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ABSTRACT

This study investigated the use of teacher perceptions of school effectiveness variables as part of the Pennsylvania state assessment program and briefly reviewed the teacher survey instrument development. Data were available for 155 of the 500 school districts from the 1985 Educational Quality Assessment administration. A norm sample included 111 high schools, 138 junior high schools and 361 elementary schools. Students were tested in grades 5, 8, and 11. Pearson correlation coefficients were calculated between teacher perceptions of school effectiveness variables and student achievement as well as student attitudes. Teacher perceptions of school effectiveness variables were found to have a statistically significant link with most of the student achievement measures. Rather low correlations, which in many cases were not statistically significant, were found between teacher perceptions of school effectiveness variables and student attitudes. Teacher perceptions of school effectiveness variables (when used with other school and student variables) were not the best predictors of student achievement in multiple regression. Appendix A lists 44 school climate variables with their measure weighting and description. Appendix B contains the teacher perceptions of school effectiveness variables with percentages by response option. (PN)

Are Teacher Perceptions of School Effectiveness Variables Correlated with Student Achievement and Student Attitudes?

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Title: Are Teacher Perceptions of School Effectiveness Variables Correlated with Student Achievement and Student Attitudes?

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Abstract

The task was to investigate the use of teacher perceptions on school effectiveness variables as part of the Pennsylvania state assessment program. Teacher perceptions of school effectiveness variables were found to have a statistically significant link with most of the student achievement measures. Rather low correlations, which in many cases were not statistically significant, were found between teacher perceptions of school effectiveness variables and student attitudes. Teacher perceptions of school effectiveness variables (when used with other school and student variables) were not the best predictors of student achievement in multiple regression.

Are Teacher Perceptions of School Effectiveness Variables Correlated with Student Achievement and Student Attitudes?

Introduction

The body of research known collectively as the effective schools literature was in response to the concern over substantial disparities in student achievement according to socioeconomic status (SES). The forefathers of the movement, such as Edmonds (1982), Weber (1971), and Brookover (1974) advanced the belief that schools can overcome the effects of family background and income lev l.

Based on case studies of schools that were especially successful in raising achievement levels of disadvantaged minority students, researchers have identified the characteristics of so-called effective schools. Some of those characteristics include emphasis on basic skills, instructional leadership on the part of the principal, high expectations for all students, regular assessment of achievement, and an orderly school climate. Different studies used varying mythological procedures to define effectiveness, (Austin, 1981) and those studies obtained somewhat different critical characteristics as a result. However, the findings were fairly consistent with each other and with common sense. This appeal to common sense beliefs about education may have been partly responsible for the proliferation of school improvement projects that refer to the effective school characteristics as though they were definite, rather than tentative findings.

School district administrators have been most eager to implement research findings concerning effective schools in the various school improvement projects. Unfortunately, enthusiasm over implementation has preempted the critical assessment of the research findings. Many issues have not been adequately addressed. Even the operational definition of effective schools is an unresolved issue. Researchers must select from a "bewildering array of alternative techniques" (Rowan, et. al., 1983) to identify effective schools. Thus, researchers often have to rely on their individual perspective of effectiveness when defining effective schools. Also, there is some indication that a school may not be equally effective for various groups of students. For example, an effective school in an urban area may not have the characteristics that would enable a school to be effective in a rural area, or an effective secondary school may not have the same characteristics as an effective elementary school.

While reorganizing the concerns expressed about the definitions of school effectiveness and use of the research, the Pennsylvania state assessment program employed several school effectiveness variables. School effectiveness studies were reviewed by the Pennsylvania Department of Education (PDE) staff. Using that information a paper and pencil survey was developed to tap the teacher perceptions of school effectiveness variables. The PDE staff then employed the teacher survey in a state assessment program, the Educational Quality Assessment (EQA). The work of other state department of education agencies was reviewed when developing items for the teacher survey. One of the best sources of information was the Connecticut Department of Education, specifically, the work of William J. Gauthier.

Teacher perceptions of school effectiveness variables were used as a part of the EQA program to provide school administrators and teachers with comparative information. Both item data and variable (groups of several items) data were produced at the school level.

Another use of the teacher perception data was in predicting student achievement and attitudes based on multiple regression analysis, which is a commonly used methodology (Rowan, et. al., 1983). Performance on the EQA was predicted for each school based on a regression equation utilizing school condition variables which were selected through the regression process. The independent school condition variables included socioeconomic level of the school, education level and experience of the teachers, teacher perceptions of school effectiveness variables, student perceptions of the school, student perceptions of parental interest, population density along with others. See Appendix A for a complete list of the independent or school condition variables. A predicted score was obtained for each performance area in each school by multiplying the condition variable scores by the determined regression coefficients. This was then adjusted for scaling considerations by adding the intercept. The standard error of estimate was then added to and subtracted from the predicted score to obtain the predicted score range.

This study investigated the use of teacher perceptions of school effectiveness variables in the state assessment program. Also the study briefly reviewed the teacher survey instrument development.

Instrument Development

The school effectiveness research including that done in other states was reviewed by curriculum and testing staff of the Pennsylvania Department of Education. Items that had been used in the past on the Pennsylvania EQA program to survey teacher perceptions were considered. Through this process, a long list of over 200 items was compiled as candidates for use in the teacher survey. This list of potential items was refined by the Division of Educational Testing and Evaluation staff.

A group of Pennsylvania teachers reviewed the list of items to provide feedback on understandability by teacher colleagues. Through this process, items were deleted and in other cases revised. Next, the items were field-tested using a stratified, random sample of Pennsylvania school districts. Those items that worked best were selected for use in the teacher survey. Part of the selection process included a factor analysis which was employed to group items into variables. See Appendix B for the final list of teacher perceptions of school effectiveness items and variables along with the Pennsylvania percentage of teachers selecting each response option. A total of six variables were used with from four to nine items per variable. The six variables were: (1) teacher perception of building leadership, (2) teacher-initiated environment, (3) freedom from disruptions to instruction, (4) teacher perception of discipline, (5) teacher involvement in planning and (6) teacher perception of school climate.

Problem Statements

This study explored two questions suggested by the preceding discussion:

1. Do teacher perceptions of school effectiveness variables statistically relate to student achievement and student attitudes?

2. Were teacher perceptions of school effectiveness variables useful as predictors of student achievement and student attitudes when used with other school condition variables?

Sample

Data were available for 155 of the 500 Pennsylvania school districts from the 1985 EQA administration. This included 172 high schools, 180 junior high or middle schools and 412 elementary schools. A norm sample of schools was established for EQA work which was about 20 percent of the schools in the state. That norm sample was used in this study and it included 111 high schools, 138 junior high or middle schools and 361 elementary schools. It is possible that urban schools may have been insufficiently represented in the sample used for this study. It was noted some urban schools were included but schools from Philadelphia and Pittsburgh were not available.

Instrumentation

Pennsylvania Educational Quality Assessment measured students in the cognitive areas of reading, writing, analytical thinking, social studies, arts and humanities, science and technology, mathematics, environment, and health technology. Student attitudes were measured on the areas of student self-concept and health and safety practices. Students were tested in grades five, eight and eleven. Data were collected on a variety of school condition variables (see Appendix A) such as socioeconomic level of the school, experience in teaching, educational level of the teaching staff, financial effort of the school district, population density, teacher perception of school effectiveness variables, student perceptions of the school, student background along with others.

All EQA instruments were multiple choice in format. The grade five, eight and eleven data were employed in the study for the areas of reading, writing, mathematics, analytical thinking, social studies, arts and humanities, science and technology, environment, health knowledge, self-concept, and health and safety practices. For example, at all three grade levels the reading test was composed of forty-eight items that predominantly assessed inferential comprehension and literal comprehension. For writing skills, the test included sixty items at grades five and eleven, (sixty-four items at grade eight) measuring mechanics and usage, sentence sense, paragraph sense and style, tone and flavor. The sixty item math test (at all grades) measuring conceptual, computational and problem-solving levels contained items dealing with number systems, enumeration, notation, geometry, measurement, number patterns, relationships and other

topics. Information on the instruments can be found in the manual, Educational Quality Assessment Commentary (Pennsylvania Department of Education, 1985).

The reliability and validity of the eleven instruments used in the study were documented in the manual, Educational Quality Assessment 1985 Data (Pennsylvania Department of Education, 1985). Also, high correlations (.60 to .89) were found between the EQA basic skill areas and reading, writing and mathematics as measured by commercially produced achievement tests (Blust and Kohr, 1981). Those commercially produced achievement tests included in the study were the Stanford, Metropolitan, California, CTBS, Iowa and SRA.

Results

Pearson correlation coefficients were calculated between teacher perceptions of school effectiveness variables and student achievement as well as student attitudes. A total of three tables were produced for this part of the study with results for students of grade five found in Table 1, grade eight in Table 2 and grade eleven in Table 3. Only correlation coefficients significant at or beyond the .01 level were included in each of the three tables. All coefficients were calculated using school level data.

At grade five several of the teacher perception variables had a statistically significant relationship with the student achievement and student attitudes parts of the assessment. Please see Table 1 for the grade five coefficients. Of the teacher perception variables, (1) teacher initiated environment, (2) freedom from disruptions to instruction and (3) teacher perception of discipline

Table 1

Grade Five Correlation Coefficients Between Teacher Perceptions of School Effectiveness and Student Performance on Cognitive and Affective Measures

Measures	Building Leadership	Environmental Control	Disruptions	Discipline	Planning Involvement	School Climate
Reading Comprehension	.17	.30	.34	.38	.17	.16
Writing Skills	.17	.36	.37	.33	.21	.1[illegible]
Mathematics	.21	.33	.43	.38	.23	.16
Analytical Thinking	.16	.3[illegible]	.33	.32	.21	.18
Social Studies		.18	.26	.23		.15
Arts & Humanities	.24	.33	.38	.39	.27	.26
Science & Technology	.14	.19	.2[illegible]	.29		.14
Environment		.22	.30	.32	.14	
Health Knowledge	.17	.29	.35	.37	.21	.17
Self-Concept		.24	.22	.20	.17	.15
Health & Safety Practices		.22	.20	.14		.18

Note: Only coefficients significant at or beyond the .01 level were included ($r \geq .14$). 361 schools

were found to have statistically significant correlation coefficients with each of the student achievement and student attitude measures. Also, those three teacher perception variables had the highest correlations with most of the student areas surveyed. Out of the thirty-three coefficients for the three teacher perception variables a total of nineteen coefficients were at or over .30.

For grade eight students a few of the results were found to be different from grade five results. For example, none of the coefficients was significant for the student measure of health and safety practices and only one coefficient was statistically significant for the student measure of self-concept. In addition, the results for the six teacher perception variables were found to be different only slightly. That is, the correlation coefficients were found to be in the .20 to .40 range for the remaining eight student achievement variables (see Table 2).

Results for grade eleven were similar to grade five in that (1) teacher-initiated environment and (2) freedom from disruptions to instruction variables were strongest in their statistical link to student achievement. Unique to the grade eleven results was the finding that the teacher perceptions of the school climate variable was rather strong in its statistical relationship to the student achievement measures (see Table 3). Results for grade eleven were similar to grade eight in that no coefficients were statistically significant for the teacher perception variables and student health and safety practices. Also, as was the case for grade eight only one coefficient was statistically significant for the student self-concept assessment at grade eleven.

Table 2

Grade Eight Correlation Coefficients Between Teacher Perceptions of School Effectiveness and Student Performance on Cognitive and Affective Measures

Measures	Building Leadership	Environmental Control	Disruptions	Discipline	Planning Involvement	School Climate
Reading Comprehension	.27	.39	.37	.43	.33	.31
Writing Skills	.23	.37	.37	.39	.31	.26
Mathematics	.26	.37	.39	.37	.31	.30
Analytical Thinking	.29	.35	.36	.40	.34	.33
Social Studies	.27	.35	.33	.34	.31	.24
Arts & Humanities	.24	.37	.30	.38	.36	.27
Science & Technology	.28	.31	.36	.37	.30	.27
Environment	.32	.35	.38	.37	.35	.28
Self-Concept		.24				
Health & Safety Practices						

Note: Only coefficients significant at or beyond the .01 level were included ($r \geq .22$), n = 138 schools.

Table 3

Grade Eleven Correlation Coefficients Between Teacher Perceptions of School Effectiveness and Student Performance on Cognitive and Affective Measures

Measures	Building Leadership	Environmental Control	Disruptions	Discipline	Planning Involvement	School Climate
Reading Comprehension		.32	.31	.25	.32	.36
Writing Skills		.34	.27		.34	.36
Mathematics		.32	.37	.25	.27	.36
Analytical Thinking		.28	.30	.25	.28	.35
Social Studies		.32	.29			.29
Arts & Humanities	.25	.36	.30	.29	.39	.37
Science & Technology		.29	.35	.26		.37
Environment		.27	.33	.26		.28
Self-Concept			.27			
Health & Safety Practices						

Note: Only coefficients significant at or beyond the .01 level were included ($r \geq .25$), n = 111 schools.

Overall, the results for the three grade levels were the following: Teacher perceptions on the variables, (1) teacher-initiated environment, (2) freedom from disruptions to instruction, (3) teacher perception of discipline and (4) teacher perception of school climate were found to have the highest correlations with student achievement. The correlation coefficients were in most cases in the .20 to .40 range for the four variables noted. The statistical link between teacher perception variables and student self-concept along with student health and safety practices was rather weak. In general, higher correlation coefficients were found between student achievement variables and teacher perception variables.

Although the amount of variance explained was only from about 4 percent to 17 percent, the results were encouraging for the work in the state assessment program. Data were provided for school district leaders on several different school effectiveness variables based on teacher perceptions. A statistically significant relationship was found between student achievement and teacher perceptions of school effectiveness variables. School employees were provided with item data for each variable that should be of value in analyzing individual school results.

Next the statistical relationship among the teacher perceptions of school condition variables was examined. Pearson correlation coefficients were calculated and results for elementary teachers were placed in Table 4, intermediate or junior high teachers in Table 5 and senior high teachers in Table 6. Only coefficients which were statistically significant at or beyond the .01 level were included in the three tables.

For the elementary teacher (see Table 4) all correlation coefficients were statistically significant. The amount of variance explained varied from 16 percent to 61 percent reflecting a considerable difference in the relationship among variables. Thus, for some variables there was a strong statistical link to other teacher perception variables while in the other cases the statistical relationship was much weaker. In part, this finding was expected because in the past many teachers in a school were found to share similar perceptions of the school conditions. Also, those teacher perceptions had some uniformity across school conditions. This would contribute to having higher correlation coefficients among the variables. It was part of the instrument design to represent different school effectiveness variables through the teacher perceptions. Thus, the design was that not all correlation coefficients among the variables would be extremely high.

Intermediate or junior high teachers (see Table 5) and senior high teachers (see Table 6) results were similar to those for elementary teachers. Again some of the correlation coefficients were rather high while others were not.

In general, the correlation coefficients among teacher perception variables varied by a large amount. One of the strongest statistical relationships was found between teacher perceptions of freedom from disruption to instruction and teacher perception of discipline. The survey was designed to represent different school effectiveness variables; hence, some statistical link was expected and was found.

Table 4

Corrlation Coefficients Among Elementary Teacher Perceptions of School Effectiveness Variables

Measures	Building Leadership	Environmental Control	Disruptions	Discipline	Planning Involvement	School Climate
Environmental Control	.49					
Disruptions	.45	.64				
Discipline	.58	.53	.78			
Planning Involvement	.55	.53	.51	.52		
School Climate	.46	.40	.48	.47	.52	

Note: Only coefficients significant at or beyond the .01 level were included ($r \geq .14$), n = 361 schools.

Table 5

Corrlation Coefficients Among Intermediate or Junior High Teacher Perceptions of School Effectiveness Variables

Measures	Building Leadership	Environmental Control	Disruptions	Discipline	Planning Involvement	School Climate
Environmental Control	.63					
Disruptions	.73	.71				
Discipline	.76	.71	.80			
Planning Involvement	.70	.61	.60	.60		
School Climate	.51	.53	.54	.61	.61	

Note: Only coefficients significant at or beyond the .01 level were included ($r \geq .22$), $n = 138$ schools.

Table 6

Correlation Coefficients Among Senior High Teacher Perceptions of School Effectiveness Variables

Measures	Building Leadership	Environmental Control	Disruptions	Discipline	Planning Involvement	School Climate
Environmental Control	.39					
Disruptions	.63	.53				
Discipline	.72	.57	.73			
Planning Involvement	.61	.43	.47	.54		
School Climate	.51	.43	.55	.68	.53	

Note: Only coefficients significant at or beyond the .01 level were included ($r \geq .25$), n = 111 schools.

The number of school effectiveness variables (as measured through teacher perceptions) that entered a regression equation to predict student achievement and student attitudes was examined. It was noted that other variables were candidates for entry into the regression process along with the teacher perceptions of school effectiveness variables. Some of the other variables included school related variables such as those noted previously and listed within Appendix A. Across the three grade levels teacher perceptions of school effectiveness variables were found not to enter the regression equations as one of the first five predictors. Hence the teacher perception variables were of little value in predicting student performance at the school level when employed with non teacher variables.

Partial correlation coefficients were calculated between teacher perceptions of school effectiveness variables and selected student achievement measures while controlling for SES. Results for grade five were placed in Table 7. The highest partial correlation coefficients were for (1) freedom from disruptions to instruction and (2) teacher perceptions of discipline. Several statistically significant correlations were found for teacher-initiated environment and teacher involvement in planning functions. It appears that the teacher perceptions of school effectiveness variables were dependent slightly on the SES of the schools at the elementary school level.

At grade eight the partial correlation coefficients were highest for (1) freedom from disruptions from instruction and (2) teacher perception of discipline. In addition, several significant correlations were found for the (1) teacher-initiated environment, (2) teacher perceptions of building leadership, (3) teacher

Table 7

Grade Five Partial Correlation Coefficients Between Teacher Perceptions of School Effectiveness and Student Achievement Controlling for SES

Measures	Building Leadership	Environmental Control	Disruptions	Discipline	Planning Involvement	School Climate
Reading Comprehension		.21	.30	.33		
Writing Skills		.26	.33	.27	.15	
Mathematics	.14	.25	.39	.33	.18	
Analytical Thinking		.23	.28	.25	.15	
Science & Technology			.20	.23		

Note: Only coefficients significant at or beyond the .01 level were included ($r \geq .14$), n = 361 schools.

Table 8

Grade Eight Partial Correlation Coefficients Between Teacher Perceptions of School Effectiveness and Student Achievement Controlling for SES

Measures	Building Leadership	Environmental Control	Disruptions	Discipline	Planning Involvement	School Climate
Reading Comprehension	.23	.32	.33	.37	.27	.28
Writing Skills		.25	.33	.30		.22
Mathematics		.27	.35	.29		.26
Analytical Thinking	.23	.26	.32	.34	.27	.30
Science & Technology	.23	.24	.32	.30	.24	.24

Note: Only coefficients significant at or beyond the .01 level were included ($r \geq .22$), n = 138 schools.

involvement in planning functions and (4) teacher perception of school climate. See Table 8 for the grade eight data.

Results for grade eleven were placed in Table 9. Only two variables had significant partial correlation coefficients (1) freedom from disruptions to instruction and (2) teacher perceptions of school climate.

Overall, freedom from disruptions to instruction was the only variable with significant correlation coefficients across all grades. Teacher perceptions of school climate was found to have significant correlations at the two highest grades. At grade five and eight (1) teacher-initiated environment, (2) teacher perception of discipline and (3) teacher involvement in planning functions were found to have significant coefficients. In general, the teacher perceptions of school effectiveness variables were slightly dependent on school SES at grades five and eight. For grade eleven the influence of SES was much greater as reflected by the partial correlations.

Discussion

First, Pearson correlation coefficients were calculated between the teacher perceptions of school effectiveness variables and both student achievement and student attitudes. Based on the results significant but not extremely high correlations were found with the school effectiveness variables. In other words, for a state assessment program there was some success in representing school effectiveness variables through teacher perceptions. The correlation coefficients did indicate that school effectiveness variables represented in

Table 9

Grade Eleven Partial Correlation Coefficients Between Teacher Perceptions of School Effectiveness and Student Achievement Controlling for SES

Measures	Building Leadership	Environmental Control	Disruptions	Discipline	Planning Involvement	School Climate
Reading Comprehension			.27			.31
Writing Skills						.30
Mathematics			.33			.31
Analytical Thinking			.25			.30
Science & Technology			.30			.30

Note: Only coefficients significant at or beyond the .01 level were included ($r \geq .25$), n = 111 schools.

the Pennsylvania assessment had significant statistical relationships with student achievement but little relationship to the student attitudes assessed. The study did indicate that teacher perceptions may be of value in examining school effectiveness variables. In addition, teacher perceptions on individual items may be of value in analyzing school strengths and weaknesses for school employees and administrators. In order to provide an analysis of the item level data, state and school data were provided in the school reports produced for each school.

Second, the statistical relationship among the teacher perceptions of school effectiveness variables was examined using Pearson correlations. Overall, there was considerable variation in the correlation coefficients among the school effectiveness variables. The strongest statistical relationship was between teacher perceptions of freedom from disruptions to instruction and how discipline is handled in the school. From a technical view for the regression analysis it may have been better had the coefficients among these variables not been as high. The higher correlation coefficient did indicate a rather strong statistical relationship between some of the school effectiveness variables.

Third, the number of variables based on teacher perception of school effectiveness that entered the regression equation to predict student achievement and student attitudes was examined. Other school condition variables were found to be better predictors of student performance. That is, school condition variables based on a school background, student background, the community or student perceptions were better predictors than teacher perceptions of school effectiveness. The question, would altering the teacher perception of school effectiveness variables make them better predictors, remains unanswered.

Fourth, partial correlation coefficients were calculated between teacher perceptions of school effectiveness variables and student achievement while controlling for SES. Many of the partial correlation coefficients were statistically significant, with coefficients ranging from .14 to .39. Based on the data, school effectiveness variables were not greatly influenced by school SES at grades five and eight. The influence of SES at grade eleven was much greater than at the other two grade levels.

For the Pennsylvania assessment program, teacher perceptions of school effectiveness variables had some value. The correlation coefficients illustrated a statistical link between school effectiveness variables and student achievement. This should provide some evidence for administrators and teachers that the school effectiveness variable data should be examined and considered an indication of the school strengths and weaknesses. Hence, this part of the state assessment work was rather successful. Employing the teacher perceptions of school effectiveness variables as predictors of student achievement through regression was not productive. In their present form these variables have little value as predictors when not used independently. It would appear there is a need to continue the efforts on refining the teacher perception variables.

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Appendix A

School Climate Variables

Appendix A

CONDITION VARIABLES

Variable/Title	Measure	Weighting	Description
Data collected from PDE records			
1. GRENROLL Grade enrollment	The number of students participating in the assessment was read from EQA computer records.	The number of students tested in the participating grade	A higher number indicates a larger grade enrollment.
2. PCTLI Percentage of low income students	The percentage of students from low income families attending the school was obtained from PDE Chapter 1 files.	Expressed to the nearest hundredth of a percent	A higher percentage indicates that the school has a higher percentage of students from low income families.
3. TUITION Tuition rate	The tuition rate established for the school district was obtained from PDE records.	Expressed to the nearest whole dollar for the previous school year	A higher number indicates that the district reported spending more money per student.
Data collected from teacher questionnaires			
4. TSATPAR Satisfaction with relationships with parents	The teachers reported how satisfied they are with their relationships with parents and parent groups.	3 = Very satisfied 2 = Somewhat satisfied 1 = Somewhat dissatisfied 0 = Very dissatisfied	A higher score indicates that the teachers have greater satisfaction with their relationships with parents and parent groups.
5. TEDUC Teacher education	The teachers reported the level of formal education they have attained.	4 = Doctor's degree 3 = Master's degree plus 1 year 2 = Master's degree or equivalency 1 = Bachelor's degree 0 = No degree	A higher score indicates that the school's instructional staff reported higher levels of formal education.
6. TPARCONF Parent attendance at parent-teacher conferences (Grade 5)	The teachers reported the percentages of students' parents who attend scheduled parent-teacher conferences.	4 = 81-100 percent 3 = 61-80 percent 2 = 41-60 percent 1 = 21-40 percent 0 = 0-20 percent	A higher score indicates that the teachers reported a higher percentage of students' parents attend scheduled parent-teacher conferences.
7. SUPVBLDG Supervision of building (Grade 5)	The teachers indicated the position title of the person in charge of the building in which they teach and the number of buildings that person supervises.	1 = Principal of a single building 0 = All others	A score of 1 indicates that the building is supervised by a principal who is responsible for only that building; a score of 0 indicates the building is supervised by a person other than such a principal.

8. CLSIZE Average class size	The teachers reported their average class size excluding supervisory duties such as study hall.	Expressed as average class size for all teachers	A higher number indicates a larger average class size.
9. TOBSERVE Number of classroom observations	The teachers indicated the number of formal classroom observations made of their instruction each year.	4 = Four or more 3 = Three 2 = Two 1 = One 0 = None	A higher score indicates that the teachers reported having more classroom observations each year.
10. LEADER Teacher perception of building leadership	The teachers indicated the degree to which they agreed with eight positive statements about the leadership in their school.	For positively worded statements: 4 = Strongly Agree 3 = Mostly Agree 2 = Neither Agree nor Disagree 1 = Mostly Disagree 0 = Strongly Disagree or 4 = Always 3 = Almost Always 2 = Frequently 1 = Occasionally 0 = Rarely or Never For negatively worded statements, the scoring is reversed.	A higher score indicates that the teachers are more satisfied with the leadership in their school building.
11. TCHRINIT Teacher-initiated environment	The teachers indicated the degree to which they agreed with nine positive statements about their initiative in and control of school environment factors.		A higher score indicates that the teachers feel they have more control over positive aspects of the school atmosphere.
12. DISRUPTN Freedom from disruptions to instruction	The teachers indicated the degree to which they agreed with two positive and six negative statements about disruptions to classroom instruction.		A higher score indicates that the teachers reported fewer disruptions to classroom instruction.
13. DISCIPLN Teacher perception of discipline	The teachers indicated the degree to which they agreed with six positive and two negative statements about their perception of discipline in the school.		A higher score indicates that the teachers perceive that discipline is handled better in the school.
14. PLANNING Teacher involvement in planning functions	The teachers indicated the degree to which they agreed with seven positive statements about their involvement in various types of planning activities for the school.		A higher score indicates that the teachers feel that they are more highly involved in planning activities which take place in the school.
15. SCHLCLIM Teacher perception of school climate	The teachers indicated the degree to which they agreed with one negative and three positive statements about the general environment or climate of the school.		A higher score indicates that the teachers feel that the school has a better working environment.

Data collected from student questionnaires

16. PCTGIRLS Percentage of girls	The students indicated either male (or boy) or female (or girl).	Expressed as a percentage	A higher percentage indicates that the school has a greater proportion of girls in the participating grade.
17. PAREDUC Parental education	The higher level of the following was used: (1) The students reported the highest levels of formal education attained by their fathers or male guardians. (2) The students reported the highest levels of formal education attained by their mothers or female guardians.	4 = Advanced college degree 3 = College graduate 2 = Some college, vocational, technical, business school after high school 1 = High school graduate 0 = Not a high school graduate	A higher score indicates that the school draws students from homes in which parents have higher levels of formal education.
18. RESIDE Population density of residential community	The students reported (with the help of the examiner if necessary) the types of communities in which they were living.	7 = In Philadelphia or Pittsburgh 6 = Inside a large city (100,000 to 500,000 people) 5 = Inside a medium size city (10,000 to 100,000 people) 4 = In a suburb of Philadelphia or Pittsburgh 3 = In a suburb of a large city 2 = In a suburb of a medium size city 1 = In a small town (less than 10,000 people) that is not a suburb 0 = In the open country or in a farming community	A higher score indicates that the students reside in areas of more dense population.
19. PCTWHITE Percentage of white students	The students reported which best described them: Black, White, Hispanic or Other (Oriental, Native American, etc.)	Expressed as a percentage	A higher percentage indicates that the school has a greater proportion of white students in the participating grade.
20. MOBILITY Frequency of residence/school change	The students reported the number of different school buildings they attended within the past three years because they changed residence.	4 = 5 or more school buildings 3 = 4 school buildings 2 = 3 school buildings 1 = 2 school buildings 0 = I have not moved within the past three years.	A higher score indicates that the students have changed residence and schools more often in the past three years.
21. SPARINT Student perception of parental interest in school	The students reported their opinions on two items: (1) My parents enjoy hearing about school. (2) My parents feel the school is doing a good job.	3 = Almost always 2 = Usually 1 = Sometimes 0 = Almost never	A higher score indicates that the students feel that their parents have a greater interest in school and a higher opinion of the job done by the school.

22. TVWATCH Student time spent watching television	The students reported their estimates of time usually spent watching television from the time they get home from school until they go to bed.	5 = About six hours (or more) 4 = About five hours 3 = About four hours 2 = About three hours 1 = About two hours 0 = About one hour (or less)	A higher score indicates that the students report watching more television on school nights.
23. PAREXP Student perception of parental expectations (Grades 8,11)	The students reported their perceptions of how much schooling their parents or guardians expected them to complete.	4 = Advanced college degree 3 = Graduation from a four-year college 2 = Two-year college or other post-high school training 1 = Graduation from high school 0 = Quit high school before graduating	A higher score indicates that the students feel that their parents expect them to achieve higher educational levels.
24. EDEXPECT Student educational expectations (Grades 8,11)	The students reported how much schooling they expect to complete.	4 = Advanced college degree 3 = Graduation from a four-year college 2 = Two year college or other post-high school training 1 = Graduation from high school 0 = Quit high school before graduating	A higher score indicates that the students have higher educational expectations.
25. HOMEREAD Reading material in the home	The students reported the approximate numbers of magazines and books in the home.	Magazines (per month): 0 = None 1 = 1 or 2 2 = 3 or 4 3 = 5 or more Books: 0 = 0 - 24 1 = 25 - 99 2 = 100 - 249 3 = 250 or more	A higher score indicates that the students report more magazines and books in their homes.
26. TIMEREAD Time spent reading at home	The students reported how much time each day they spend reading at home.	5 = Three hours (or more) 4 = Two hours 3 = One hour 2 = 30 minutes 1 = 15 minutes 0 = None	A higher score indicates that the students report spending more time reading at home.
27. WRITEPAR Frequency of writing assignments	The students reported how often they are required to write a paragraph or more as school assignments.	4 = At least once a day 3 = At least once a week 2 = About once a month 1 = Only once or twice a year 0 = Never	A higher score indicates that the students report being required to write at least a paragraph more often.
28. PLANSWRK Perceived ability to complete schoolwork (Grade 5)	The students reported their perceptions of their ability to plan and carry out school work.	4 = Very good 3 = Good 2 = Satisfactory 1 = Fair 0 = Poor	A higher score indicates that the students perceive they have greater ability to plan and carry out schoolwork.
29. STUDYHAB Perceived quality of study habits (Grades 8,11)	The students reported their perceptions of the quality of their study habits.	4 = Excellent 3 = Good 2 = Satisfactory 1 = Fair 0 = Poor	A higher score indicates that the students perceive they have higher quality study habits.

30. TIMEMATH Time spent on mathematics assignments	The students reported the approximate amounts of time each day outside of math class they spend doing math assignments.	4 = Two hours (or more) 3 = One hour 2 = 30 minutes 1 = 15 minutes 0 = None	A higher score indicates that the students reported spending more time outside of class on math assignments.
31. TESTFREQ Frequency of tests or quizzes	The students reported how often they have a test or quiz in most of their classes.	4 = More than once a week 3 = Once a week 2 = Once every two weeks 1 = Once every three weeks 0 = Once a month (or less)	A higher score indicates that the students reported having more tests or quizzes in most of their classes.
32. TESTRETN Timely return of tests (Grades 8,11)	The students reported in how many classes the teachers return tests soon after they take them.	4 = All of my classes 3 = Most of my classes 2 = Some of my classes 1 = Few of my classes 0 = None of my classes	A higher score indicates that students reported that teachers return tests soon after administering them in more of their classes.
33. CLDISCIP Student perception of classroom discipline (Grades 8,11)	The students reported their perceptions of discipline as a problem in the classroom.	3 = Never a problem 2 = Sometimes a problem 1 = Usually a problem 0 = Almost always a problem	A higher score indicates that the students perceive their classrooms as more free of discipline problems.
34. PCTACAD Percentage of academic/college prep students (Grade 11)	The students indicated which terms best described their present high school programs: Academic or college preparatory; General; Vocational or technical; Business or commercial	Expressed as a percentage	A higher percentage indicates that the school has a greater percentage of students in an academic or college preparatory program.
35. HRSWORK Hours of employment per week (Grade 11)	The students reported how many hours a week they work to earn money.	4 = More than 20 hours 3 = 16 to 20 hours 2 = More than 8, but less than 16 hours 1 = Some, up to 8 hours 0 = None	A higher score indicates that students reported they work more hours a week to earn money.
36. MATHINST Perception of direct instruction in mathematics (Grades 8,11)	The students taking the class reported about how much time is usually spent on lecture and classroom discussion in mathematics class.	4 = More than 30 minutes per class period 3 = 21-30 minutes per class period 2 = 10-20 minutes per class period 1 = Less than 10 minutes per class period	A higher score indicates that the students reported receiving more direct mathematics instruction through lecture and/or classroom discussion.
37. ENGLINST Perception of direct instruction in English (Grades 8,11)	The students taking the class reported about how much time is usually spent on lecture and classroom discussion in English (literature) class.		A higher score indicates that the students reported receiving more direct English (literature) instruction through lecture and/or classroom discussion.

38. SCIINST Perception of direct instruction in science (Grades 8,11)	The students taking the class reported about how much time is usually spent on lecture and classroom discussion in science class.	4 = More than 30 minutes per class period 3 = 21-30 minutes per class period 2 = 10-20 minutes per class period 1 = Less than 10 minutes per class period	A higher score indicates that the students reported receiving more direct science instruction through lecture and/or classroom discussion.
39. SOCINST Perception of direct instruction in social studies (Grades 8,11)	The students taking the class reported about how much time is usually spent on lecture and classroom discussion in social studies class.		A higher score indicates that the students reported receiving more direct social studies instruction through lecture and/or classroom discussion.
40. PCTMATH Percentage of students taking mathematics (Grade 11)	The percentage of students reporting mathematics class activity.	Expressed as a percentage.	A higher percentage indicates that more students reported that they have mathematics class.
41. PCTENGL Percentage of students taking English (Grade 11)	The percentage of students reporting English (literature) class activity.	Expressed as a percentage.	A higher percentage indicates that more students reported that they have English (literature) class.
42. PCTSCI Percentage of students taking science (Grade 11)	The percentage of students reporting science class activity.	Expressed as a percentage.	A higher percentage indicates that more students reported that they have science class.
43. PCTSOC Percentage of students taking social studies (Grade 11)	The percentage of students reporting social studies class activity.	Expressed as a percentage.	A higher percentage indicates that more students reported that they have social studies class.
44. INTSCHL Interest in school	The students reported their agreement with questions or statements about their interest in and satisfaction with their school situation. Grade 5: 12 positive questions beginning with "How do you feel...?" Grade 8: 19 positively-worded and 9 negatively-worded statements Grade 11: 22 positively-worded and 6 negatively-worded statements	Grade 5: 3 = Very happy 2 = A little happy 1 = A little unhappy 0 = Very unhappy For positively worded statements at Grades 8 and 11: 3 = Strongly agree 2 = Mostly agree 1 = Mostly disagree 0 = Strongly disagree For negatively worded statements, the scoring is reversed.	A higher score indicates that the students are more interested in and satisfied with their school situation.

Appendix B

Teacher Perceptions of School Effectiveness Variables

Appendix B
TEACHER PERCEPTIONS OF SCHOOL EFFECTIVENESS VARIABLES
PENNSYLVANIA·PERCENTAGES BY RESPONSE OPTION

LEADER Teacher perception of building leadersip	Strongly Agree	Mostly Agree	Neither	Mostly Disagree	Strongly Disagree
Teachers and students respect the principal.	26	47	12	10	5
The principal is knowledgeable about teaching techniques.	35	43	13	6	2
The principal conveys to the community a positive view of the school and its program, staff and students.	48	36	11	4	2

	Always	Almost Always	Fre-quently	Occasion-ally	Rarely/ Never
A positive feeling permeates the school.	5	39	28	21	7
The principal runs effective meetings, that is, he/she has a clear agenda, limits discussion to relevant topics, and adheres to the time frame.	32	37	15	11	5
The principal encourages me to solve my own work problems but is available to advise me if needed.	34	39	15	9	3
The teachers feel this school is run in an orderly fashion without being overly restrictive.	19	42	21	13	6
The principal talks with us frankly and openly.	36	31	15	12	6

TCHRINIT Teacher-initiated environment	Strongly Agree	Mostly Agree	Neither	Mostly Disagree	Strongly Disagree
Teachers in this school hold consistently high expectations for all students.	15	55	20	9	2
Teachers in this school seek better ways of teaching and learning.	20	61	14	5	1
Teachers in this school are proud to be teachers.	15	49	23	11	2
Teachers in this school are knowledgeable about their subject areas.	49	46	4	1	0

	Always	Almost Always	Fre-quently	Occasion-ally	Rarely/ Never
Teachers handle general student discipline in a reasonable way.	19	63	15	3	0
Classroom atmosphere in this school is conducive to learning.	15	59	20	5	1
Teachers praise students for good performance.	21	58	19	2	0
Teachers are cooperative and supportive of each other.	18	52	20	8	1
Teachers treat students with respect in this school.	16	61	19	4	0

DISRUPTN Freedom from disruptions to instruction	Strongly Agree	Mostly Agree	Neither	Mostly Disagree	Strongly Disagree
Students in this school are interested in learning.	3	44	28	21	4
Student attendance needs improvement.	14	27	26	25	7
Teacher attendance needs improvement.	2	10	29	34	25
People in this school solve problems rather than just talk about them.	6	38	28	21	7
Announcements given through the public address system are disruptive to my classroom teaching.	17	18	22	27	17
There are student-initiated disruptions of my classes.	8	23	19	32	18

	Always	Almost Always	Frequently	Occasionally	Rarely/ Never
My instruction is disrupted by students being excused from class for various activities.	6	9	27	45	13
I have to spend too much time on noninstructional duties.	8	12	28	36	15

DISCIPLN Teacher perception of discipline	Strongly Agree	Mostly Agree	Neither	Mostly Disagree	Strongly Disagree
Students are held responsible for the consequences of their behavior.	21	48	11	15	5
Too much time is spent on discipline.	6	14	24	36	20
Too little support is provided by administrators on discipline.	8	15	18	36	24

	Always	Almost Always	Frequently	Occasionally	Rarely/ Never
Parents provide support to teachers on discipline.	1	19	34	35	11
Students treat teachers with respect.	2	43	33	18	4
Students are well-behaved in this school.	2	47	36	14	2
Students obey the school's rules.	1	46	38	13	2
Students complete assigned homework before coming to class.	1	32	43	21	3

PLANNING Teacher involvement in planning functions	Strongly Agree	Mostly Agree	Neither	Mostly Disagree	Strongly Disagree
Assessment information is used by the school to set improvement priorities.	11	39	34	11	5
Teachers know the school goals established for this year.	19	47	20	10	3
Teachers have open channels of communication with district administrators.	18	42	17	14	9

	Always	Almost Always	Fre-quently	Occasion-ally	Rarely/ Never
Teachers, students and parents are given opportunities to provide input into the curriculum development process.	8	24	31	28	10
Released time and financial support for in-service training are provided for teachers.	11	24	25	26	13
During parent-teacher conferences there is a focus on factors directly related to student achievement and basic skill mastery.	13	42	30	10	4
I attend conferences related to the areas I teach.	9	14	23	34	20

SCHLCLIM Teacher perception of school climate	Strongly Agree	Mostly Agree	Neither	Mostly Disagree	Strongly Disagree
The physical facilities of this school are generally unpleasant and poorly maintained.	7	9	12	34	38

	Always	Almost Always	Fre-quently	Occasion-ally	Rarely/ Never
Adequate materials and supplies necessary for instruction are available to me.	22	45	20	11	3
This school is a safe and secure place to work.	39	44	11	5	1
I look forward to coming to work.	18	51	19	10	4