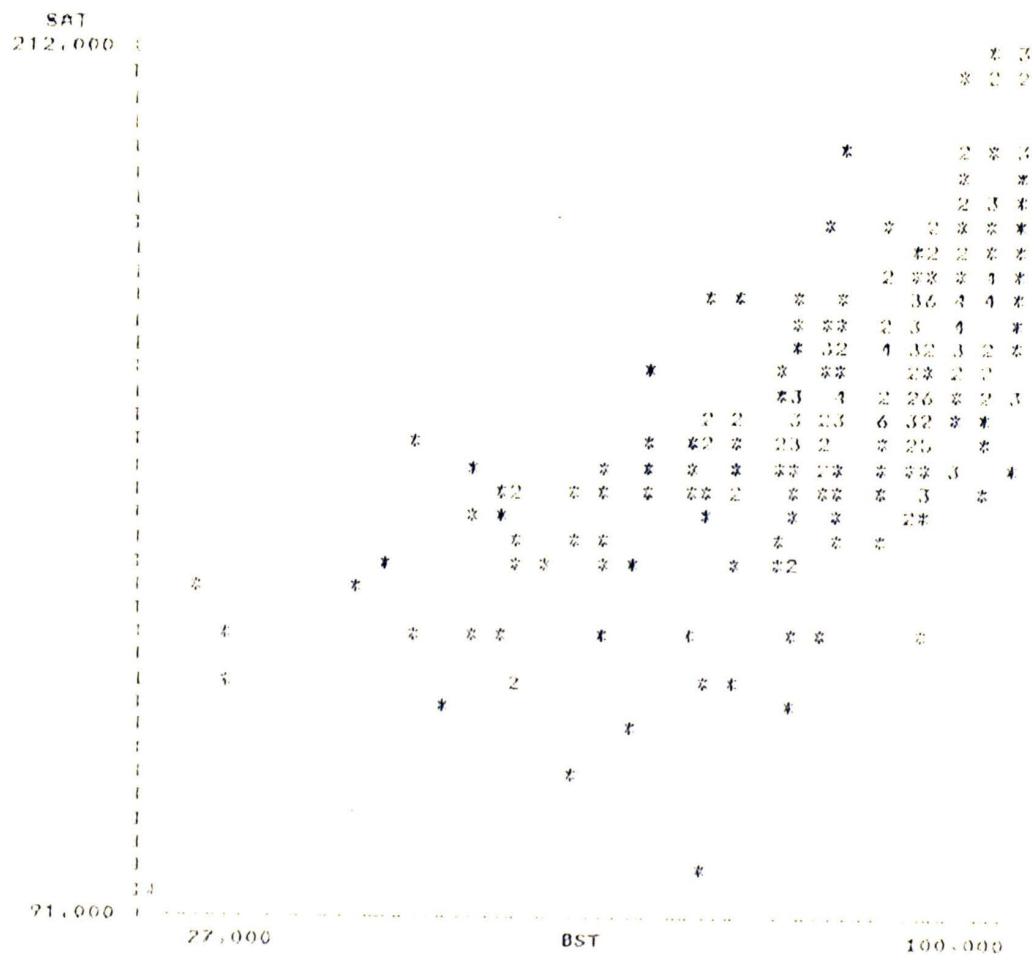


FIGURE 2
COUNTY A SCATTERGRAM
SAT AND RST SPELLING

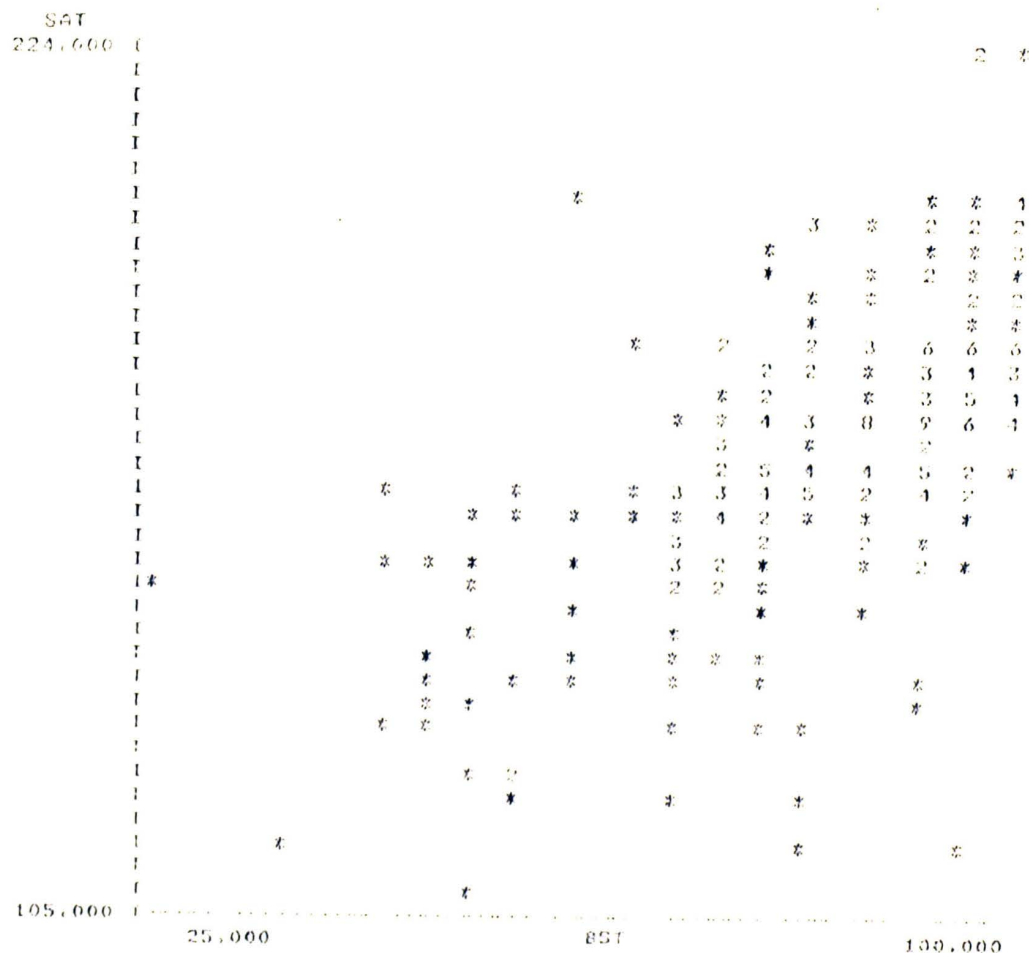
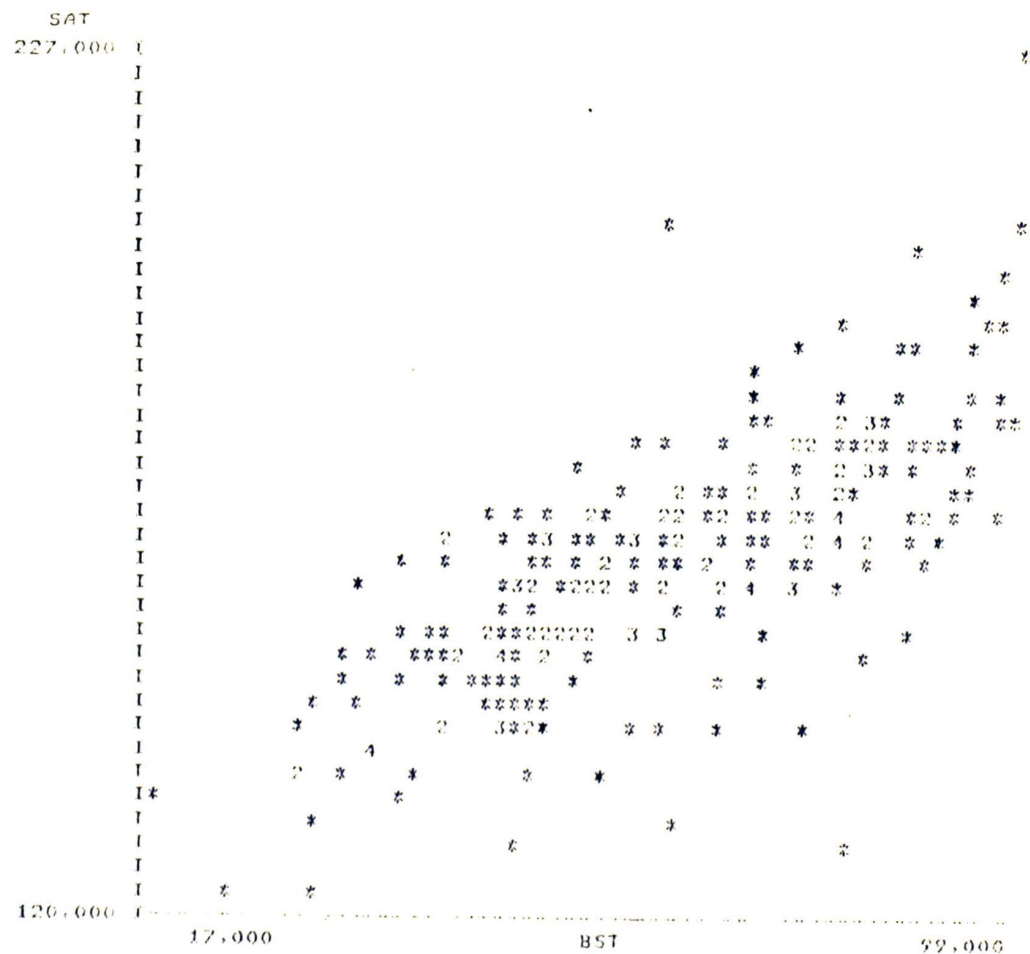


FIGURE 3
COUNTY A SCATTERGRAM
SAT AND BST MATHEMATICS



Scatter plot showing SAT scores (Y-axis, 23,000 to 237,000) versus BSI scores (X-axis, 0 to 100,000) for the 1990-1991 academic year. The plot displays a dense cluster of data points, primarily concentrated in the upper right quadrant, indicating higher SAT and BSI scores. The data points are labeled with numbers (1-6) and letters (A-F), likely representing different institutions or groups. The distribution shows a positive correlation between SAT and BSI scores, with a significant concentration of points at higher SAT values (above 235,000) and BSI values (above 50,000).

FIGURE 5
COUNTY B SCATTERGRAM
SAT AND BST READING

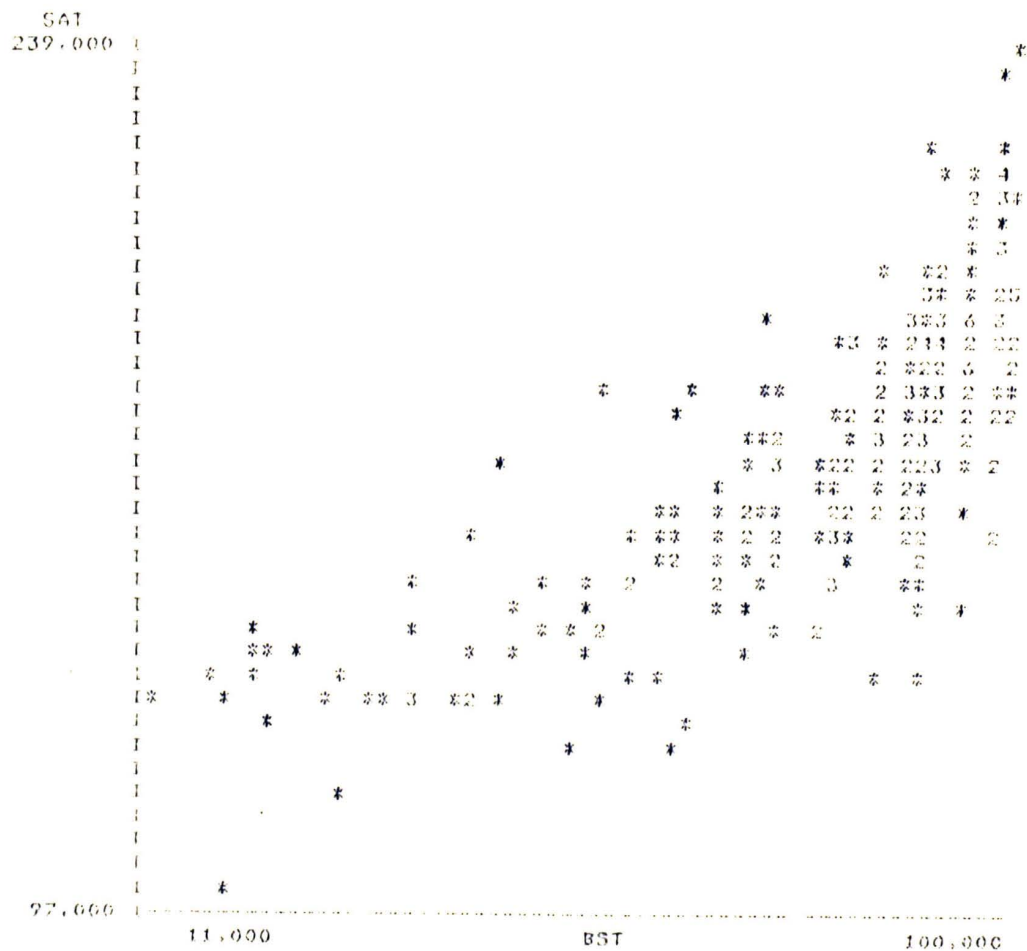


FIGURE 6
COUNTY B SCATTERGRAM
SAT AND BST SPELLING

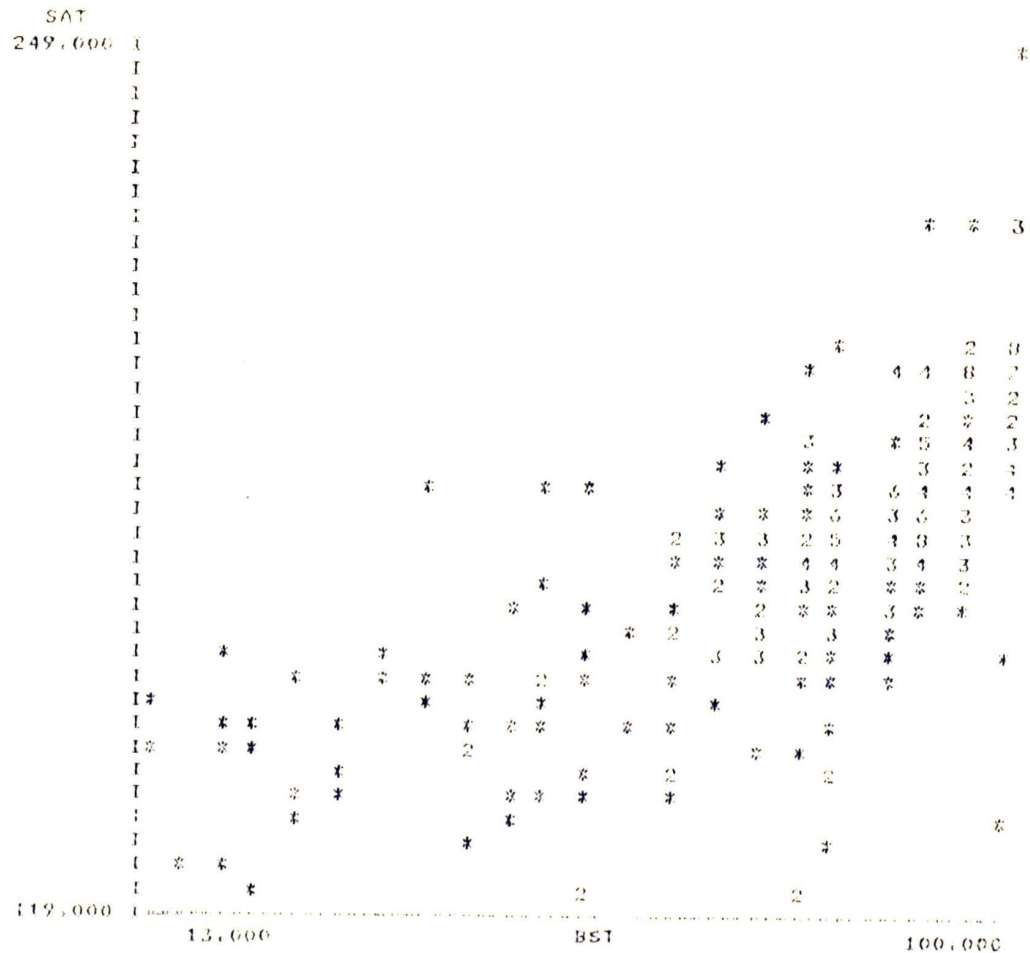


FIGURE 7
COUNTY R SPATTERGRAM
SAT AND BST MATHEMATICS

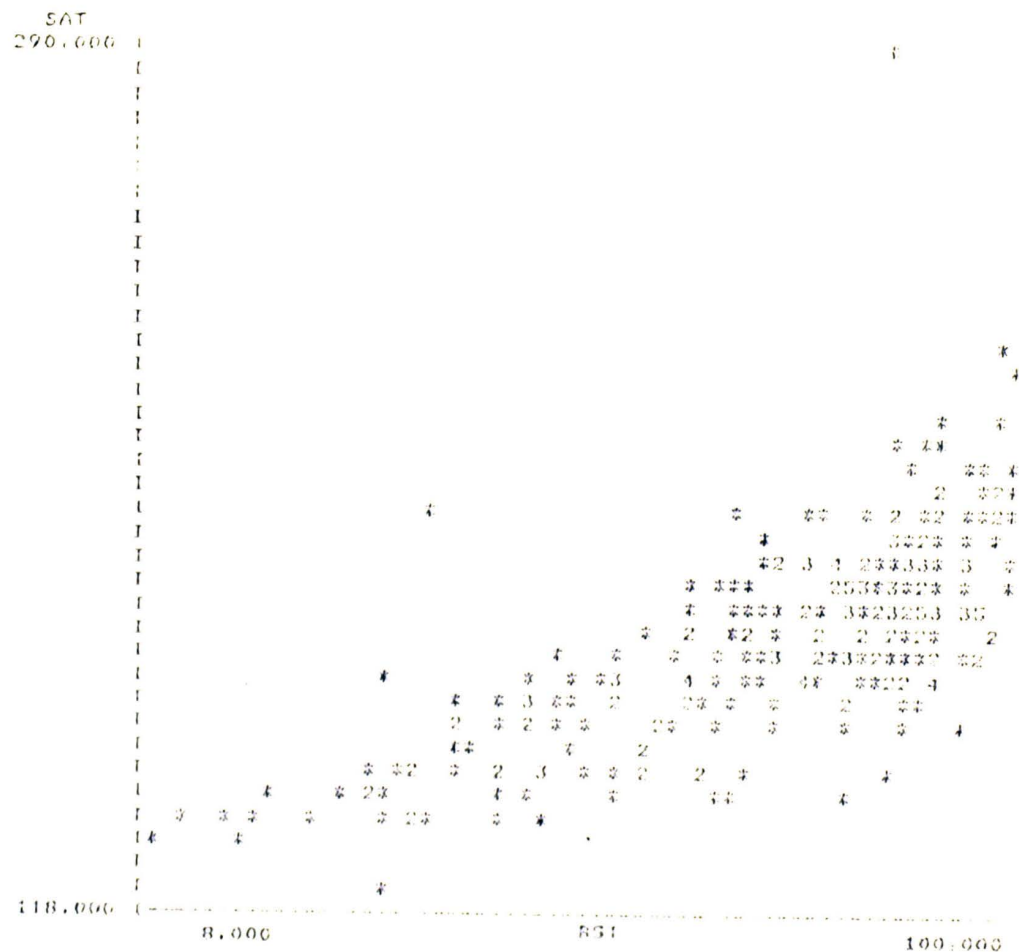


FIGURE B
COUNTY B SCATTERGRAM
SAT AND BST LANGUAGE

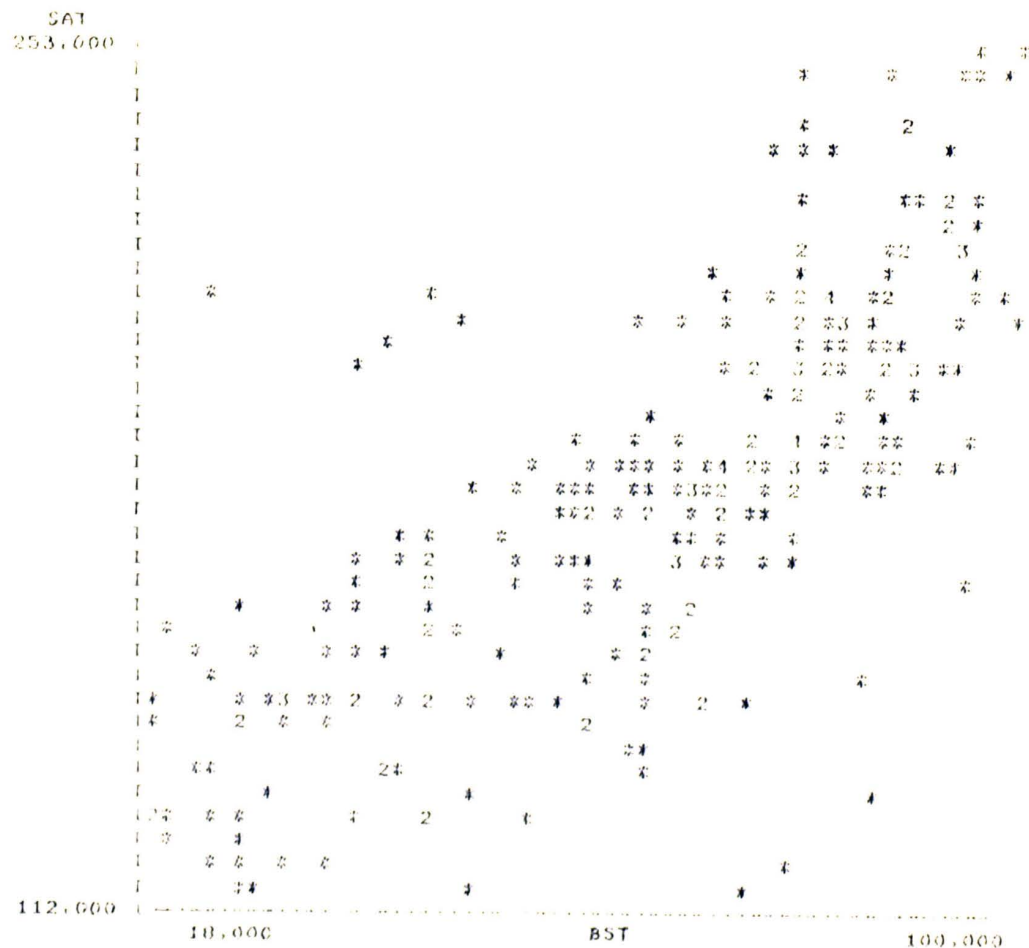


FIGURE 9
COUNTY A EXPECTANCY TABLE
SAT AND BST READING

	1	2	3	4	5	6	7	8	9	TOTAL
	25,000	35,000	45,000	55,000	65,000	75,000	85,000	95,000	100,000	
	00,000	25,000	35,000	45,000	55,000	65,000	75,000	85,000		
ABOVE										
7	0	0	0	0	0	0	0	0	0	0
240,000										
240,000										
6	0	0	0	0	0	0	0	0	0	0
220,000										
220,000										
5	0	0	0	0	0	0	0	9	9	9
200,000										
200,000										
4	0	0	0	0	0	0	1	13	27	41
180,000										
180,000										
3	0	0	0	0	0	1	24	57	32	114
150,000										
150,000										
2	0	0	0	2	11	11	27	23	6	80
140,000										
BELOW										
1	0	4	0	3	5	3	6	1	0	22
140,000										
TOTAL	0	4	0	5	16	15	50	94	74	256

FIGURE 10
COUNTY A EXPECTABLE TABLE
S61 AND BSE SPELLING

	1	2	3	4	5	6	7	8	9	TOTAL
	25,000	35,000	45,000	55,000	65,000	75,000	85,000	95,000	100,000	
	60,000	25,000	35,000	45,000	55,000	65,000	75,000	85,000	95,000	
ABOVE										
7	0	0	0	0	0	0	0	0	0	0
240,000										
240,000										
6	0	0	0	0	0	0	0	0	3	3
220,000										
220,000										
5	0	0	0	0	1	0	3	4	9	17
200,000										
200,000										
4	0	0	0	0	0	1	12	18	31	52
180,000										
180,000										
3	0	0	0	2	3	7	45	39	25	121
150,000										
150,000										
2	0	1	0	2	3	10	11	7	1	39
140,000										
140,000										
BELOW										
1	0	0	1	7	5	3	5	2	1	24
140,000										
140,000										
TOTAL	0	1	1	15	12	21	76	70	70	265

FIGURE 41
COUNTY A EXPECTANCY TABLE
601 AND 651 MATHEMATICS

	1	2	3	4	5	6	7	8	9	TOTAL
	25,000	25,000	45,000	55,000	65,000	75,000	85,000	95,000	100,000	
	60,000	25,000	35,000	45,000	55,000	65,000	75,000	85,000		
ABOVE										
7	0	0	0	0	0	0	0	0	0	0
240,000										
240,000										
8	0	0	0	0	0	0	0	0	1	1
220,000										
220,000										
5	0	0	0	0	0	1	0	1	2	4
200,000										
200,000										
4	0	0	0	0	0	3	8	13	8	32
180,000										
180,000										
3	0	0	2	15	29	32	38	18	3	137
160,000										
160,000										
2	0	2	11	35	18	7	3	2	0	78
140,000										
BELOW										
1	1	5	3	2	1	1	1	0	0	14
140,000										
TOTAL	1	7	15	52	48	44	50	34	14	266

TABLE 12
COUNTY A EFFICIENCY TABLE
SAT AND EST TABLE

	1	2	3	4	5	6	7	8	9	10
	1	2	3	4	5	6	7	8	9	10
	25,000	35,000	45,000	55,000	65,000	75,000	85,000	95,000	100,000	
	66,000	25,000	35,000	45,000	55,000	65,000	75,000	85,000		
ABOUT										
7	0	0	0	0	0	0	0	0	0	0
240,000										
240,000										
6	0	0	0	0	0	0	6	3	1	10
220,000										
220,000										
5	0	0	0	0	0	7	7	3	0	17
200,000										
200,000										
4	0	0	0	0	6	23	35	6	0	70
180,000										
180,000										
3	0	0	2	6	19	15	33	1	0	76
160,000										
160,000										
2	1	4	4	7	19	17	12	1	0	65
140,000										
BELOW										
1	0	4	10	3	3	3	2	0	0	23
140,000										
140,000										
10150	1	6	16	19	17	65	95	14	1	263

FIGURE 13
COUNTY R EXPECTANCY TABLE
SAL AND BST READING

	1	2	3	4	5	6	7	8	9	TOTAL
25,000	1	1	1	1	1	1	1	1	1	1
35,000	1	1	1	1	1	1	1	1	1	1
45,000	1	1	1	1	1	1	1	1	1	1
55,000	1	1	1	1	1	1	1	1	1	1
65,000	1	1	1	1	1	1	1	1	1	1
75,000	1	1	1	1	1	1	1	1	1	1
85,000	1	1	1	1	1	1	1	1	1	1
100,000	1	1	1	1	1	1	1	1	1	1
ABOVE	1	1	1	1	1	1	1	1	1	1
7	1	1	1	1	1	1	1	1	1	1
240,000	1	1	1	1	1	1	1	1	1	1
240,000	1	1	1	1	1	1	1	1	1	1
3	1	1	1	1	1	1	1	1	1	1
220,000	1	1	1	1	1	1	1	1	1	1
220,000	1	1	1	1	1	1	1	1	1	1
5	1	1	1	1	1	1	1	1	1	1
200,000	1	1	1	1	1	1	1	1	1	1
200,000	1	1	1	1	1	1	1	1	1	1
4	1	1	1	1	1	1	1	1	1	1
180,000	1	1	1	1	1	1	1	1	1	1
180,000	1	1	1	1	1	1	1	1	1	1
3	1	1	1	1	1	1	1	1	1	1
150,000	1	1	1	1	1	1	1	1	1	1
150,000	1	1	1	1	1	1	1	1	1	1
2	1	1	1	1	1	1	1	1	1	1
140,000	1	1	1	1	1	1	1	1	1	1
140,000	1	1	1	1	1	1	1	1	1	1
1	1	1	1	1	1	1	1	1	1	1
140,000	1	1	1	1	1	1	1	1	1	1
10161	1	1	1	1	1	1	1	1	1	1

FIGURE 14
COUNTY B EXPECTANCY TABLE
541 AND 631 SPELLING

	1	2	3	4	5	6	7	8	9	TOTAL
	1	2	3	4	5	6	7	8	9	
	25,000	35,000	45,000	55,000	65,000	75,000	85,000	95,000	100,000	
	00,000	25,000	35,000	45,000	55,000	65,000	75,000	85,000		
ABOVE										
7	0	0	0	0	0	0	0	0	1	1
240,000										
240,000										
6	0	0	0	0	0	0	0	1	4	5
220,000										
220,000										
5	0	0	0	0	0	0	2	8	25	35
200,000										
200,000										
4	0	0	1	1	1	1	15	28	32	79
180,000										
180,000										
3	1	0	0	2	3	14	40	28	9	97
160,000										
160,000										
2	4	5	4	9	2	7	11	2	1	46
140,000										
140,000										
BELOW										
1	2	3	0	4	3	1	3	0	1	13
140,000										
TOTAL	7	9	5	16	10	23	71	67	23	281

FIGURE 16
COUNTY 3 EXPECTANCY TABLE
SAT AND BST LANGUAGE

	1	2	3	4	5	6	7	8	9	TOTAL
	25,000	35,000	45,000	55,000	65,000	75,000	85,000	95,000	100,000	
	00,000	25,000	35,000	45,000	55,000	65,000	75,000	85,000		
ABOVE										
7	0	0	0	0	0	0	2	3	5	10
240,000										
240,000										
8	0	0	0	0	0	0	6	10	5	21
220,000										
220,000										
5	0	1	2	2	1	5	25	14	6	56
200,000										
200,000										
4	0	0	0	2	11	19	24	12	2	70
180,000										
180,000										
3	0	1	6	12	10	16	4	0	1	50
160,000										
160,000										
2	4	11	8	5	6	7	1	1	0	43
140,000										
BELOW										
1	5	10	5	4	2	2	2	1	0	31
140,000										
TOTAL	9	23	21	25	30	49	64	41	19	281