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ABSTRACT

The effects of standardized testing on schools and on the teaching and learning processes within schools were studied using responses from upper elementary school teachers in matched pairs from 11 medium-to-large school districts in 9 states. In all, 341 teachers responded to a 136-item questionnaire prepared for the study that explored the amount and type of test preparation in the classroom and school, the impact of testing on non-tested subjects, the impact of testing on teacher pride and professionalism, and attitudes about reasons why test scores change. Results indicate that testing does influence the teaching and learning within schools. Substantial time and attention are devoted to assuring that students are taught tested objectives and given practice in test content. Schools send messages to their teachers about the importance of test-curriculum alignment and teachers design instruction with such alignment in mind. These effects are particularly evident in schools serving low socioeconomic status students. Less apparent is whether test score improvements signal school improvement or teaching to the test. Twenty-nine tables and one flowchart present study data. A 25-item list of references and the Teacher Questionnaire are included. (SLD)

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CSE Technical Report 334

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Effects of Standardized Testing on Teachers and Learning – Another Look

Abstract

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This current study brings additional empirical data to the debate about the actual effects of standardized testing on teaching and learning. Specifically, this study poses a series of interrelated questions. First, what are the effects of standardized testing on (a) schools, and (b) the teaching and learning processes within them? Second, what do test scores mean? For instance, are increasing scores a reflection of a school's test preparation practices, its emphasis on basic skills, and/or its efforts toward instructional renewal? Third, are there differences in how testing effects instruction and what test scores mean between schools serving lower socioeconomic status (SES) students and those serving more advantaged students?

This paper begins with a review of some past studies on the effects of standardized testing on schooling. Next, summaries of the study's methodology and its results are provided. Finally, the implications of the study's findings for educational policy and research are reported.

Results indicate that testing does appear to influence the teaching and learning within schools. Substantial time and attention are devoted to assuring students are taught tested objectives and given practice in test content. Schools send out messages to their teachers about the importance of test-curriculum alignment and teachers design their instructional programs with such alignment in mind. Such effects are particularly in evidence in schools serving low SES students. Results were less clear-cut about whether test score gains signal school improvement or teaching to the test.

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Effects of Standardized Testing on Teachers and Learning — Another Look

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Standardized testing has assumed a prominent role in recent efforts to improve the quality of education. National, state, and district tests, combined with minimum competency, special program, and special diploma evaluations, have resulted in a greatly expanded set of testing requirements for most schools. At a cost of millions, even billions, of dollars and at the expense of valuable student, teacher, and administrator time, testing advocates and many policymakers still view testing as a significant, positive, and cost-effective tool in educational improvement.

Testing advocates' support for testing as such a tool is based on a simple set of arguments. First, testing sets meaningful standards to which school districts, schools, teachers, and students can aspire. Second, test data can be used as feedback to shape classroom instruction. Third,

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testing makes school systems, schools, and teachers more accountable for student learning. Finally, testing, coupled with incentives and/or sanctions, can be used to promote fast and broad changes within schools and can stimulate major educational reform.

While testing is thought by many to benefit education in a variety of ways, the validity and value of traditional standardized tests are subjects of increasing debate. Recent studies raise questions about whether improvements in test score performance actually signal improvement in learning (Cannell, 1987; Linn, Grave, & Sanders, 1989; Shepard, 1990). Other studies point to standardized tests' narrowness of content, their lack of match with curricula and instruction, their neglect of higher order thinking skills, and the limited relevance and meaningfulness of their multiple choice formats (Baker, 1989; Herman, 1989; Shepard, 1990). According to these and other researchers, rather than exerting a positive influence on student learning, testing may trivialize the learning and instructional process, distort curricula, and usurp valuable instructional time (Bracey, 1989; Dorr-Bremme & Herman, 1986; Romberg, Zarinnia, Williams, 1989; Smith, Edelsky, Draper, Rottenberg, & Cherland, 1989; Stake, 1988). Schools serving disadvantaged students are thought to be particularly at risk for such adverse effects (Dorr-Bremme & Herman, 1986).

This current study brings additional empirical data to the debate about the actual effects of standardized testing on teaching and learning. Specifically, this study poses a series of interrelated questions. First, what are the effects of standardized testing on (a) schools, and (b) the teaching and learning processes within them? Second, what do test scores mean? For instance, are increasing scores a reflection of a school's test preparation practices, its emphasis on basic skills, and/or its efforts toward instructional renewal? Third, are there differences in how testing effects instruction and what test scores mean between schools serving lower socioeconomic status (SES) students and those serving more advantaged students?

This paper begins with a review of some past studies on the effects of standardized testing on schooling. (The findings of these studies helped focus our key research questions and suggested specific items for study instrumentation.) Next, summaries of the study's methodology and its results are provided. Finally, the implications of the study's findings for educational policy and research are reported.

Literature Review

The following review examines research on a number of variables through which testing may influence schools. The variables are: accountability pressure, teacher attention to testing in instructional planning and delivery, time spent on test preparation, teachers' sense of professional pride, and

general attitudes teachers hold about the fairness and utility of testing.

Accountability pressure. It is well documented that standardized test scores are used by school administrators and the public to evaluate schools, teachers, and educational programs. Further, test scores are used in making a variety of decisions which have important consequences for teachers and students, that is, student promotion, teacher promotion, and program funding (Madaus, 1985, 1988, 1990; Tyler & White, 1979). The accountability pressure thus promoted has been examined in a number of studies. Some have investigated the factors which influence the amount of pressure experienced by teachers (Fish, 1988), while others have examined how accountability pressures influence teachers and teaching behavior (Kelleghan & Madaus, 1985; Fish, 1989; Dorr-Bremme 1983).

Fish found that apparent pressure on teachers to improve their students' test scores was influenced by a number of factors including: the degree and nature of administrator involvement, teachers' professional self-concepts, and teachers' years of teaching experience (Fish, 1988). Thus, administrator concern over test scores was positively related to accountability pressure reported by teachers. Both positive teacher self-concept and more years of teaching experience were negatively related to such pressure. One possible explanation for experienced teachers feeling less account-

ability pressure comes from a study by Smith, et al. (1989). Smith and her colleagues found that veteran teachers more often believed that low test scores were due to factors beyond their control, such as low student ability and discrepancies between the test and curriculum, than did novice teachers.

Madaus (1988) also studied factors that increase the accountability pressure on teachers to improve their students' test scores. He coined the phrase "high stakes testing" to refer to testing which promotes pressure and behavior change by associating test results with important consequences. Also noting this phenomenon, Romberg et al. (1989) concluded "the greater the consequences attached to the test, the more likely it would be to have an impact [on teaching]" (p. 14). Similar to Madaus, Fish (1988) found that the amount of pressure felt by teachers increased with their belief that test results were to be used more for teacher evaluation than for student diagnosis and prescription.

The literature shows disagreement over whether accountability pressure exerts positive, negative, or no effects on teaching and teaching behavior. Some, for example, have noted potential positive effects on teacher motivation. Madaus (1985) observed that when test score gains are tied to incentives, such as Distinguished School Awards, Cash for CAP, career ladder incentives, and celebrations; teachers feel

motivated rather than pressured to increase scores. In addition, Fish (1988) found that teachers were enthusiastic about efforts to raise test scores when their principals adopted a collaborative rather than a dictatorial approach to test score improvement.

Other literature suggests that teachers respond negatively to pressure created by testing. Fish (1988) found that one factor reducing such negative impact was years of teaching experience. She observed that relatively inexperienced teachers felt greater anxiety and accountability pressure than experienced teachers. Fish also found that teachers reacted negatively to pressure created by public displays of classroom scores. Furthermore, when teacher-specific and/or classroom-specific accountability existed, teachers reported instances of cheating—giving direct hints to students or changing student responses on tests—and feelings of anxiety and low self-esteem. Dorr-Bremme, Burry, Catterall, Cabello, and Daniels (1983) reported similar teacher testimonies about feelings of anxiety when scores were publicly posted. In addition, they found that anxiety increased when principals wanted to know why there had been a decline in scores.

Still other studies argue that testing and accountability pressure have little or no effect on teaching. According to these studies, teachers discount the credibility of standardized tests and do not take action based on them.

Salmon-Cox (1981) found that mandated achievement tests were of little relevance to teachers, and that teachers viewed the results of such tests as relatively unreliable sources of information. Dorr-Bremme and Herman (1983) as well as Ruddell (1985) found that teachers paid little attention to standardized tests for these same reasons. Goslin (1967) similarly observed that teachers felt that standardized achievement tests were unfair and inaccurate measures of student ability and therefore were not worth considering in their decision-making.

Influence of testing on teacher planning and instruction. Several studies have investigated the ways in which testing influences teacher planning and instruction. Herman and Dorr-Bremme (1983) found relatively little influence of standardized tests on teacher decision-making; for instance, in grouping students, planning instruction, grading, diagnosing/prescribing—compared to other sources of information available to teachers. In contrast, Salmon-Cox (1981) reported that teachers in Pittsburgh found the California Achievement Test to be useful in sequencing instruction, planning instruction and grouping students. Mehrens (1984) found that achievement testing served to broaden the curriculum; that is, testing encouraged teachers to add to, rather than replace existing instructional topics.

However, when test results are linked to rewards or sanctions, studies have found that "high stakes" testing

leads to a narrowing of curricula and instruction. Madaus (1988) noted that teachers taught to the test when they believed important decisions, such as student promotion, would be based on test scores. Smith et al. (1989) found that pressure to improve students' test scores caused some teachers to "neglect material that the external test does not include...reading real books, writing in authentic context, solving higher-order problems, creative and divergent thinking projects, longer-term integrative unit projects, [and] computer education..." (p. 268). She and her colleagues also found that teachers were using worksheets with the same question format as the mandated test. Corbett and Wilson (1988), in a study of Maryland schools, similarly found that schools redefined course objectives and resequenced course content in an attempt to improve test scores. Stodolsky (1988) further observed that accounta-bility pressure discouraged teachers from using joint or team teaching approaches and from changing their methods to facilitate serious student learning.

Time spent on testing and test preparation. The amount of instructional time teachers spend on test preparation has been well documented. Smith and her colleagues (1989) reported that teachers in two case study schools spent three to four weeks of school time on special test preparation for standardized tests, and that time spent on test preparation increased with the approach of the test date. Similarly, Edelman (1981) found that even though teachers

varied in the specific ways and extent to which they prepared students for mandated tests, 60% of the teachers stressed test content over a long period of time. Moreover, Fish (1989) found that teachers, over the past five to six years, increased the amount of time they spent on practices which they believed would increase test scores.

Teachers' sense of professionalism and pride in work. Fish (1988), as previously mentioned, found that teachers' professional self-images are negatively related to the pressure they feel to raise test scores. She noted that feelings of guilt, anger, and low professional esteem increased when teachers engaged in questionable testing and test preparation activities. Corbett and Wilson (1988) also substantiated the high pressure and negative affect felt by teachers. A common reaction, according to Corbett and Wilson, was captured by this frustrated teacher's comments, "Teachers feel jerked around. The test dictates what I will do in the classroom. If you deviate from the objectives, you feel guilty...we were told 'here's how to get kids to pass the test fast'"(p. 36).

Teachers' general attitudes about the validity of testing. Teacher reactions to the validity of standardized testing, according to the literature, range from concern to distrust. Findings from Dorr-Bremme et al. (1983) indicated that teachers were concerned about the utility of mandated tests, their appropriateness for some students, and the

impact of testing on instructional time and student self-confidence. Similarly Smith et al. (1989) reported that teachers were pessimistic about what scores reveal. Less than one-fifth of the teachers interviewed felt that results from the mandated, standardized test used in their schools accurately reflected their students' learning for the year. Moreover, only 3% of the teachers from their study felt that the test was appropriate for ethnic minorities or non-English speakers. Finally, Fish (1988) documented the general teacher attitude that tests do not reflect classroom curriculum or student learning. Interestingly, however, Fish found that even teachers who viewed standardized tests as poor measures of student achievement still felt the need to spend a great deal of time on test preparation.

These findings raise questions concerning possible discrepancies between teachers' beliefs about the utility and reliability of standardized testing and their classroom instructional behavior in preparing their students for tests.

The meaning of test score gains. The meaningfulness of standardized test scores as indicators of true student learning has recently come under serious question from other sources as well. Cannell (1987) discovered that all 50 states and most districts reported above-average performance on standardized, norm-referenced achievement test scores, an unnatural occurrence given the norm-referenced metric. Using greater technical rigor, Linn et al. (1989) replicated

Cannell's findings, but moved beyond them in identifying underlying causes for such seemingly spurious results, among them the age of norms. In a related interview study, Shepard (1990) identified additional issues which contribute to score inflation, among them the practice of using the same test forms year after year, the practice of having classroom teachers administer the tests, questionable test preparation practices, and the pressure on teachers to raise test scores.

The combined results from these studies raise questions about whether test score gains signal improvement in broader student learning or whether they simply reflect teaching to the test, that is, unduly focusing the curriculum on narrow test content and/or having students practice items nearly identical to those appearing on the test, and/or, worse still, giving students practice with the actual items. A basic issue is: Do current accountability pressures drive schools to narrow their curriculum and engage in unsound instructional practices at the cost of broader student learning, school attitudes, and climate?

Key Research Questions

The current inquiry investigated a number of issues raised separately by these previous studies, looking particularly at the interplay between the effects of testing on teaching and learning processes in schools and the consequent meaning of test score gains. Specific research questions included:

1. What are the effects of testing on schools and on the teaching and learning processes within them?

   a. How much and from where do teachers feel pressure to improve their students' test scores?

   b. How much and how does test preparation affect teachers' instructional planning, learning strategies, and curriculum content for tested subjects and what impact does test preparation have on non-tested subjects?

   c. How much time do school administrators spend on test preparation and how does that amount of time compare to the time they spend on instructional renewal?

   d. What effect does testing have on teachers' sense of professionalism and pride in their work?

   e. What general attitudes do teachers hold about the reasons test scores change, their fairness, and their usefulness?

2. What is the meaning of test score gains? Specifically, can we differentiate schools showing increasing scores from those showing stable or decreasing scores in terms of:

   a. Emphasis on testing and test preparation?

   b. Attention to school renewal?

3. Does testing have differential meaning in schools serving students from mostly economically disadvantaged backgrounds and those serving their more advantaged counterparts?

Our study used survey methodology to address these questions, comparing the testing and educational practices of schools with increasing test scores to the practices of schools with stable or decreasing test scores. Responses from schools serving higher and lower socioeconomic status students also were compared.

Methodology

Subjects (Table 1). The study results are based on responses from upper elementary school teachers in matched pairs of schools from 11 medium-to-large school districts in nine states across the country. This sample was the result of a phased selection process. First, districts representing diverse geographical locales were identified and their willingness to participate in the study was secured. Directors of research and evaluation (or their counterparts) in consenting districts were then asked to identify pairs of schools in their districts which were demographically similar, for example, having the same socioeconomic standing. It was also requested that one school in the pair had shown a significant increase in standardized test scores over the previous three years (8 to 10 National Curve Equivalent points) and the other school had shown no such increase

TABLE 1

Survey Sample

A. Schools By Test Score Trends

Increasing	Stable or Decreasing	Total
n=24	n=24	48

B. Mean Number of Teachers Per School

7.1 (3.52)

C. Total Number of Teachers

341

TABLE 1 (Cont'd.)

D. School Level: Mean Years of Teaching Experience By Test Score Trends

Increasing	Stable or Decreasing	Overall
13.19 (5.15)	11.82 (4.05)	12.51 (4.63)

E. School Level: Mean Years Teaching At Current School By Test Score Trends

Increasing	Stable or Decreasing	Overall
6.15 (2.97)	5.75 (2.60)	5.94 (2.77)

TABLE 1 (Cont'd.)

F. Student Characteristics By Test Score Trends By School

Percent of Chapter I Students

	0-25%	26-50%	51-75%	76-100%	$\overline{X}$ %
Increasing	n=13	n=6	n=4	n=1	26.42 (29.45)
Stable or Decreasing	n=12	n=3	n=7	n=2	34.67 (32.49)
Overall	n=25	n=9	n=11	n=3	30.55 (30.96)

Percent of Limited English Proficiency Students

	0-25%	26-50%	51-75%	76-100%	$\overline{X}$ %
Increasing	n=21	n=1	n=1	n=1	11.30 (22.98)
Stable or Decreasing	n=20	n=2	n=2	n=0	11.90 (21.76)
Overall	n=41	n=4	n=2	n=1	11.60 (22.13)

(having either remained stable or decreased over the same time period). The plan asked for two low SES pairs and one medium or high SES pair. The majority of directors, however, could not generate three such pairs. (In fact, a number of additional districts who were willing to participate in the study were unable to generate three pairs of schools with contrasting performance trends because they could not identify <u>any</u> schools that had demonstrated clear upward score trends.)

Identified schools were then contacted, and all upper elementary school teachers within them asked to complete questionnaires. A modest honorarium was offered to each teacher returning a survey. All schools so contacted agreed to participate in this study. Data were subsequently received from 341 third- through sixth-grade teachers from 24 matched pairs of schools, a total of 48 schools representing the West, the Southwest, the Midwest, the Southeast, and the East Coast regions of the country. Responses were received from approximately seven teachers at each school.

Based on the results of the survey, the schools in this study had highly experienced teaching staffs, with an average of 12.5 years of teaching experience. The teaching staffs at schools with increasing scores had a slightly higher average of 13.2 years teaching experience than staffs at schools with decreasing or stable scores who averaged 11.8 years of experience. Teacher respondents from both types of schools

showed similar longevity; both groups on average had taught at those schools for approximately six years.

The teachers in this study also provided data about the students they taught. Specifically, they estimated the percentage of their students who were classified as Chapter One participants and/or Limited English Proficient. The average percentage of Chapter One students reported at the schools with increasing scores is slightly lower (26.4%) than the number reported at schools with decreasing or stable scores (34.7%). Both types of schools reported a similarly low percentage of Limited English Proficient students (11.6%). Chapter One percentages were used subsequently to determine schools' socioeconomic status (SES) for study purposes. Low SES schools were those reporting more than 50% Chapter One students, while high SES schools were those reporting 20% or less Chapter One students (Table 2).

Measures. A teacher questionnaire containing 136 items was specially developed for the study. The questionnaire asked about teacher and student background characteristics, perceived pressure to improve test scores, and influence of testing on teacher planning. The questionnaire also asked about amount and type of test preparation at the classroom and school level, impact of testing on non-tested subjects, impact of testing on teacher pride and sense of professionalism, and general attitudes about reasons test scores change,

TABLE 2

Test Score Trends by Socioeconomic Status

	Increasing Scores n=24	Decreasing Scores n=24
Low SES	29.2% n=7	37.5% n=9
High SES	50.0% n=13	41.7% n=10

their fairness, and their usefulness. The complete questionnaire can be found in Appendix A.

Data collection procedures. As soon as permission was received to conduct the study, testing directors called the principals of the paired schools to notify them of their selection. Next, study researchers contacted the principals both by phone and letter to communicate the purpose and the methodology of the study. Along with a set of teacher questionnaires and return envelopes, principals were sent a letter that gave a brief rationale of the study to share with their teachers, and a reminder to inform teachers that they would be paid a modest honorarium for their participation. Teachers were instructed to mail back their questionnaires directly to the researchers.

Data analysis procedures. Data were coded by school, test score trend status, socioeconomic status and other identifying information. Data were then aggregated at the school level for analysis; that is, the responses of individual teachers were averaged with those of other teachers from their school and then comparisons made between matched responses from schools with increasing scores and those with stable or decreasing scores. School level estimates were based on at least three responses from a school, and only matched schools were included in the final data set. Thus, if there were no responses from one school within a matched

pair, responses from the other school were eliminated from the analysis.

Comparisons also were made between high and low SES schools, both within and across schools with different test score trends. Because the research design was not fully crossed on these latter variables, these analyses are intended only as exploratory. Finally, correlations were used to examine relationships between overall factors believed to contribute to testing effects and test score gains.

Limitations of study. Beyond reliance on self-report data, an important limitation of the study is related to the selection of suitable school pairs, especially in urban districts with large numbers of disadvantaged students (our original target population). Our methodology relied on research and evaluation directors' expert judgm nt in identifying demographically similar pairs of schools, where one school had demonstrated a clear improvement in test scores and one had not. As mentioned, a number of districts had difficulty in identifying schools with clear upward trends, skewing the sample; and it is possible that some directors who did identify schools for our sample may have used information in addition to test scores when defining whether or not a school was improving.

Results

Pressure to improve student test scores (Tables 3 and 4). Overall, teachers report feeling strong pressure from district administrators and the media to improve their students' test scores. Teachers also report feeling a moderate amount of such pressure from their principals, other school administrators, other teachers, parents, and the community. Interestingly, teachers in schools with increasing test scores report feeling more pressure from every source than teachers in schools with stable or decreasing scores. Further, when responses from high and low SES schools are compared, teachers in these schools feel the greatest pressure from different sources, with the exception of the media. Teachers in high SES schools report that parents, the community, and the media are the strongest sources of pressure, while teachers in low SES schools feel the most pressure from district administrators, principals, other school administrators, and the media. Finally, it is interesting to note that teachers in high SES schools with increasing test scores report the most overall pressure, while the teachers in low SES schools with decreasing scores report the least amount of overall pressure.

Effects of test preparation on curriculum content, teachers' instructional planning, and classroom activities for tested subjects (Tables 5-8). In general, the teachers in our sample report that testing

TABLE 3

Pressure on Teachers to Improve Test Scores
By Test Score Trends

	Increasing n=24	Stable or Decreasing n=24
District administrators/ school boards	3.5939 (0.661)	3.5587 (0.672)
Principal	3.1279 (0.821)	2.9847 (0.844)
Other school administrators	3.0823 (0.785)	2.9587 (0.676)
Other teachers	2.3579 (0.556)	2.1201 (0.480)
Parents	2.6561 (0.725)	2.2761 (0.518)
Community	2.8422 (0.721)	2.4775 (0.563)
Newspaper/Media	3. [illegible]56 (0.710)	3.5589 (0.594)
Overall pressure	21.2198 (3.184)	19.5210 (2.706)

1=Almost No Pressure 3=Moderate Pressure 5=Great Pressure

TABLE 4

Pressure on Teachers to Improve Test Scores
By Test Score Trends and Socioeconomic Status

	Increasing		Stable or Decreasing	
	High SES n=12	Low SES n=7	High SES n=10	Low SES n=9
District administrators/ school boards	3.478 (.463)	3.800 (.866)	3.498 (.684)	3.697 (.508)
Principal	2.77 (.527)	3.298 (1.09)	2.696 (.943)	3.166 (.684)
Other school administrators	2.895 (.608)	3.128 (1.12)	2.868 (.613)	3.021 (.665)
Other teachers	2.191 (.334)	2.315 (.763)	2.062 (.457)	2.166 (.533)
Parents	3.00 (.635)	2.345 (.843)	2.590 (.418)	2.036 (.549)
Community	3.20 (.44)	2.59 (.92)	2.822 (.569)	2.175 (.520)
Newspaper/Media	3.77 (.39)	3.50 (1.13)	3.677 (.623)	3.442 (.559)
Overall pressure	21.25 (2.210)	20.85 (4.810)	20.030 (3.130)	19.139 (2.207)

1=Almost No Pressure 3=Moderate Pressure 5=Great Pressure

TABLE 5

Influence of Testing on Teachers' Instructional Planning by Test Score Trends

	Increasing n=24	Stable or Decreasing n=24
Looks at old/current tests to make sure curriculum includes test content	3.130 (.991)	3.068 (.843)
Test objectives covered in instruction	3.7378 (0.975)	3.7069 (0.853)
Adjusts plans according to last year's test scores	2.6637 (0.708)	2.6726 (0.665)
Adjusts plans according to current year's test scores	3.3084 (0.818)	3.2352 (0.743)
Adjusts curriculum sequence according to test	2.8757 (0.816)	2.8873 (0.808)
Overall influence of testing on teachers' planning	19.0134 (4.389)	18.884 (4.128)

1=Not At All 3=To Some Extent 5=Thoroughly

TABLE 6

Influence of Testing on Teachers' Instructional Planning by Test Score Trends and Socioeconomic Status

	Increasing		Stable or Decreasing	
	High SES n=12	Low SES n=7	High SES n=10	Low SES n=9
Looks at old/current tests to make sure curriculum includes test content	2.55 (.81)	3.62 (.98)	2.81 (.85)	3.51 (.47)
Test objectives covered in instruction	3.40 (.93)	3.91 (1.20)	3.58 (.97)	3.91 (.49)
Adjusts plans according to last year's test scores	2.51 (.60)	2.56 (.95)	2.51 (.54)	2.70 (.64)
Adjusts plans according to current year's test scores	3.06 (.59)	3.41 (1.21)	3.00 (.79)	3.39 (.53)
Adjusts curriculum sequence according to test	2.51 (.79)	3.02 (.82)	2.68 (.72)	3.39 (.53)
Overall influence of testing on teachers' planning	17.01 (4.16)	19.78 (4.60)	17.66 (4.04)	20.49 (2.64)

1=Not At All 3=To Some Extent 5=Thoroughly

TABLE 7

Class Time Spent on Test Preparation
by Test Score Trends

	Increasing n=24	Stable or Decreasing n=24
Gives worksheets that review test content	4.0346 (1.305)	4.0621 (1.435)
Practices on test item format	4.2615 (1.158)	4.3964 (1.185)
Gives commercial practice tests	2.9079 (1.069)	3.1290 (1.310)
Practices on old test forms	1.9482 (1.088)	2.1183 (1.201)
Teaches test-taking strategies	4.4319 (1.013)	4.7551 (1.045)
Overall time spent on test preparation	17.3513 (4.753)	18.4202 (5.450)

1=None 2=At Most a Day 3=A few Days 4=A Week

5=Four Weeks 6=Regularly Throughout the Year

TABLE 8

Class Time Spent on Test Preparation
by Test Score Trends and Socioeconomic Status

	Increasing		Stable or Decreasing	
	High SES n=12	Low SES n=7	High SES n=10	Low SES n=9
Gives worksheets that review test content	3.461 (1.409)	4.446 (1.03)	3.725 (1.600)	4.365 (.880)
Practices on test item format	3.749 (1.315)	4.589 (.293)	4.084 (1.460)	4.722 (.852)
Gives commercial practice tests	2.499 (1.122)	3.376 (.946)	2.735 (1.132)	3.807 (1.380)
Practices on old test forms	1.574 (.670)	1.957 (.854)	2.073 (1.011)	2.175 (1.138)
Teaches test-taking strategies	4.069 (.952)	4.411 (1.057)	4.503 (1.296)	5.001 (.676)
Overall time spent on test preparation	15.303 (5.042)	18.065 (3.741)	17.069 (6.100)	20.068 (3.989)

1=None 2=At Most a Day 3=A few Days 4=A Week

5=Four Weeks 6=Regularly Throughout the Year

substantially influences their instructional planning. Specifically, they report that in devising their plans for instruction they (a) look at prior tests to make sure that their curricula includes all or most of the test content, and (b) plan to assure that they cover test objectives. Further, they report that to some extent they adjust their instructional plans based on the test performance of the class they had last year and more so on the most recent test performance of their current class. They also adjust the sequence of their curriculum based on what is included in the test. There appear to be no differences between how testing influences teachers' planning at schools with increasing scores and how testing influences teacher planning at schools with stable or decreasing scores. However, when teachers at high and low SES schools are compared, it is clear that the instructional plans of teachers at low SES schools are more influenced by testing than those of teachers at high SES schools.

Beyond its effects on teacher planning and instructional delivery, testing also affects the teaching-learning process through instructional time devoted to direct test preparation activities. In general, teachers report spending from one to four weeks of class time on the following: having students complete worksheets that review expected test content, having students practice item formats expected on the test, and instructing students in test-taking strategies. Teachers

also report spending from one to several days administering commercially produced practice tests and old forms of the test to their students. While no differences on these items were found between the reports of teachers at schools with increasing scores and those at schools with stable or decreasing scores, teachers at low SES schools report spending more of their classroom time on all test preparation activities than do teachers at high SES schools.

Impact of test preparation on non-tested subjects (Tables 9 and 10). Even though teachers report substantial pressure to improve test scores, spend substantial classroom time on test preparation activities, and give more than a moderate amount of their attention to drilling students in basic skills; they still report giving at least moderate classroom attention to non-tested subjects, such as fine arts, science, and higher order thinking skills. It is of interest to note, however, that while fine arts and non-tested subjects receive moderate attention, teachers indicate that drilling students in basic skills receives the most emphasis. Furthermore, while most teachers report that attention to all subjects has remained relatively stable over the last three years, teachers at high SES schools report an increase in attention to higher order thinking skills during this period. Teachers in low SES schools, furthermore, report significantly more attention to test preparation than their higher SES counterparts.

TABLE 9

Subject Focus and Its Change Over
the Last Three Years by Test Score Trends

	Increasing Scores n=24	Stable or Decreasing Scores n=24
Drilling students in basic skills	2.60 (.42) same	2.51 (.34) same
Fine Arts	1.87 (.46) same	1.88 (.32) same
Science	2.33 (.38) same	2.34 (.24) same
Subjects which are not tested	1.96 (.44) same	1.97 (.24) same
Higher order thinking/problem-solving	2.32 (.46) up	2.30 (.26) same
Test preparation	2.26 (.49) same	2.21 (.49) same

1=Litte 2=Moderate 3=A Lot

TABLE 10

Subject Focus and Its Change Over the Last Three Years
by Test Score Trends and Socioeconomic Status

	Increasing		Stable or Decreasing	
	High SES n=12	Low SES n=7	High SES n=10	Low SES n=9
Drilling students in basic skills	2.58 (.29) same	2.56 (.71) same	2.48 (.41) same	2.45 (.23) same
Fine Arts	1.91 (.31) same	2.10 (.53) same	1.94 (.24) same	1.84 (.37) same
Science	2.33 (.25) same	2.14 (.44) same	2.37 (.20) same	2.42 (.24) same
Subjects which are not tested	1.99 (.29) same	1.98 (.66) same	2.06 (.17) same	1.95 (.31) same
Higher order thinking/problem-solving	2.40 (.28) up	2.30 (.63) same	2.31 (.18) up	2.31 (.37) same
Test preparation	2.11 (.51) same	2.41 (.57) same	1.98 (.38) same	2.39 (.37) same

1=Litte 2=Moderate 3=A Lot

Time school administrations spend on test preparation (Tables 11 and 12). School administrators pay attention to student performance, and they use a variety of strategies to let their staff know that they care about test scores. The teachers in our sample report that a few times a year, school administrators engage in each of the following: staff meetings to review test scores, discussions with teachers on ways to improve test scores, discussions with teachers on ways to strengthen instruction in specific areas where test scores are weak, and providing teachers with materials to improve their students' test-taking skills. Teachers also report that their school administrators provide individual teachers with assistance in how to improve their students' test scores at least once a year, and likewise check whether teachers are emphasizing skills which showed weakness from past test results. In addition, teachers report that their school administrators sometimes publicly let teachers know how their students performed compared to other teachers' students, and on occasion, administrators consider test scores when evaluating teachers.

Results indicate that there are no significant differences between the amount of (a) school attention to test scores reported by teachers from schools with increasing scores and, (b) school attention to test scores reported at schools with decreasing or stable scores. Teachers at low SES schools, however, do report more school attention to test

TABLE 11

School Attention to Test Scores
by Test Score Trends

	Increasing n=24	Stable or Decreasing n=24
*Lets teachers know how students compared to others	3.0784 (0.951)	2.8164 (0.892)
*Considers test scores to evaluate teachers	2.0494 (0.617)	2.2310 (0.872)
Staff meetings to review test scores	2.6250 (0.620)	2.6411 (0.738)
Discusses ways to improve scores	2.7481 (0.692)	2.9085 (0.805)
Discusses ways to strengthen instruction where scores are low	2.7031 (0.599)	2.8538 (0.710)
Provides test-taking skills materials	2.5389 (0.756)	2.5507 (0.769)
Assists individual teachers to improve scores	1.8841 (0.641)	2.0250 (0.743)
Checks whether teachers emphasize weak skills	2.0452 (0.652)	2.3612 (0.677)
Overall school attention to test scores	20.0786 (4.027)	20.2698 (5.334)

* 1=Almost Never 3=Sometimes 5=Almost Always

1=Not At All 2=Once 3=A Few Times 4=Several Times

TABLE 12

School Attention to Test Scores
by Test Score Trends and Socioeconomic Status

	Increasing		Stable or Decreasing	
	High SES n=12	Low SES n=7	High SES n=10	Low SES n=9
*Lets teachers know how students compared to others	3.019 (.860)	3.248 (1.054)	2.719 (.731)	2.574 (.936)
*Considers test scores to evaluate teachers	1.816 (.630)	2.307 (.608)	2.079 (.669)	2.060 (.441)
Staff meetings to review test scores	2.375 (.473)	2.881 (.796)	2.407 (.634)	2.826 (.501)
Discusses ways to improve scores	2.553 (.515)	2.844 (1.023)	2.589 (.827)	3.199 (.483)
Discusses ways to strengthen instruction where scores are low	2.754 (.452)	2.546 (.910)	2.637 (.669)	3.117 (.483)
Provides test-taking skills materials	2.328 (.757)	2.429 (.783)	2.355 (.905)	2.674 (.650
Assists individual teachers to improve scores	1.680 (.626)	1.818 (.490)	1.816 (.715)	2.164 (.679)
Checks whether teachers emphasize weak skills	1.929 (.695)	2.157 (.786)	2.170 (.645)	2.507 (.554)
Overall school attention to test scores	18.59 (4.293)	21.564 (4.00)	18.662 (4.804)	20.926 (4.043)

* 1=Almost Never 3=Sometimes 5=Almost Always

1=Not At All 2=Once 3=A Few Times 4=Several Times

scores than teachers at high SES schools. This is especially true when (a) test scores are used to compare and/or evaluate teachers, (b) staff meetings are held to review test scores, (c) discussions occur on ways to improve scores, and (d) individual teachers receive assistance on improving their students' performance.

School attention to instructional renewal (Tables 13-16). According to teacher responses, school attention to non-tested areas of instruction is similar to that devoted to test preparation. Teachers report that a few times a year school administrators discuss ways to improve students' attitudes and interest in learning, as well as introduce and discuss important new instructional ideas. They also report that more than once a year their administrators discuss with teachers ways to improve instruction in higher-order thinking skills, on average a decidedly less frequent occurrence than test preparation discussions.

Nonetheless, the teachers in our sample generally report substantial school-wide instructional renewal. They see a somewhat strong presence in their schools of programmatic efforts to improve student learning, school climate, and students' attitudes and interest in school; and a moderately strong presence of innovative instructional strategies. Less strongly felt, but still reported was some school-wide or grade-level planning. It is of interest that teachers in low SES schools with stable or decreasing scores report the least

TABLE 13

School Attention to Other Planning Issues
by Test Score Trends

	Increasing n=24	Stable or Decreasing n=24
Discusses ways to improve higher order thinking skills	2.6049 (0.751)	2.7306 (0.526)
Discusses ways to improve student attitude	2.9029 (0.642)	3.0618 (0.474)
Introduces new instructional ideas	2.9600 (0.696)	3.1462 (0.486)

1=Not At All 2=Once 3=A Few times 4=Several Times

TABLE 14

School Attention to Other Planning Issues
by Test Score Trends and Socioeconomic Status

	Increasing		Stable or Decreasing	
	High SES n=12	Low SES n=7	High SES n=10	Low SES n=9
Discusses ways to improve higher order thinking skills	2.71 (.66)	2.54 (1.14)	2.61 (.50)	2.77 (.54)
Discusses ways to improve student attitude	3.05 (.49)	2.85 (.97)	3.02 (.40)	2.99 (.61)
Introduces new instructional ideas	3.13 (.54)	2.95 (.99)	3.15 (.44)	3.11 (.54)

1=Not At All 2=Once 3=A Few times 4=Several Times

TABLE 15

Extent of Instructional Renewal and Its Change Over the Last Three Years by Test Score Trends

	Increasing Scores n=24	Stable or Decreasing Scores n=24
Programmatic efforts to improve student learning	2.53 (.35) same	2.42 (.23) up
Innovative instructional strategies	2.40 (.46) same	2.36 (.33) same
Support for school-wide or grade level planning	2.30 (.60) down	2.37 (.41) down
Efforts to improve school or class climate	2.50 (.42) same	2.54 (.39) same
Efforts to improve student interest in learning	2.60 (.30) same	2.56 (.34) same
Opportunity for students to choose what they want to study	2.33 (.38) same	2.24 (.37) same
Student's pride in school	2.53 (.35) same	2.48 (.37) same
Overall instructional renewal	17.149 (1.922)	16.934 (1.726)

1=Weak 2=Moderate 3=Strong

TABLE 16

Extent of Instructional Renewal and Its Change Over the Last Three Years by Test Score Trends and Socioeconomic Status

	Increasing Scores		Stable or Decreasing Scores	
	High SES n=12	Low SES n=7	High SES n=10	Low SES n=9
Programmatic efforts to improve student learning	2.47 (.37) same	2.75 (.27) same	2.36 (.22) same	2.42 (.24) same
Innovative instructional strategies	2.46 (.35) same	2.34 (.50) same	2.44 (.22) same	2.24 (.39) same
Support for school-wide or grade level planning	2.42 (.45) down	2.27 (.65) same	2.36 (.40) down	2.19 (.42) down
Efforts to improve school or class climate	2.57 (.34) up	2.51 (.39) same	2.61 (.25) same	2.31 (.50) same
Efforts to improve student interest in learning	2.50 (.22) same	2.80 (.25) same	2.60 (.23) same	2.54 (.46) same
Opportunity for students to choose what they want to study	2.25 (.18) same	2.30 (.58) same	2.19 (.22) same	2.14 (.41) same
Student's pride in school	2.62 (.24) same	2.36 (.55) up	2.60 (.15) same	2.37 (.45) same
Overall instructional renewal	17.155 (1.713)	17.334 (1.858)	17.28 (1.157)	16.038 (1.781)

1=Weak 2=Moderate 3=Strong

presence of instructional renewal in their schools, while low SES schools with increasing test scores report the greatest presence of instructional renewal.

Teachers' sense of their work environment (Tables 17 and 18). In general, the teachers in this sample report a moderate to strong and stable sense of job satisfaction over the last three years. Despite pressure from external mandates, they see themselves (a) with control over their classroom programs, (b) at least moderately free both to use their professional judgment in instructional matters and to meet individual student needs, and (c) as somewhat influential in school decision-making. In particular, teachers at schools with increasing scores report feeling significantly more influence over school decision-making than those at schools with stable or decreasing scores.

Further, while teachers report satisfaction with their work, their image as professionals, their efficacy, and their ability to deal in depth with specific topics, they also report a moderate amount of pressure to cover all the required curriculum.

Teachers appear to have a strong sense of pride in their work, particularly in schools with increasing scores.

General attitudes teachers hold about the reasons test scores change, and the fairness and usefulness of testing (Tables 19-22). Overall, our sample reports that changes in instructional strategies and teaching effective

TABLE 17

Job Satisfaction and Its Change Over the Last Three Years by Test Score Trends

	Increasing Scores n=24	Stable or Decreasing Scores n=24
Teacher control over classroom program	2.50 (.38) same	2.62 (.24) same
Use of teachers' professional judgment	2.41 (.36) same	2.43 (.27) same
Ability to meet individual student needs	2.44 (.36) same	2.40 (.29) same
Teacher's influence on school decision-making	2.24[s] (.41) same	2.00[s] (.36) same
Pressure to cover all required curriculum	2.23 (.56) same	2.34 (.31) same
Ability to cover one subject thoroughly	2.33 (.38) same	2.42 (.29) same
Image of teacher as an efficient educator	2.39 (.44) same	2.28 (.35) same
Satisfaction with my work	2.51 (.35) same	2.50 (.29) same
Overall job satisfaction	20.60 (2.39)	20.22 (1.54)

1=Weak 2=Moderate 3=Strong

[s] Difference significant at $p<.05$

TABLE 18

Job Satisfaction and Its Change Over the Last Three Years by Test Score Trends and Socioeconomic Status

	Increasing Scores		Stable or Decreasing Scores	
	High SES n=12	Low SES n=7	High SES n=10	Low SES n=9
Teacher control over classroom program	2.44 (.33) same	2.49 (.55) same	2.58 (.26) same	2.70 (.22) same
Use of teachers' professional judgment	2.43 (.29) same	2.61 (.27) same	2.41 (.24) same	2.48 (.32) same
Ability to meet individual student needs	2.41 (.34) same	2.45 (.39) same	2.35 (.20) same	2.30 (.35) same
Teacher's influence on school decision-making	2.24 (.40) same	2.37 (.47) same	1.99 (.27) same	1.96 (.39) same
Pressure to cover all required curriculum	2.34 (.25) same	2.07 (.81) same	2.33 (.35) same	2.27 (.26) same
Ability to cover one subject thoroughly	2.22 (.39) same	2.58 (.36) same	2.40 (.19) same	2.46 (.41) same
Image of teacher as an efficient educator	2.37 (.48) same	2.35 (.50) same	2.15 (.31) same	2.21 (.32) same
Satisfaction with my work	2.45 (.36) same	2.59 (.36) same	2.43 (.16) same	2.51 (.29) same
Overall job satisfaction	20.22 (2.16)	21.37 (2.89)	19.98 (1.15)	20.35 (1.94)

1=Weak 2=Moderate 3=Strong

TABLE 19

Perceived Causes of Changes in Test Scores
by Test Score Trends

	Increasing Scores n=23	Stable or Decreasing Scores n=24
Changes in student population	2.36[s] (.66)	2.83[s] (.63)
Alignment of instruction with test content	2.75 (.63)	2.75 (.66)
Attention to test-taking skills	2.85 (.59)	2.87 (.66)
Changes in instructional strategies	3.11 (.44)	3.04 (.52)
Changes in textbooks	2.51 (.59)	2.63 (.73)
Changes in test administration practices	1.98 (.53)	2.21 (.67)
Changes in teaching effectiveness	3.06 (.49)	3.00 (.52)
Changes in school climate	2.50[s] (.44)	2.98[s] (.49)
Changes in the community	2.48[s] (.56)	2.90[s] (.68)

1=No Factor 2=Minor Factor 3=Moderate Factor 4=Major Factor

[s]=Difference significant at $p<.05$

TABLE 20

Perceived Causes of Changes in Test Scores
by Test Score Trends and Socioeconomic Status

	Increasing Scores		Stable or Decreasing Scores	
	High SES n=12	Low SES n=6	High SES n=10	Low SES n=9
Changes in student population	2.38 (.63)	2.71 (.76)	3.02 (.43)	2.91 (.77)
Alignment of instruction with test content	2.40 (.56)	3.14 (.57)	2.55 (.60)	2.87 (.73)
Attention to test-taking skills	2.60 (.66)	3.20 (.42)	2.54 (.53)	3.22 (.63)
Changes in instructional strategies	2.96 (.39)	3.34 (.37)	2.90 (.39)	3.21 (.61)
Changes in textbooks	2.49 (.42)	2.91 (.77)	2.60 (.75)	2.81 (.81)
Changes in test administration practices	1.81 (.57)	2.20 (.53)	1.93 (.43)	2.31 (.83)
Changes in teaching effectiveness	3.07 (.45)	3.05 (.45)	2.84 (.37)	3.01 (.68)
Changes in school climate	2.48 (.34)	2.74 (.42)	2.83 (.31)	3.11 (.70)
Changes in the community	2.51 (.62)	2.54 (.52)	3.14 (.31)	2.98 (.91)

1=No Factor 2=Minor Factor 3=Moderate Factor 4=Major Factor

TABLE 21a

Teachers' Attitudes About Testing by Test Score Trends

	Increasing n=24	Stable or Decreasing n=24
Expectations		
*Students not capable of learning material	2.3884[s] (0.874)	2.8588[s] (0.621)
Expects students to perform well	4.1335 (0.803)	4.0955 (0.414)
Teachers can influence how well students do	3.6247 (0.549)	3.6790 (0.469)
Overall positive expectations	11.3912 (1.444)	10.8924 (1.049)

* Scales reversed in overall calculations

1=Definitely Disagree 3=Neutral 5=Definitely Agree

[s] Difference significant at $p<.05$

TABLE 22a

Teachers' Attitudes About Testing by Test Score Trends and Socioeconomic Status

	Increasing		Stable or Decreasing	
	High SES n=12	Low SES n=7	High SES n=10	Low SES n=9
Expectations				
*Students not capable of learning material	2.27 (.43)	2.53 (1.44)	2.61 (.35)	3.03 (.83)
Expects students to perform well	4.28 (.40)	3.81 (1.29)	4.11 (.44)	3.96 (.38)
Teachers can influence how well students do	3.73 (.50)	3.33 (.69)	3.72 (.40)	3.59 (.56)
Overall positive expectations	11.74 (.92)	10.67 (1.86)	11.22 (.87)	10.50 (1.28)

* Scales reversed in overall calculations

1=Definitely Disagree 3=Neutral 5=Definitely Agree

TABLE 21b Teachers' Attitudes About Testing by Test Score Trends (Cont'd.)

	Increasing n=24	Stable or Decreasing n=24
Pride		
Staff has a strong sense of pride	4.4472 (0.557)	4.0657 (0.464)
*It is a waste of time to do my best as a teacher	1.752 (.769)	1.921 (.663)
*School is more interested in improving test scores than overall student learning	1.8902 (0.600)	2.2345 (0.645)
Overall pride	12.798[s] (1.462)	11.9075[s] (1.363)

* Scales reversed in overall calculations

1=Definitely Disagree 3=Neutral 5=Definitely Agree

[s] Differences significant at $p<.05$

TABLE 22b Teachers' Attitudes About Testing by Test Score Trends and Socioeconomic Status (Cont'd.)

	Increasing		Stable or Decreasing	
	High SES n=12	Low SES n=7	High SES n=10	Low SES n=9
Pride				
Staff has a strong sense of pride	4.582 (.542)	4.619 (.481)	4.212 (.430)	3.868 (.174)
*It is a waste of time to do my best as a teacher	1.768 (.582)	1.774 (1.237)	1.991 (.710)	1.817 (.778)
*School is more interested in improving test scores than overall student learning	1.711 (.492)	1.917 (.803)	2.110 (.639)	2.209 (.538)
Overall pride	13.089 (1.423)	12.929 (1.837)	12.104 (1.429)	11.842 (1.497)

* Scales reversed in overall calculations

1=Definitely Disagree 3=Neutral 5=Definitely Agree

TABLE 21c Teachers' Attitudes About Testing by Test Score Trends (Cont'd.)

	Increasing n=24	Stable or Decreasing n=24
Helpfulness		
Testing helps schools improve	2.5948 (0.588)	2.4470 (0.587)
*Testing creates tension for teachers & students	3.9071 (0.638)	3.9029 (0.541)
Tests give important feedback	2.6616) (0.569)	2.7324 (0.646)
Tests help clarify important learning goals	2.1980 (0.[illegible]73)	2.3075 (0.470)
Overall helpfulness of testing	12.1348 (1.947)	12.2017 (2.100)

* Scales reversed in overall calculations

1=Definitely Disagree 3=Neutral 5=Definitely Agree

TABLE 22c Teachers' Attitudes About Testing by Test Score Trends and Socioeconomic Status (Cont'd.)

	Increasing		Stable or Decreasing	
	High SES n=12	Low SES n=7	High SES n=10	Low SES n=9
Helpfulness				
Testing helps schools improve	2.69 (.36)	2.10 (.70)	2.488 (.572)	2.346 (.697)
*Testing creates tension for teachers & students	3.93 (.48)	3.83 (.95)	3.928 (.601)	3.840 (.556)
Tests give important feedback	2.82 (.30)	2.19 (.75)	2.774 (.789)	2.584 (.533)
Tests help clarify important learning goals	2.27 (.45)	1.86 (.41)	2.322 (.484)	2.154 (.460)
Overall helpfulness of testing	12.38 (1.40)	10.61 (2.34)	12.111 (2.446)	11.910 (2.087)

* Scales reversed in overall calculations

1=Definitely Disagree 3=Neutral 5=Definitely Agree

TABLE 21d Teachers' Attitudes About Testing by Test Score Trends (Cont'd.)

	Increasing n=24	Stable or Decreasing n=24
Fairness		
Teachers can influence how well students do	3.6247 (0.549)	3.6790 (0.469)
*Discrepancy between what should be taught & test emphasis	3.5889 (0.471)	3.5734 (0.539)
Overall fairness of testing	6.0375 (0.752)	6.1121 (0.779)

* Scales reversed in overall calculations

1=Definitely Disagree 3=Neutral 5=Definitely Agree

TABLE 22d Teachers' Attitudes About Testing by Test Score Trends and Socioeconomic Status (Cont'd.)

	Increasing		Stable or Decreasing	
	High SES n=12	Low SES n=7	High SES n=10	Low SES n=9
Fairness				
Teachers can influence how well students do	3.73 (.50)	3.333 (.691)	3.717 (.398)	3.594 (.558)
*Discrepancy between what should be taught & test emphasis	3.44 (.40)	3.869 (.575)	3.638 (.517)	3.604 (.692)
Overall fairness of testing	6.30 (.68)	5.464 (.757)	6.078 (.760)	6.001 (.917)

* Scales reversed in overall calculations

1=Definitely Disagree 3=Neutral 5=Definitely Agree

ness are the most important factors underlying changes in students' test scores over the last three years. More modest effects are exerted by (a) changes in the student population and the community, (b) alignment between instruction and test content, (c) attention to test taking skills, (d) textbooks, (e) test administration practices, and (f) school climate.

It is of interest to note that the different attributions for test score changes exist where test scores are increasing and in those schools where test scores are not showing gains. The latter schools are significantly more likely to attribute causes to changes in their student population, in their community, and in the school climate. Trends in Table 20 suggest that teachers at high SES schools with stable or decreasing scores are most likely to make such attributions, while teachers at low SES schools with increasing scores credit their gains to changes in instructional strategies, attention to test-taking skills, better alignment of instruction with test content, and changes in teaching effectiveness.

Despite these differences in attribution, teachers report having somewhat positive expectations for their students' test performance. They generally report believing that their students are capable of learning the tested material, that their students will perform well on tests, and that they, as teachers, can influence how well their students perform. Teachers at schools with increasing scores do

report significantly higher expectations than teachers at schools with stable or decreasing scores. Similarly, teachers at high SES schools report higher expectations of their students than those at low SES schools.

The teachers in our sample were less positive about the helpfulness of testing. Teachers disagreed that (a) testing is helping schools improve, (b) that tests give them important feedback about how well they are teaching in curricular areas, and (c) that tests help to clarify learning goals. In contrast, they believe that testing creates substantial tension for teachers and students. Teachers at low SES schools held particularly negative views of testing.

Overall, teachers were fairly neutral about the fairness of testing. While they agreed that teachers can influence how well their students perform on standardized tests, they feel a discrepancy between what they think should be taught and what standardized tests actually emphasize. Similar to responses about the helpfulness of testing, teachers at low SES schools report feeling less able to influence student test scores. They also report greater discrepancy between what they think should be taught and what the test emphasizes than teachers at more advantaged schools.

Relationships between background, testing, and teaching variables (Tables 23 and Figure 1). Mirroring differences in responses cited earlier, correlations show that socioeconomic status is significantly and negatively

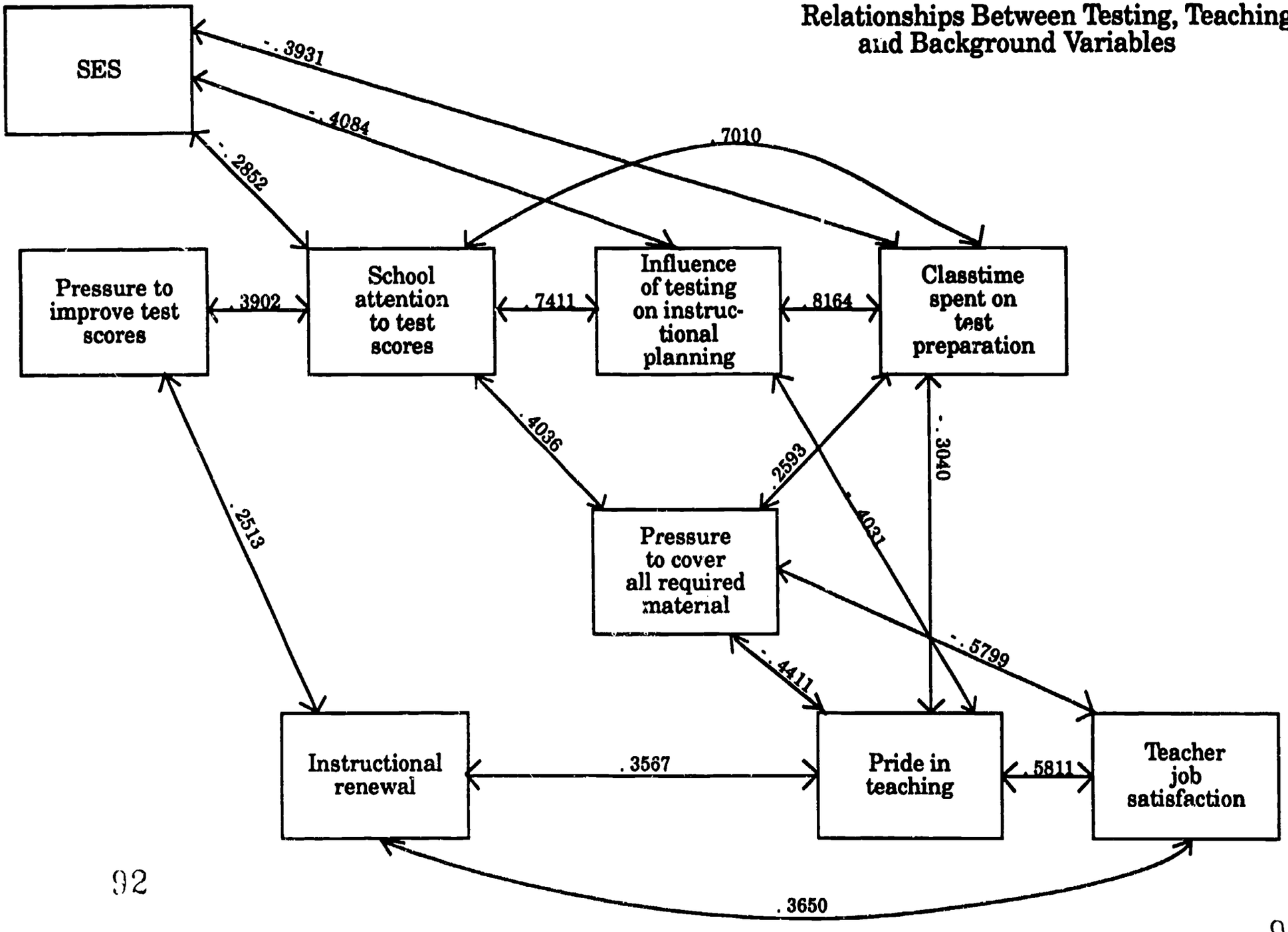
TABLE 23

Correlations Among Student, Teacher, School, and Testing Variables

	SES	Pressure	Influence Planning	Time on Test Preparation	School Attention to Tests	Job Satis-faction	Instruc-tional Renewal	Press to Cover Material	Pride
SES	———								
Overall pressure to increase test scores	.1892 p=.099	———							
Overall influence of testing on instructional planning	-.4084 p=.002	.1765 p=.115	———						
Overall time on test preparation	-.3931 p=.003	-.0013 p=.496	.8164 p=.000	———					
Overall school attention to test scores	-.2852 p=.026	.3902 p=.003	.7411 p=.000	.7010 p=.000	———				
Overall job satisfaction	-.1208 p=.207	-.0179 p=.452	-.0819 p=.290	-.0341 p=.409	.0884 p=.277	———			
Overall Instruc-tional Renewal	.2320 p=.060	.2513 p=.046	-.1869 p=.107	-.1493 p=.161	.2315 p=.061	.3650 p=.006	———		
Pressure to cover all required materials	.1336 p=.183	.2168 p=.069	.2306 p=.057	.2593 p=.038	.4036 p=.002	-.5799 p=.000	-.0426 p=.389	———	
Overall pride in teaching	.0528 p=.361	-.1715 p=.122	-.2897 p=.023	-.1606 p=.138	-.0110 p=.471	.5494 p=.000	.3567 p=.007	-.3302 p=.011	———

Figure 1

Relationships Between Testing, Teaching, and Background Variables



related to the following: school attention to test scores, teachers' attention to testing in planning their instruction, and overall time devoted to test preparation activities. Based on the direction of the relationship, testing is more influential and exerts stronger effects on teaching in schools serving more disadvantaged students.

The cluster of variables assessing schools' and teachers' attention to testing and test scores also shows significant correlations in the expected direction. Where teachers report stronger school emphasis on testing they also indicate greater attention to testing in their instructional planning and report devoting more of their students' time to test preparation activities. Perceived pressure to improve test scores, however, appears significantly related only to the attention given testing by school administrators. School attention to test scores also is highly related to the pressure teachers feel to cover all required material.

Such pressure, however, is negatively related both to teachers' job satisfaction and to their pride in teaching. Pride in teaching is positively related to instructional renewal.

These patterns of correlations suggest possible models of the effects of testing on schools, the teaching and learning within them, and on students' test performance. While intended only as exploratory, Figure 1 shows one such model.

Summary and Conclusions

Subject to the caveats of self-report data, survey results suggest that standardized testing has substantial effects on schools and the teaching and learning processes within them:

- Teachers feel strong pressure, especially from district administrators and the media, to improve their students' test scores.
- School administrators encourage attention to test scores by: holding staff meetings to review the scores, discussing with teachers how to improve their students' tests scores, emphasizing instructional changes in specific areas of test score weakness, and providing materials to support students' test-taking skills. On average such meetings and discussions are each held several times a year.
- Testing substantially influences teachers' classroom planning. Teachers make sure that their instructional programs cover test objectives and many look at prior tests to assure a good match. Adjustments are made in curricular scope and sequence based on test content and students' prior performance.

- Teachers devote substantial student time to test preparation activities, including worksheets that review test content, test-wiseness instruction, and practice tests.
- Despite substantial reported pressure from testing mandates, teachers indicate a moderate and relatively stable sense of both job satisfaction and professional efficacy.

Reaffirming findings from other studies, survey results also consistently indicate that schools serving economically disadvantaged students show more such effects than those serving students from higher socioeconomic communities. While teachers from higher SES schools report an increase over the last three years in instructional time devoted to higher level thinking skills, teachers in lower SES schools do not report such an increase. Further, low SES schools report giving substantially more instructional attention to test content through planning and delivery of instructional programs than higher SES schools.

Study results on the meaning of test score gains, particularly on whether such gains signal school improvement or teaching to the test, are less clear cut. In comparing responses from schools with increasing scores to those from other schools, the study found no evidence to suggest that increasing scores are an artifact of "teaching to the test" practices. While teachers in schools with increasing scores

do report feeling more pressure to produce, they indicate no more school attention to testing, no more attention to testing in their own instructional planning, and no more instructional time devoted to test preparation compared to those practices in other schools.

In fact, the significant relationships found in the study linking school test score trends with other variables, imply a broader meaning for test performance. Although the direction of the relationships and the potential halo effects are unknown, there is limited evidence to suggest that schools where test scores are improving are better environments for children. Compared to other schools, teachers from schools where tests scores are improving (a) report more instructional innovation in their schools, (b) feel more involved in school decision-making, (c) hold higher expectations for their students' performance, and (d) have more pride in their work. Teachers in schools with stable or decreasing schools are more likely to believe that their students are not capable of learning the materials on which they are tested and are more likely to believe that changes in test performance are due to changes in the school population and the community.

In the minds of teachers, however, test results are of uncertain meaning and of uncertain value in school improvement. Teachers do not believe that standardized testing is helping schools to improve. Neither do they believe that such

testing helps clarify school goals, provides useful feedback, or adequately assesses the most important learning goals for students.

In conclusion, testing does appear to influence the teaching and learning within schools. Substantial time and attention are devoted to assuring students are taught tested objectives and given practice in test content. Schools send out messages to their teachers about the importance of test-curriculum alignment and teachers design their instructional programs with such alignment in mind. Whether this is good news or bad news depends on whether or not one views the standards set by such tests as educationally valid and significant. If test results do represent significant learning outcomes, then testing may contribute to the attainment of those outcomes. If test results do not represent such learning, then in current practice they are a misguided tool.

Whether the test results, under conditions of accountability pressure, signal meaningful learning or even represent broader learning beyond specific test content, remain critical issues for further investigation. Such meaningfulness and generalizability issues are critical to the productive use of assessment in stimulating educational reform—and represent provocative challenges, whether the test instruments are traditional, multiple-choice measures or newer performance-oriented ones.

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Appendix A

TEACHER QUESTIONNAIRE
Effects of Testing Study

Directions: In this questionnaire, the term "test" refers to the nationally normed standardized tests (such as ITBS, CTBS, MAT, or CAT) given in your district. Please respond to the following questions by either circling or filling in your responses.

1. School name: _____

2. Grade(s) you currently teach: 3 4 5 6

3. Grade(s) you taught last year: 3 4 5 6

4. Years you've been teaching (including this year): _____ years

5. Years you've been teaching at this school (including this year): _____ years

6. How would you describe your current students' academic ability level compared to a national norm?

Much below national norm	Somewhat below national norm	At national norm	Somewhat above national norm	Much above national norm
1	2	3	4	5

7. Compared to students you have had over the last 3 years at the same grade level, how would you rate the ability level of your current class?

   a. higher ability b. about equal c. lower ability d. N/A

8. Approximately what percentage of your current students:

   a. participate in Chapter 1:_____%

   b. are limited- or non-English proficient:_____%

   c. are in special education or considered learning disabled: _____%

9. What nationally normed standardized test is administered in your school? _____

10. Who administers these tests to students? a. their classroom teachers b. other _____

11. To what extent do you feel pressure from the following groups to improve your students' standardized test scores:

	Almost no pressure		Moderate		Great pressure
a. my principal	1	2	3	4	5
b. other school administrators	1	2	3	4	5
c. other teachers	1	2	3	4	5
d. district administration/board	1	2	3	4	5
e. parents	1	2	3	4	5
f. community	1	2	3	4	5
g. newspaper/media	1	2	3	4	5

12. How often are the following statements true for your school?

	Almost never		Sometimes		Almost always
a. My school's instructional program emphasizes basic skills	1	2	3	4	5
b. My school gives a lot of attention to higher-order thinking and communication skills	1	2	3	4	5
c. My school lets teachers know how their students performed compared to other teachers	1	2	3	4	5
d. My school considers test scores when evaluating teachers	1	2	3	4	5

13. How often during the year does your school administration engage in the following activities *with teachers*?

	Not at all	Once	A few times	Several times
a. Holds staff meeting to review test scores	1	2	3	4
b. Discusses ways to improve test scores	1	2	3	4
c. Discusses ways to strengthen instruction in the specific areas where test scores show weakness	1	2	3	4
d. Provides materials to give students practice in test-taking skills	1	2	3	4
e. Provides special assistance to help individual teachers improve test scores	1	2	3	4
f. Discusses ways to improve instruction in higher order thinking skills	1	2	3	4
g. Checks to see that teachers are emphasizing skills which showed weakness from past test results	1	2	3	4
h. Discusses ways to improve students' attitudes/interest in learning	1	2	3	4
i. Introduces/discusses important new instructional ideas	1	2	3	4

14. How thoroughly do you engage in the following when planning instruction for *your students*?

	Not at all		To some extent		Thoroughly
a. I make sure the content and skills covered in the test with my class are reviewed within the week or two prior to test administration	1	2	3	4	5
b. I look at old or current test to make sure that my curriculum includes all or most of the test's content	1	2	3	4	5

14. (Continued) How thoroughly do you engage in the following:

	Not at all		To some extent		Thoroughly
c. I make sure the objectives of the test are covered in my instruction	1	2	3	4	5
d. I adjust my instructional plans based on the test performance of the class I had last year	1	2	3	4	5
e. I adjust my instructional plans based on my current students' most recent test results	1	2	3	4	5
f. I adjust the sequence of my curriculum based on what's included in the test	1	2	3	4	5

15. How much time do you spend in your classroom on the following test preparation activities?

	None	At most a day	A few days	A week	4 weeks	Regularly Throughout Year
a. Giving students worksheets that review expected test content	1	2	3	4	5	6
b. Giving students practice in the kinds of item formats that are on the test	1	2	3	4	5	6
c. Giving students commercially produced practice tests	1	2	3	4	5	6
d. Giving students old forms of the test on which to practice	1	2	3	4	5	6
e. Instructing students on test-taking strategies	1	2	3	4	5	6

16. To what extent are the following characteristics present in your school **and** to what extent have they changed *over the last three years*?

	Presence			**Change**			
	Weak	Moderate	Strong	Decreased	Same	Increased	Don't know
a. Programmatic efforts to improve student learning	1	2	3	1	2	3	DK
b. Emphasis on preparing students to do well on tests	1	2	3	1	2	3	DK
c. Implementation of innovative instructional strategies	1	2	3	1	2	3	DK
d. Support for school-wide or grade-level planning	1	2	3	1	2	3	DK
e. School or grade-wide efforts to improve school or class climate	1	2	3	1	2	3	DK

16. (Continued) Extent to which the following characteristics are present in your school:

	Presence			Change			
	Weak	Moderate	Strong	Decreased	Same	Increased	Don't know
f. Students' interest in learning	1	2	3	1	2	3	DK
g. Opportunities for students to choose what they want to study	1	2	3	1	2	3	DK
h. Students' pride in school	1	2	3	1	2	3	DK

17. How much attention are you able to give to the following subject matters in your classroom **and** to what extent has this changed *over the last three years*?

	Amount of Attention			Change			
	Little	Moderate	A lot	Decreased	Same	Increased	Don't know
a. Higher-order thinking and problem-solving	1	2	3	1	2	3	DK
b. Drilling students in basic skills (e.g., vocabulary, grammar, computations)	1	2	3	1	2	3	DK
c. Fine arts (music, art)	1	2	3	1	2	3	DK
d. Science	1	2	3	1	2	3	DK
e. Subjects which are not tested	1	2	3	1	2	3	DK
f. Test preparation (homework and classwork)	1	2	3	1	2	3	DK

18. How frequently are the following instructional practices employed in your classroom **and** to what extent has their frequency changed *over the last three years*?

	Frequency			Change			
	Rarely	Sometimes	Often	Decreased	Same	Increased	Don't know
a. Use of instructional exercises which allow for constructed responses (e.g., short essays)	1	2	3	1	2	3	DK
b. Use of multiple choice, fill-in-the-blank, and matching exercises	1	2	3	1	2	3	DK
c. Use of cooperative/small group learning	1	2	3	1	2	3	DK
d. Use of extended project work (e.g., research or other projects requiring a week or more)	1	2	3	1	2	3	DK

19. To what extent are the following job climate characteristics present in your school and to what extent have these items changed *over the last three years*?

	Presence			Change			
	Weak	Moderate	Strong	Decreased	Same	Increased	Don't know
a. Control I have over my classroom program	1	2	3	1	2	3	DK
b. Emphasis on using educators' professional judgment in instructional matters	1	2	3	1	2	3	DK
c. My ability to meet individual student needs	1	2	3	1	2	3	DK
d. Teachers' influence on school decision-making	1	2	3	1	2	3	DK
e. Pressure to cover all the required curriculum	1	2	3	1	2	3	DK
f. My ability to cover any one subject thoroughly	1	2	3	1	2	3	DK
g. The image of the teacher as an effective educator	1	2	3	1	2	3	DK
h. My satisfaction with my work	1	2	3	1	2	3	DK

20. How has your schools' performance on the standardized changed *over the last three years*?

a. scores have increased

b. scores have decreased

c. some grades' score have increased while others have decreased

d. scores are about the same (skip to question 22)

e. I don't know

21. If test scores have changed, why do you think this change has occurred? Check the importance of each of the following factors:

	No factor	Minor factor	Moderate factor	Major factor
a. Changes in student population	1	2	3	4
b. Alignment of instruction with test content	1	2	3	4
c. Attention to test-taking skills	1	2	3	4
d. Changes in instructional strategies	1	2	3	4
e. Changes in textbooks	1	2	3	4
f. Changes in test administration practices	1	2	3	4
g. Changes in teaching effectiveness	1	2	3	4

21. (Continued) If test scores have changed, why do you think this change has occurred?

	No factor	Minor factor	Moderate factor	Major factor
h. Changes in school climate	1	2	3	4
i. Changes in the community	1	2	3	4
j. Other, please specify:_____	1	2	3	4

22. The following items inquire about your personal attitudes. Read each item and indicate your degree of agreement with it.

	Definitely disagree		Neutral		Definitely agree
a. I expect my students to perform well on tests	1	2	3	4	5
b. Standardized testing is helping schools improve	1	2	3	4	5
c. Testing creates a lot of tension for teachers and/or students	1	2	3	4	5
d. Many of the students I teach are not capable of learning the material I am supposed to teach	1	2	3	4	5
e. I sometimes feel it is a waste of time to try to do my best as a teacher	1	2	3	4	5
f. Most of our school staff have a strong sense of pride in their work	1	2	3	4	5
g. Our school is more interested in increasing test scores than in improving overall student learning	1	2	3	4	5
h. Test results give an accurate reading on student learning	1	2	3	4	5
i. Staff feel there is a discrepancy between what they think should be taught and what the tests emphasize	1	2	3	4	5
j. Teachers can influence substantially how well their students do on standardized tests	1	2	3	4	5
k. Teachers who complain about testing are usually poor teachers who do not want to be accountable as professionals	1	2	3	4	5
l. The school's emphasis on test results shows a real commitment to raising student achievement	1	2	3	4	5
m. Tests give me important feedback about how well I am teaching in each curricular area	1	2	3	4	5
n. Standardized tests help to clarify which learning goals are the most important	1	2	3	4	5

Your Comments

If you think we will not be able to figure out the ways standardized testing is helping or hurting from your answers to this questionnaire, please explain below as simply as you can.

Thank you for your patience, time, and lots of good thought.