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The Knoxville City Schools Proficiency Project: A Summary Analysis of Three Years and Year-Three Results

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I am submitting herewith a thesis written by Kathleen S. Puckett entitled "The Knoxville City Schools Proficiency Project: A Summary Analysis of Three Years and Year-Three Results." I have examined the final electronic copy of this thesis for form and content and recommend that it be accepted in partial fulfillment of the requirements for the degree of Specialist in Education, with a major in Educational Administration.

C. M. Achilles, Major Professor

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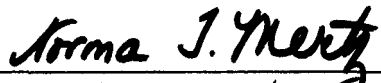

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Signature Kathleen J. Ruckett

Date July 20, 1988

THE KNOXVILLE CITY SCHOOLS PROFICIENCY PROJECT:
A SUMMARY AND ANALYSIS OF THREE YEARS
AND YEAR-THREE RESULTS

A Thesis
Presented for the
Specialist in Education
Degree
The University of Tennessee, Knoxville

Kathleen S. Puckett

August 1988

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The author wishes to dedicate this study to the memory of Anne Hartsell, Proficiency Teacher at Rule High School and Beardsley Middle School in Knoxville, Tennessee, whose untimely death during the last year of the project was a great loss for the students and for the educational profession.

ABSTRACT

The Knoxville City Schools (KCS) Proficiency Project was designed to help inner-city high school pupils improve their scores on the state proficiency test. Grade-nine pupils in lower achieving project high schools and grade-eight students from the corresponding middle schools were given intense treatment over a three-year period. Proficiency test scores for grade-nine students were analyzed each year and were compared to results in control high schools and to the scores of the total city high school population.

Project results showed steady, sustained improvement. By the end of year three, the average percent of pupils passing the state proficiency test in the three target schools approximated the total city average percent passing.

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CHAPTER I

INTRODUCTION

The early 1980s was a period of intense interest in education reform and improvement in the United States. State legislatures, State Boards of Education, Governors, local school personnel and the general public all encouraged changes in education. Neither the state of Tennessee nor the Knoxville (TN) City Schools (KCS) was exempt from the reform emphasis. As part of the school improvement effort, the state of Tennessee revised and strengthened requirements for graduation. The new requirements now include the successful completion of a proficiency test, designed as a minimum measure of students' basic academic skills.

In the Knoxville City Schools (KCS), results of the Tennessee State Proficiency Test (1982-1985) indicated that pupils in certain high schools had shown consistently poor performance in the percentage of students passing these minimum requirements upon the test's initial administration in the ninth-grade year. Since the inception of a mandated state proficiency test in 1982, pupil scores in three Knoxville City high schools in particular (Austin East, Fulton, and Rule) not only ranked last or near last of the eight city high schools, but the actual percent of

grade-nine pupils passing in those schools was also unacceptably low. In addition to the poor academic performances of their pupils, these schools represent the most impoverished areas of the city, reinforcing the general notion of a positive correlation between lower socioeconomic status and lower student achievement on basic skills tests. Thus, the stereotype popularized by Coleman et al. (1966) seemed to exist in the Knoxville City Schools. Current research on effective schools, however, contends that it is possible for a school to reduce or minimize the effects of lower socioeconomic status on student achievement of the required basic skills.

This current study (1) describes a three year attempt by the Knoxville City Schools to raise the percent of students passing the State Proficiency Test in these selected schools through the use of elements of effective schools research, and (2) analyzes the results of the third, and final, year of the project.

The Knoxville City Schools (KCS) Proficiency Project was the outgrowth of a task force appointed by the Superintendent in the spring of 1984. The task force was given a dual responsibility: (1) review the present (up to 1984) techniques used for preparing Knoxville City students in test taking and remediating processes, and (2) develop a model for remediation based on the premise that socio-

economic status should not be a major predictor of student achievement outcomes in the basic skills.

The task force focused on the three high schools with the lowest percent passing the proficiency test--Austin East, Fulton, and Rule--as target schools for the project and for assessment of their model. These three high schools generally accept students from the eighth grades at three middle schools: Beardsley, Christenberry and Vine. These six schools became the core of the KCS Proficiency Project, 1984-87.

Beginning in the fall of 1984, the work of the Proficiency Project began. Three experienced teachers were assigned over and above the regular staff assignments; each was given a pair of schools--one high school and the corresponding middle school. A project director was assigned. The Knoxville City Schools Proficiency Project (KCSPP) operated for three school years: 1984-85, 1985-86, 1986-87. The project ended on June 30, 1987.

Project History

Background

The initiation of the Proficiency Project in 1984 was a reflection of growing concerns of administrators, teachers, and parents over student achievement in school, especially

achievement as measured by basic skills test scores. During this particular time frame, political, media, social, and education pressures all focused on the need to improve the basic skills of the students in certain "inner city" schools. The media in Knoxville had been publishing school-by-school comparisons of the proficiency test scores for each of the KCS eight high schools since 1982, as well as similar results for the Knox County Schools. These newspaper articles, which gave a comparative rank to each school based on the percentage of students passing both language arts (LA) and math (M) sections of the Tennessee State Proficiency test, showed that after three academic years of reporting, schools in the inner city area always remained last in rank and had an unacceptably low percentage of students passing the test. More particularly, these lower achieving schools were located in certain political districts, and pressures from the elected officials in those areas began to build, demanding that the schools deal with the problems in these districts. From the education community, a positive correlation between socioeconomic levels and achievement of students as reported in the 1984 Appalachian Educational Laboratory study of the Knoxville City Schools caused administrators to look seriously at the effective schools research as a means of reversing this trend (Appalachian Educational Laboratory, 1984). A chronology of the development of the project is as follows.

The Superintendent's Task Force

The KCS Superintendent appointed a task force in the spring of 1984. He charged the task force with the responsibility of developing a plan to bring the average percent of pupils passing the Tennessee Proficiency Test in Austin-East, Fulton, and Rule High Schools into line with the city average. Because the proficiency test was administered to ninth graders in the early spring, prior to a full academic year in the high school, the three middle schools which were "feeder schools" into these high schools would also be targeted. Consistent with the findings of the Appalachian Educational Laboratory study, these six schools continued to serve more students of lower socioeconomic status (SES) levels than other schools in the city. Actual student achievement in the KCS appeared to be a reflection of the predictions by Coleman et al. (1966) made almost 20 years previously of the relationship between pupil socioeconomic status (SES) and achievement. A more recent strand of education ideology and research, variously called the "Effective Schools" work and the "School Improvement Projects" (Clark, Lotto, Astuto, 1984) was emphasizing that "effective" schools can minimize the influences of a poor home background.

The task force consisted of the Principals from these six schools; Supervisors of Reading and Mathematics;

Directors of Elementary, Middle and Secondary Education; the Coordinator of Guidance and Testing and a Project Director. The strong relationships between achievement and family income that existed prompted the task force to contemplate interventions that would ensure that SES would become a less strong predictor of student achievement outcomes in the basic skill areas measured by the LA and M portions of the State Proficiency Test than seemed to be the case. In order to achieve this goal, a model was developed which included the following:

1. Identify the cognitive prerequisites for each new learning task. This identification process would allow the students to become more positive about their abilities to learn the subject if the intermediate steps were carefully outlined.
2. Provide quality, up-to-date materials with concrete examples that related to the personal lives of the students.
3. Develop a peer tutoring student support system, utilizing available school and community resources.
4. Develop a special studies skills program.
5. Increase the amount of group project work in all subject areas.
6. Institute "Precision Teaching" in the Basic Skills areas.

7. Articulate and explain to the parent(s) and/or legal guardians the level of home support necessary for student success, including work habits of the family, academic guidance and support, language development, and academic aspirations and expectations.

Identification of Resources

The task force then identified the personnel, educational, and community resources needed to implement this model. The minimal personnel resources determined to be necessary were three proficiency teachers and a project director. These teachers were housed in each of the middle school sites and were given specific responsibilities to the project rather than general classroom duties. Project teacher selection criteria included the ability to work with other classroom teachers; competence in identifying and using appropriate materials; skill in diagnosing reading and mathematics problems, grouping, interpreting test data; management and organizational skills; leadership traits; ability to communicate; creativity; energy, and experience.

Educational resources identified were appropriate materials for remediation and reinforcement, including hands-on student materials, expertise of other educators, and community based personnel for teacher training.

Community resources were located. These resources included inter-agency and interdepartmental cooperation and coordination within the educational community, as well as resources from outside businesses and agencies.

Finally, the superintendent sought the assistance of an external agency to design and conduct an evaluation of project results. The Bureau of Educational Research and Services, College of Education, University of Tennessee, Knoxville assumed the evaluation role.

Implementation

The implementation phase of the project began with the development and analysis of appropriate pretest data for selection of students in need of remediation. The language arts and mathematics basic skills pretest results at the middle school level, and the preproficiency test results at the high school level determined student eligibility and need for additional help. The proficiency teachers coordinated this information with the classroom teachers and made recommendations for student instructional groupings and identification of specific instructional objectives.

A staff orientation plan followed. The superintendent met with the principals from the six schools to explain the project and to enlist their support. Support for the success of the project from the top administrative levels

was made clear, and the principals were charged with the responsibility for arranging conditions within their respective schools to assure project success. The task force and proficiency teachers met jointly to explain job descriptions, develop mutual goals and objectives, and agree on a plan of action.

Follow up meetings were held in the individual schools with the proficiency teachers, the Chapter I teachers, and the principal. Further staff development meetings then began at the individual school sites. As an outgrowth of these meeting, all eighth grade teachers were given copies of the ninth grade proficiency objectives. Each proficiency teacher established a proficiency center in each target school to house resource materials for students and teachers and to serve as a site for individual student tutoring.

Proficiency teachers and the project director solicited the aide of identified resources. Community volunteers, parent groups, community organizations, University of Tennessee students, and businesses were added to the list of available help and reinforcement. As momentum for community support grew, more and more available help was developed. Churches and other community groups set up tutoring programs. A group of engineers from the Tennessee Valley Authority in Knoxville began tutoring at a community enter two nights per week. A sorority began Saturday tutoring and

gave test-taking tips before major tests. One of the most successful aspects of the project evolved when Roddy Manufacturing Company, the local distributor of Coca-Cola products, adopted the Proficiency Project through the auspices of the Adopt-A-School program. Twenty-four other businesses supported the proficiency project.

Proficiency Project Processes

The reported activities of the proficiency teachers varied based on the individual needs of each school; most activities, however, can be classified into three general categories: (1) teacher support, (2) student support, and (3) actualization of home and community resources. The activities so categorized are consistent with the original seven-step model developed by the task force. A partial listing of the activities within each category is as follows:

1. Teacher support

- a. Identified student deficit skills based on pretest data, and organized this information to facilitate appropriate instructional groupings.
- b. Provided a model for classroom teachers by teaching specific skill units to selected classes within the teacher's classroom.

- c. Assisted teachers in record keeping procedures necessary for close monitoring of skills mastered.
- d. Secured, developed, and administered proficiency materials that were used on a school-wide basis in an interdisciplinary manner, involving every subject in the application of the basic skills.
- e. Provided teacher conferencing and observation on an individual basis.
- f. Coordinated Proficiency Project efforts with support personnel such as basic skills teachers, Chapter 1 teachers, Central Office Personnel, and Principals, and acted as a liaison between these services and the regular instructional programs.

2. Student support

- a. Provided individual student assessment or tutoring as needed.
- b. Developed peer tutoring programs within the schools.
- c. Developed student motivation and incentive programs for achievement towards specified academic goals.

- d. Served as a liaison with existing student organizations, in many cases revitalizing or reinstating student organizations which had become victims of student apathy.
3. Actualization of home and community resources
- a. Used Adopt-A-School sponsors as a resource for student incentive and teacher appreciation programs.
 - b. Developed parent, community, and political support by communicating with the appropriate representative organizations.
 - c. Used community and business volunteers for student tutoring projects.
 - d. Procured surplus materials from business and community resources to use in the project.

Evaluation

The external evaluator, the Bureau of Educational Research and Services, established a multi-level project evaluation procedure. The evaluation included:

- 1. Detailed analysis of student achievement outcomes as measured by performance on the Tennessee State Proficiency Test.
- 2. Written summative reports of project activities by the Proficiency Teachers.

3. Teacher perceptions of project effectiveness as obtained through a pre and post questionnaire. Project evaluation data were reported at the end of each academic year from 1985 through 1987, and a three-year cumulative report was completed.

Definition of Terms

Effective School

Various researchers and theorists have identified the "elements" or characteristics of an effective school. In general, the work of Edmonds (1979) provides guidelines for the definition used here.

An effective school is one in which socioeconomic level, sex, and race considerations show no significant correlation to the basic skills achievement levels of the student body. Effective schools are usually characterized as having (1) strong administrative leadership, (2) basic skills focus, (3) climate conducive to learning, (4) high expectations, and (5) monitoring of pupil progress.

Proficiency Project

The Proficiency Project is a three year attempt by the Knoxville City Schools (KCS) to positively effect the basic skills achievement, as measured by the Tennessee Proficiency

Test, in three targeted high schools: Austin-East, Fulton, and Rule. The project employed three Proficiency Teachers and a project director. The Proficiency Project emphasized the effective schools correlates of basic skills focus and monitoring of pupil progress. Other elements of effective schools research were used to a lesser degree in this design.

Proficiency Teacher

The proficiency teacher is one of three teachers employed by the KCS to work specifically with the Proficiency Project. Proficiency teachers were not given regular classroom duties, but were assigned to work in one of the targeted high schools and in the middle school feeding in to that high school.

Socioeconomic Status

For the purposes of this study, the socioeconomic status (SES) is measured by students eligibility to receive free or reduced-price lunch. Students so designated are classified as low SES.

Tennessee Proficiency Test

The Tennessee Proficiency Test is a criterion-referenced test of basic skills published by the Tennessee

State Department of Education. Scores from this test will show percent of items passed by the pupil from the language arts (LA) and mathematics (M) sections. Passing 70 percent of the total objectives for each section (LA and M) is required before a student becomes eligible to receive a high school diploma. An objective is considered passed when 3 of the 4 test items presented for each objective are answered correctly.

Importance of the Study

In 1982, Ronald Edmonds said that the effective school "need not bring all students to identical levels of mastery, but it must bring an equal percentage of its highest and lowest social class to minimum mastery" (Edmonds, 1982, p. 4). Minimum mastery, measured in this study by pupil performance on the Tennessee Proficiency Test, had in the KCS been disproportionately achieved by more students of higher SES than by students who were not so economically advantaged. The KCS were not alone in this problem; Edmonds reported that most schools with student populations from lower SES had similar achievement records (Edmonds, 1979).

Americans, however, continue to expect the public schools to provide quality equal educational opportunity for all students (Lezotte and Bancroft, 1985). While this goal

of an equal and a quality education for all children is indeed the intended outcome, the reality is short of being fulfilled in many areas. Family and sociological impacts on the academic achievement levels of children have long been documented in the research.

Current trends in effective schools research show that it is possible to reverse the effects of negative family and sociological impact on student achievement in the basic skills, but these efforts require the appropriate mixture of at least five correlates of the effective schools design. While the five basic correlates of effective schools are excellent management strategies for any school situation, many school systems are unable, due to lack of appropriate personnel or other factors, to implement an effective schools design. The KCS Proficiency Project was one test of the effectiveness of limited implementation of the effective schools correlates and studied the resulting impact on student achievement at the secondary level.

Research Question

This study attempted to answer the following two-part question:

Is it possible to increase the percent of grade-nine pupils passing the proficiency test in the three target

schools (X) and to reduce the disparities between the percent passing in (X) and in: the City, in other (n=5) KCS high schools, and in the designated three "control" (O) schools through implementation of a Proficiency Project emphasizing basic skills achievement?

Limitations of the Study

The study was conducted with the following limitations:

1. True experimental design was impossible because of the intact group nature of the project. This study assesses the test results of pupils in grade nine, and each year of the project the evaluation results are from a different group of students. A rigorously designed control group was impossible to achieve.

2. Testing procedures over and above those utilized within the KCS were not employed. This study reports the results of the Tennessee Proficiency Test for the ninth-grade students as its sole criterion for measurement of pupil progress.

3. This study was not able to sort out the specifics of the treatment as to the relative importance of each of the several components of the treatment. The activities of the whole project were considered; no attempt was made to differentiate the relative success of certain Proficiency Teacher or Task Force activities.

4. The third year data collection was confounded by (1) the inception of an Effective Schools project at Vine Middle School and Austin-East High School, two Proficiency Project schools, and (2) the inclusion of handicapped students in the testing results for the 1987 results, contrary to reporting procedures for previous years. It was possible to remove these results on an individual school basis so that comparable sets of data could be analyzed. Total city averages, however, used the results provided by the State Department of Education since it would be very difficult to remove scores of all handicapped students. Estimated "handicapped-removed" averages were projected based on past performance.

5. Other events could have had an influence on the increase in proficiency test scores in Proficiency Project schools. One school, Austin-East High, was experiencing a great degree of athletic success during the three year project period, achieving state championships in football, basketball, and track. In addition, the building housing Austin-East High School was extensively renovated in the Fall of 1984. State-wide, the Better Schools Program, which emphasized increased academic performance, was initiated during the first year of the Proficiency Project. The impact of these programs and events on data gathered by the Proficiency Project is not known.

Organization of the Study

Chapter I includes the project history, a description of the Proficiency Project processes, project evaluation, definition of terms, importance of the study, research question, limitations of the study, and a statement of study organization.

Chapter II includes a review of literature which will focus on previous descriptions of effective schools and school improvement programs.

Chapter III includes the procedures necessary in implementing the study and a discussion of the statistical and analytic treatments.

Chapter IV presents the results of the study.

Chapter V includes a summary of previous chapters, conclusions drawn from the study, and recommendations for further investigation.

CHAPTER II

REVIEW OF RELATED LITERATURE

Chapter II contains a review of selected published literature concerning effective schools research as it relates to the Knoxville City Schools (KCS) Proficiency Project, 1984-1987. This section helps put the KCS project into perspective.

Early Studies of School Effectiveness

Schools matter. For many years, researchers knew that schools differed in effectiveness. This comes "as no surprise to parents who often go to a great deal of trouble to get their children into schools of their choice" (Rutter et al., 1979, p. 1). Until recently, however, the variables that influence student achievement were inconclusive. Current research on effective schools has now identified those variables which allow some schools to matter more than others.

The American public educational system expects (1) to give all students an equal educational opportunity, and (2) that a quality education for all students is possible. In an effort to ensure equal educational opportunity for all

students, local and state governments have developed education standards that are somewhat uniform throughout, such as types of text, teacher education requirements, size of libraries, etc. What the local and state governments are unable to assure in equality, the federal government provides, such as free or reduced breakfast and lunches and special programs for educationally deprived children (Chapter I). Yet the fact remains that some schools do a better job than others in educating children of similar backgrounds (Purkey and Degan, 1985). Some schools are more "equal" than others in terms of their impact on the educational outcomes of students in their charge.

The disparity in educational outcomes of schools is most evident among the children of the poor. Achievement in poorer, inner city schools is typically lower than achievement in schools that draw from more affluent areas. Researchers have tried for a number of years to isolate those factors that are most indicative of school success in an attempt to improve the quality of education for all students. Earlier studies, however, did little more than to "blame the victim," the student himself, for the presence or lack of success.

One such study was a broad comparative survey of the outcomes of schooling and the effects of school variations conducted in response to Civil Rights Legislation of the mid

1960s. In 1966, James S. Coleman, a sociologist from Johns Hopkins University, with colleagues from Vanderbilt University and the U.S. Office of Education, surveyed "Equality of Educational Opportunity" for the Department of Health, Education, and Welfare (Coleman et al., 1966). Coleman noted that differing family backgrounds, as measured by parents' education, structural integrity of the home, number of siblings, items in the home, parental interest and educational ambitions for their children, were far more influential in predicting student outcomes than were variations in school characteristics. When these socioeconomic variables are statistically controlled, however, "differences between schools account for only a small fraction of differences in student achievement" (Coleman et al., p. 22). Although often referred to as a study that demonstrated that schools made little difference, Coleman concluded that schools did differ in their relation to various ethnic and racial groups. A minority student was more affected by the quality of the school attended than was a nonminority student. Improvement in school quality would positively impact the disadvantaged student, but would show little difference in the anticipated educational achievement level of a student from a strongly supportive family background.

A later study by Coleman (1975), using data collected internationally from various researchers, upheld his assertion that home influence was the most significant indicator of educational achievement, but suggested that it was subject-specific to reading achievement only. If other measures of achievement less related to reading were used, then differences between schools would show more of an impact than what had been reported in previous studies.

In what was to become a landmark study of this era, the President's Commission on School Finance funded the Rand Corporation to study the resources, processes, and organizational arrangements that affect student outcomes (Averch et al., 1972). Averch, senior author of the Rand study, concluded that research had failed to identify a single variable that made a significant difference in the educational outcomes of students. Averch did not suggest that nothing works, or that nothing makes a difference, but rather insisted that the variables that consistently altered student achievement had yet to be pinpointed. The fiscal policy implications of his work, however, were that (1) increasing expenditures was not likely to measurably increase student outcomes, and (2) that in some cases expenditures could be reduced without an adverse reaction.

Richard Murnane (1981), in reviewing the quantitative research of the 1970s, concluded that the role of any school

resource in contributing to school achievement had not been proven. His survey, however, indicated that the primary factor in school effectiveness was the human element. Teachers and students in populations noted for higher pupil achievement had a common set of descriptors.

Achievement characteristics of the total student body made a difference in the success of higher risk pupils, a finding shared earlier by Coleman. Murnane found that: (1) Students with low skills improved when they attended a school in which the achievement level was relatively high, (2) Progress for students from low socioeconomic backgrounds was higher when they attended schools with high socioeconomic student populations, and (3) Students who were higher achievers and from higher socioeconomic status (SES) backgrounds were not hindered by the inclusion of lower achieving students in their schools.

Teacher characteristics related to higher student achievement were: (1) verbal intellectual skills, (2) quality of college attended, (3) teaching experience, (4) high expectations for students in their charge, and (5) postgraduate study. Even crude measures of these teacher characteristics have shown sufficiently powerful differences among student populations.

A study conducted by economists at the Federal Reserve Bank of Philadelphia presaged the findings of Murnane's

analysis of teacher characteristics. In this study, Summers and Wolfe (1975) reported a relationship between student growth and the quality of teacher training. Using the Gourman rating, a rating of the undergraduate programs of colleges and universities in the United States, they found that most teachers in the Philadelphia schools attended colleges or universities rated lower than the nearby Pennsylvania State University, which had a rating of 502 on a scale of 250 to 800. Summers and Wolfe reported a higher achievement rate among elementary students who studied with a teacher from a college or university with a rating of 525 or higher.

Summers and Wolfe also analyzed number of years of teaching experience and its relationship to pupil achievement. They found that while high achieving students did better with more experienced teachers, the lower achievers did better with new, inexperienced teachers. Their conjecture was that the inexperienced teacher had not yet lost the enthusiasm needed to teach students who find it difficult to learn.

Even though the results of these earlier studies failed to identify, except for the human element, those school resources that contributed to school effectiveness, the belief that schools made a difference persisted, in America as well as abroad. Rutter et al. (1979) studied 12

secondary schools in London for a period of three years. These high schools, all within a few miles radius of each other, served inner-city London in an area that varied somewhat in socioeconomic composition.

By looking at each school individually, Rutter found that each differed markedly in student attainment, behavior, attendance, drop-out rate, and delinquency rate. Even when the comparisons were restricted to children of similar abilities and social backgrounds, the differences between schools remained. Moreover, each school performed similarly across all variables measured. If student attainment was generally high, the other measures such as behavior and drop-out rate were similarly favorable.

Rutter's study reflected a growing change in focus of the literature from broad, comparative designs to smaller case studies of already successful schools. With this change in research technique, the focus narrowed to that of primarily lower SES schools that were outliers, or statistically successful beyond the normal expectations for the demographics of their student populations.

The Effective Schools Rationale

The slow beginnings of the effective schools trend started, ironically, during an era in which the works of

Coleman and Averch were having the greatest impact on educational policy. While researchers were busy defending or criticizing the Coleman study, and fiscal policy makers were planning budgets around the findings of the Rand Corporation study, George Weber, the Associate Director of the Council for Basic Education, began reporting that some inner-city schools boasted reading achievement scores that were unusually above expectations and met or exceeded the national average. His case study, published in 1971, was the first in a series of documentations of successful inner-city schools that is now the foundation of effective schools research. Weber (1971) heralded a movement which now states that:

contrary to what some educators have believed, it really is possible to improve the achievement of low income students in basic skills, that schools can reduce (though not eliminate) the impact of students' backgrounds in school achievement, and that, therefore, educators cannot excuse poor student performance simply by pointing to a disadvantaged home environment. (Purkey and Degen, 1985, p. 1)

The effective schools movement has become the equivalent of an equal rights in education act for lower income children. Edmonds, this decade's effective schools chief spokesperson, postulated that attainment of instructionally effective schools was "far more a matter of politics than of social science" (Edmonds, 1979, p. 15). To those who argued about the identification of "effective" practices, he countered:

How many effective schools would you have to see to be persuaded of the educability of poor children? If your answer is more than one, then I submit that you have reasons of your own for preferring to believe that basic pupil performance derives from family background instead of school response to family background. (Edmonds, 1979, p. 22-23)

Edmonds believed that society's willingness to respond to the educational needs of the poor was a measure of progress as a social order. In order for schools to advance in equity, the children of the poor must acquire the basic school skills that are minimal prerequisites to "successful access to the next level of schooling" (Edmonds, 1979, p. 16). Most schools that teach the children of the poor are dismal failures even when given this modest goal.

Schools that serve predominately lower income children have traditionally been found to have lower achievement scores than schools serving the middle class. Researchers had been documenting this fact for a years in numerous studies. Why then, did Edmonds' research have such an impact on school effectiveness studies?

As stated earlier, the research prior to Edmond's indictment of the ineffectual education of the poor reveals a history of studies structured with different research designs. Although Weber's work was a case study of four successful inner-city schools, most researchers prior to 1979 concentrated on quantitative studies of the determinants of educational effectiveness. In other words, most

previous research used large samples and correlational designs to determine factors that influenced student achievement. Using these techniques, the research was unable to provide clear evidence of factors most influencing school effectiveness.

Edmonds' research was a more positive approach of case studies of schools that were succeeding when they "should" have been failing. By changing the research design, he was able to identify and refine the factors influencing school effectiveness that did not emerge in large correlational studies. Edmonds' work began a research trend of studying and quantifying success instead of looking for and explaining failure.

Definition of an Effective School

The original meaning of an instructionally effective school, as defined by Edmonds, is one that:

brings the children of the poor to those minimal masteries of basic skills that now describe minimally successful pupil performance for the children of the middle class. (Edmonds, 1979, p. 16)

Researchers have refined and expanded this definition to include results of standardized measures of basic skills which show no disparity based on race or SES. Low SES children would thus perform at levels higher than would normally be expected of them, given their backgrounds.

A workable research definition of an effective school is that when disaggregated, there should not be significant differences between or among mean scores of various demographic groups on basic skills measures (Achilles et al., 1987). Student achievement or performance is measured by the analysis of achievement on tests of basic skills mastery. This is not to say that other variables of schooling such as motivation and attitude are not important, but they are not included in this definition of effective schools.

Previously, researchers took a broad look at schools and the many ways that successful learning experiences could be measured, resulting in little agreement on factors that mattered in schooling. The effective schools definition narrows the parameters to only the very basic items that can be readily measured.

Some have criticized this narrow view, but for operational purposes, it has given educators something to focus on in improvement efforts. Measures of basic skills achievement at a level that allows the student to successfully enter the next curricular cycle (or grade) is a minimal benchmark for any SES level.

This definition provides a very limited, "tight" concept of schooling that is workable for the purposes of this research. It is amenable to analysis and is a measure

supported historically since the time of the Coleman report (Coleman et al, 1966). We are willing to accept this narrow definition while recognizing that there are other very important variables and outcomes of schooling.

Characteristics of Effective Schools

In general, the following are characteristics of schools that are instructionally effective: (1) building level leadership is strong and positive, (2) teaching emphasis is on basic skills, (3) there is a positive school climate, (4) teachers have high achievement expectations of all students; staff and administration have high expectations of each other and (5) monitoring of student achievement is used in instructional planning. These correlates were first proposed by Weber (1971) and expanded and refined by Edmonds (1979) and are the basic characteristics that researchers use to describe successful schools.

Other effective schools characteristics include strong system-wide support, professional growth emphasis, and community involvement. Most of these characteristics were derived from studies of schools with elementary age low SES status students who were highly represented by minority racial groups. Success was narrowly defined as improved scores on standardized or criterion-referenced basic skill

achievement tests. A discussion of the five major effective schools characteristics follows.

Strong and Positive Building-Level Leadership

Strong and positive building-level leadership is necessary for the successful implementation of all other effective schools correlates. Building-level leadership traditionally is thought of in terms of the principal, but can include significant other professionals who are involved in school improvement efforts.

Strong and positive leadership begins with a clear vision of the school's goals and the ability to communicate this mission to all who are involved in the operation. This concept of vision defines not "what we are, but rather what we seek to be or do" (Colton, 1985, p. 331). It is the ability to view with our mind's eye and to form a mental picture of the ideal without regard to perceived difficulties. Studies cited by Larkin (1985), Rutherford (1985), Halinger and Murphy (1985), and Purkey and Degen (1985) have described a sense of vision on the part of the leadership and the staff as essential to the success of any school. This vision begins with the principal and goes beyond maintaining tranquility in the here and now (Rutherford, 1985).

A principal who exhibits strong and positive leadership will assertively carry out this vision. What is done and what is allowed to happen are all a part of the major goal. Effective schools are tightly managed; the principal "runs the school" rather than the "school runs itself" (Shoemaker and Fraser, 1981).

Strong and positive leadership means that the principal is an active advocate and facilitator of other effective schools correlates. The principal does not actually "do" each correlate, such as the monitoring of student achievement or the redesigning of curriculum to focus on basic skills, but he or she is an initiator and a supporter of these efforts (Hersh, 1982).

Educational reformers are beginning to recognize that strong building level-leadership is not always affected by the principal alone. Hord et al. (1984) reported the emergence of a "Second Change Facilitator," a person who provided significant interventions in coordination with the principal. The relationship existed both formally (e.g., a central-office appointed person who became active in a particular school or an assistant principal given the responsibility for curricular improvement) or informally (e.g., a teacher who was given added responsibilities in the overall improvement effort). Hord et al. (1984) reported that the Second Change Facilitator (Second CF) worked more

frequently with individual teachers than with groups of teachers, and while in most cases complimented and facilitated the role of the principal, sometimes even targeted the principal for "simple incident interventions." Second CF's work was interactive (as opposed to directive and evaluative) and involved organizing for logistical and material arrangements, training of teachers, monitoring to check progress, and coaching interventions. The role of the Second CF was more effective when it was filled by a staff person; in the absence of such an assignment, the staff informally selected and used such a person on its own.

Another form of leadership support for the principal is the development of teachers within the school who function as Peer Coaches. Peer Coaching refers to a procedure whereby teachers are observed within their classrooms by a another professional, and are given the opportunity for follow-up discussions of this observation in a nonevaluative, nonjudgemental manner. Peer Coaches are most effective when they are fellow teachers, in a role facilitated by the principal (Garmston, 1987, and Wildman and Niles, 1987).

A Peer Coach can provide clear, positive staff-level modeling that facilitates the implementation of other effective schools correlates. This type of leadership provided for fellow teachers is a very effective staff

development technique that can enhance the overall effectiveness of a school.

The emergence of the Second Change Facilitator and the Peer Coach in the literature legitimizes the role of one or more facilitators who assist the principal in providing strong and positive leadership.

Teaching Emphasis Is On Basic Skills

In an effective school, the opportunity to learn is increased by devoting more time to basic skill instruction (Halinger and Murphy, 1985) and by using a variety of teaching strategies (Hersh, 1982). The curriculum is tightly coupled, that is, highly coordinated from a central source and focusing on a specified set of instructional objectives. The curriculum is closely aligned with test objectives to assure that the students are being exposed to the subject matter that is or will be evaluated. Teaching practices associated with unusually successful classrooms include whole class instruction taught at grade level, small group instruction taught at the performance level, and larger amounts of time devoted to teacher presentation and guided practice. Larkin (1985) reported a successful program that eliminated the pull-out approach for compensatory education, with support teachers in the classroom conducting basic skills lessons that supplemented the regular instruction.

Positive School Climate

In a school that has a positive school climate, the enthusiasm and caring exhibited by all individuals inspires everyone, student and staff alike, to perform with very high standards. Nevertheless, it is easier to recognize the existence of a positive school climate than it is to quantify or describe the variables which make it positive.

Researchers have concluded that while schools do possess something unique called a climate, the differences among schools in this area, while discernible, are difficult to define and to measure. Anderson (1982), in a review of school climate studies, reported that researchers were in disagreement over the possibility as well as the desirability of its identification. She offered images of the "beast" (school climate) described in the literature as (1) An Albatross: a possible yet undesirable area of research which only serves to burden policy makers; (2) The Unicorn: a desirable yet unattainable focus of study; and the (3) The Phoenix: a possible and desirable focus of study born of the failures (ashes) of past research on school effectiveness.

An agreed upon definition for school climate is also lacking among researchers, prompting Anderson to offer the image of the seven blind man who each gave seven definitive and scholarly descriptions of the elephant based on the area

that each could touch, yet each blind man claiming to know the overall characteristics of the beast.

As such, a workable definition of a positive school climate is not offered here; rather what is offered is a description of what the "beast" looks like from several different perspectives. Descriptions of a positive school climate can be organized into four general arenas: academic, organizational, physical, and social (Goldberg, 1986).

Effective schools with a positive academic climate have widespread student rewards for achievement. The rewards are more frequent and for smaller achievement steps than what would be expected from more affluent schools. Rewards are used by the staff in an attempt to influence the student norm and to convey the message of the importance of learning (Halinger and Murphy, 1985).

A positive organizational climate is one that works equally well for students as it does for faculty and staff. Very little testing of established rules and procedures is necessary from any group (Shoemaker and Fraser, 1981). The school is safe and orderly and operates with a few basic rules to which students and staff agree. Students and teachers feel that they are empowered with the ability to influence major decisions and are aware of procedures to follow in order to exercise their right (Goldberg, 1986).

A positive physical climate is not affected by the age of the building, but is evident in the decoration and care

of the school and classrooms, a finding reported by Anderson (1982) and Rutter et al. (1979). The schools are brightly lit, well maintained, and uniformly clean (Goldberg, 1986).

A school with a positive social climate will anticipate the needs of the students and will meet those needs with little fanfare. Development of breakfast programs, before-school care for students who need early morning supervision, before-school tutoring, and a myriad of after-school day care models are examples of anticipating and meeting student needs. In schools with a positive social climate, warmth and encouragement are practiced by students and faculty alike. Students have a sense of control over their academic success or failure, and they feel that the teachers care if they succeed. This is in contrast to schools with a high sense of academic futility, where students' perception is that their fellow students punish them if they succeed, that teachers do not care about their success or failure, and that at any rate they have little or no control over the entire educational process (Brookover, et al., 1978).

High Expectations

In an effective school, an all-out effort is made to communicate the idea that all students can master the basic skills. Examples of developing or raising expectations

include eliminating grouping practices that identify some students as low achievers, inservice activities which underscore the educability of all students, and reports disseminated to the staff which affirm the successes of low-income and minority students (Larkin, 1985).

High expectations also refers to expectations for professional growth and development that are held for teachers by their peers and principals. Extra inservice, participation in postgraduate work, and the acquisition of new teaching techniques raise the teaching expectation level of the staff. Peer coaching can also raise staff expectations by raising the norm of acceptable behavior through effective modeling.

Effective schools with high expectations can reasonably expect to see results of these efforts eventually surface within the student population. A positive example of high expectations is Austin-East Excel, a community-school effort at Austin-East High School in Knoxville, Tennessee to increase the number of academic (as opposed to athletic) entrances into college. Seniors of the 1988 graduating class, who entered Austin-East during the first year of the Proficiency Project, are now showing greater interest in continuing their education beyond high school (McClary, 1988).

Monitoring of Student Achievement

Edmonds found that when test scores declined in affluent, suburban schools, there was a rapid change in school policies, procedures, and instructional methods. On the other hand, when test scores declined in less affluent, urban schools, the students were considered to be at fault (Shoemaker and Fraser, 1981). In an instructionally effective school, when test scores decline, the school personnel respond to determine those areas that can be changed. This monitoring and adjusting of instruction, procedure, or policy is regular and continuous and is based on results of formal standardized testing as well as informal criterion referenced methods.

Summary

What do we know about school effectiveness? Strong enough variations exist within the correlates to argue strongly against the notion that a recipe for school effectiveness exists that could be followed by every school (Halinger and Murphy, 1985). Each researcher organizes and discusses the correlates of school effectiveness with differing emphases. A new litany of factors is not necessary.

An effective school gives the impression that a community of interest is in operation. It is a place where staff and students alike share the same vision and are all working toward their goal. An effective school is a good place to be for everyone.

A summary of research findings cannot synthesize the feeling of culture, or syndrome, or even process that is evident in the literature. The application of principles of effective schools defies simple quantification, and for that reason, the movement has its critics.

Clark, Lotto, and Astuto (1984, p. 50) developed the following summarization of the search for effective schools:

1. Schools differ in effectiveness, and consequently, they matter. Schools matter the most to children who have fewer opportunities to learn outside school.
2. People are the most important resource in effective schools. Teachers, students, building-level and system level administrators all contribute to a school's positive educational outcome.
3. Schools that matter can be characterized by six general categories: (1) appropriate use of academic learning time, (2) basic skills emphasis, (3) positive school climate, (4) high expectations, (5) monitoring of progress, and (6) learning

opportunities for teachers as well as students. The focus is narrow. What gets measured is what gets taught.

4. Effective school efforts are not always sustained. The reasons why schools that were once effective decline is a variable of the people who populate the institution and their interactions within it.

The search for effective schools is the search for effectiveness in people. While correlates of effectiveness have been identified, it is still the human element that determines the success of a school. The danger in effective schools research is for policy makers to focus on the quantitative correlates, such as higher standards, and ignore the correlates that resist quantification, such as positive climate (Kirst, 1983).

Ernest Boyer (1985), President of the Carnegie Foundation for the Advancement of Teaching, cautioned that education is a human enterprise. Regulation alone cannot increase school effectiveness. A renewal in the minds and hearts of the people is the first step.

Effective schools are a state of mind, the will to achieve a vision, and the joy of success.

CHAPTER III

PROCEDURES

Chapter III describes the procedures followed in this study. It includes a background of the methodology, a correlation of the effective schools framework with the Knoxville City Schools (KCS) study, a summary of the activities of the proficiency teachers, the teacher questionnaire, a description of the sample, and the statistical treatment of the data.

Background of Methodology

"When one is using a quasi-experimental design and imperfect data analysis techniques, it is crucial to replicate" (Borg, 1987, p. 250). Due to the limitations of this study that were described earlier, replication was necessary to ensure integrity of the results.

This study was replicated: (1) each year during the project duration in the Knoxville City Schools (KCS), the results of which are discussed in this study, (2) in other effective schools studies in other sites, for example project SHAL in the St. Louis Schools (Achilles and Young, 1985), and (3) in the KCS standardized achievement tests

administered at grade 8, included as part of the proficiency project but not as a part of this study (Walker, 1988).

The methodology used in this study, which concentrated on the third year of the KCS proficiency project, was influenced by what happened the first two years. These results were reported in detail elsewhere (Achilles et al., 1985, 1986, 1987a, 1987b, 1988a, 1988b). In the first year of the project, (1984-85) a random sample was drawn from grade-nine pupils in the three "experimental" (X) schools and also from grade-nine pupils in the three (of the five other KCS high schools) schools most like the three (X) schools. These three schools served as a "control" group (O) for comparison with the (X) group. This approach provided the following groups for analysis and comparison: the experimental (X) group, the control (O) group, the 5 nonproject schools (Other schools) and the total KCS grade-nine group. These results showed significant changes in pupil performance on pretest-posttest measures for the (X) group. Based on the year one results, it was decided that a posttest only design would be appropriate for subsequent years if a random sample was used. Charts and tables developed for the first year report were used in this study to show historical results of the project and to serve as baseline for analyses and comparisons.

By the third project year, certain routines for gathering and analyzing data that were successful during the first two years were repeated. These routines included the monitoring of proficiency teacher activities through written reports and supervision and the completion of a needs/concerns questionnaire by the teachers involved in the target (X) schools.

Certain procedures were unique to the third-year study, including the removal of the handicapped students' scores for comparative data, the Chi-square analyses, and the three-year comparisons. Where appropriate, this study built on first and second year data, expanding on those items and developing a total, or three-year, summary.

Effective Schools Framework and the KCS Project

The goal of the KCS Proficiency Project was to increase the proficiency test scores of grade-nine pupils in the project schools by using a basic skills approach. Implementation efforts of the project staff were focused around the framework of effective schools proposed by Edmonds (1979). Some effective schools characteristics were easily implemented, others were beyond the scope of the project or were implemented on a limited basis.

The first effective schools characteristic, strong and positive building-level leadership, was implemented on a limited basis. The Superintendent's Task force (1) decided to work with the existing building-level administrator in each target school, (2) made no attempt to measure current levels of administrative leadership skills, and (3) chose to use the Task Force as a problem solving vehicle for project implementation rather than administrator staff development in leadership skills. Additionally, the Superintendent requested that the independent evaluator, the Bureau of Educational Research and Services at the University of Tennessee, not develop or use measures of leadership abilities that could be used on a comparative basis between and among the principals of the Knoxville City Schools. Given these constraints, the development of strong and positive building-level leadership as a project emphasis was limited.

During the implementation of the project, however, the role of the proficiency teacher developed along the lines of the Second Change Facilitator (Second CF) described by Hord et al. (1984). The organizing, training, monitoring and coaching functions characteristic of a Second CF were all part of the role of the proficiency teacher.

As part of the monitoring process, the Proficiency Teacher conducted observations in classrooms and met with

the teachers afterwards to discuss techniques and procedures that were used. In this capacity, the Proficiency Teacher functioned similarly to the Peer Coach described by Garmston (1987).

While the project did not initially focus on the development of strong and positive building-level leadership, in effect, the Proficiency Teacher functioned in the role of facilitator in this area.

Teaching emphasis on basic skills was strongly implemented in this project. Proficiency Teachers developed and coordinated proficiency materials and techniques that emphasized basic skills in an interdisciplinary manner. They correlated existing text materials with proficiency objectives and sought out new materials in areas of text deficiency. Peer tutoring, individual student tutoring, and teaching specific skill units to selected classed are other examples of a basic skills emphasis provided by the Proficiency Teacher.

A positive school climate was implemented through increased and frequent rewards for academic achievement. Using sponsors from the Adopt-A-School Program, students were rewarded for achievement of specific short-term goals as they were met. Adoptors also rewarded those students who passed the proficiency test with parties and incentive awards.

The Proficiency Teachers worked with teachers, students, and the community to communicate high expectations for the student body of each school. Techniques of encouragement for students and teachers, slogans posted stating that all students were expected to learn, and attention to upcoming testing dates through announcements and emphasis in class were all used to communicate high expectations. The Proficiency Project did not, however, monitor changes in expectations of the students, staff, or community, and therefore implemented this characteristic on a limited basis.

Pupil progress was monitored through the use of preproficiency test scores to identify "at risk" students, and actual proficiency test scores to measure the degree of success of the project. This characteristic of effective schools was easily measured and provided the basis of the research design.

Other effective schools characteristics implemented in this project were strong Central Office Support and Community Involvement. The Central Office supported the project by releasing subject-area supervisors for one-half a day per week in project schools and by assigning several supervisors to the Task Force. Community involvement was expanded through the use of the Adopt-A-School sponsors and the development of community volunteer projects.

Proficiency Teacher Activities

The activities conducted by the proficiency teachers are listed in Chapter I, page 10. They are described in three general treatment groups: (1) teacher support, (2) student support, and (3) actualization of home and community resources. Figure 1 shows the treatments by group for each school. Student treatments included individual educational programs (IEP's), peer and community tutoring, student-team learning, and special lessons that were used in various classes. Teacher treatments included inservice models that used elements of the effective schools design, help with classroom organization and teaching techniques, and provision of materials over and above the customary, adopted texts.

Note that Figure 1 includes a reference to a particular staff and teacher treatment, Teacher Expectations/Student Achievement (TESA), and that this treatment is blank across all project schools. TESA was not implemented by the KCS as originally planned due to internal difficulties experienced by the school system at the time. Other inservice models contained elements of TESA training, but the total staff and teacher treatment would have been enhanced by the full implementation of this training process.

A. Students Treatments	Grade 9		Schools		Grade 8	
	A/E	Fulton	Rule	Bdsly	C' berry	Vine
1. IEP	X	X	X	X	X	X
2. Peer Tutor	X	X	X	X	X	X
3. Community Tutor	X	X	X	X	X	X
4. "Precision Teaching"	X	X	X	X	X	X
5. Additional Materials*	X	X	X	X	X	X
6. STL and Group work**	X		X	X		X
7. Special Studies Skills***	X	X	X	X	X	X
* Prepared learning packets are located in individual schools. ** Fulton and Christenberry project teachers did not take STL formal training but used STL technique with students. *** These skills were taught in Chapter I Language Arts Classes in the middle and high schools. Bdsly = Beardsley; C' berry = Christenberry.						

B. Staff and Teachers Treatments	Grade 9		Schools		Grade 8	
	A/E	Fulton	Rule	Bdsly	C' berry	Vine
1. TESA						
2. TIM*	X	X	X	X	X	X
3. Class Organization/ Effective Teaching	X	X	X	X	X	X
4. Extra Materials**	X	X	X	X	X	X
5. Extra In-Service (STL)	X		X	X		X
* Additional TIM training will be conducted in the second project year. ** The project director helped secure texts and supplies by request. TIM=Tennessee Instr. Model. STL=Student-Team Learning. TESA=Teacher Expectation/Student Achievement.						

C. Parents/Guardians Treatments	Grade 9		Schools		Grade 8	
	A/E	Fulton	Rule	Bdsly	C' Berry	Vine
1. More Home-School Effort	X	X	X	X	X	X
2. Explanation of Model	X	X	X	X	X	X
3. Home stimulation; Study Habits	X	X	X	X	X	X
4. Aspirations/Expectations	X	X	X	X	X	

Figure 1. Treatment groups by schools for (A) Students, (B) Education Personnel and (C) Community/Parents for the KCS Proficiency Project, 1984-1987.

Source: The Knoxville City Schools (KCS) Proficiency Test Project for Grade Nine Pupils in Three Inner-City Schools, 1984-1987 Evaluation Report. Achilles et al., 1987a.

Actualization of home and community resources included explanation of the model, efforts directed at increasing home-school cooperation, and attention to parental aspirations and expectations.

Most activities were based on suggestions from proficiency teacher meetings, administrator conferences, or teacher requests. The teachers submitted regular reports of their schedules and activities to the project director, who monitored and supervised their implementation. They submitted a summary report at the end of the year that detailed their activities.

The monitoring and supervision of proficiency teacher performance assured a degree of confidence that the project was implemented as planned (Leithwood and Montgomery, 1982). Monitoring guarded against the "non event" as described by such researchers as Charters and Jones (1973) and Hall and Loucks (1977).

The Teacher Questionnaire

During each project year, teachers in schools served by the Proficiency Project were asked to complete a needs and concerns questionnaire at the beginning and at the end of the school year. No attempt was made to match pre and post questionnaire results; data were considered as group

responses to a generalized questionnaire. A total of 61 teachers responded to the pre and 45 to the postquestionnaire for the 1986-87 school year.

Description of the Population and the Samples

The study population consisted of the 396 grade-nine pupils, from three (X) schools, who took the proficiency test in the Spring, 1987. From this population, a random sample of 138 students was drawn. This sample was divided according to each student's classification as free lunch (FL) or non free lunch (NFL) as one way to determine socioeconomic status (SES). There was no way of knowing that all who qualified for free lunch applied, but those who did apply had to meet federal income guidelines for assistance. The free lunch group, therefore, contained all low SES students, but the non free lunch group may also have included some low SES students who never applied for assistance.

A proportionate random sample of 128 students, reflective of similar SES, was then drawn from the 424 grade-nine pupils in the three "control" (O) schools. The KCS had eight high schools. After the three target schools (X) were removed, the other (n=5) schools were reviewed for race, SES, and test performance. Two schools which

consistently had much higher test scores were removed, leaving three schools that became the control (O) schools. The populations in (X) and (O) conditions were approximately the same (396/424). The combined random samples of 267 youngsters met the .95 confidence limits for 850 pupils, but the samples for each group (X,O) were slightly less (approximately the .90 confidence level).

Within the samples, two other demographic variables were analyzed: sex (M or F) and race, white (W) or non white (NW). The data reflected the removal of handicapped students from the analyses in the (X) and (O) groups in order to obtain populations comparable to the previous two years' studies. Gross data (total percent passing) were used for some comparisons (e.g., of (X) schools to the total city scores) and for these comparisons the handicapped pupils score were not removed; data were used as reported by the state test bureau.

Statistical Treatment of the Data

The data were analyzed as follows:

1. Descriptive statistics, including averages, percents, and summaries of changes over time were used to analyze the gross data for each school and for the X and O schools as groups. The population of these groups included

the total members of the ninth grade classes who took the proficiency test, with the exclusion of the handicapped students for comparisons of the X and O samples. These data include results from the prior years of the project, which serve as historical perspective and baseline.

2. The most precise analysis was a detailed, internal analysis within and between groupings of mean scores for the X and the O samples. The groupings, as identified in the description of the sample, included M/F, W/NW, FL/NFL. The analyses were conducted for the Math (M) and Language Arts (LA) proficiency test scores. Each set of comparisons included 12 tests. Four statistical comparisons were used:

- a. An ANOVA design to test for differences in mean test scores of groups in the samples.
- b. A Chi-square (χ^2) of the frequencies of pupils passing the proficiency tests between and within the samples.
- c. nonpaired t-tests to assess differences in mean scores of groups in the sample.
- d. The nonparametric Spearman rho was used to see if changes in the rankings of the 8 KCS High Schools on the (M) and (LA) tests changed or remained static over the project's three years.

3. Teacher questionnaire responses from this final project year were analyzed and compared to pre and post measures from previous years.

4. The results of the three years of the project were summarized, allowing comparisons and trends to be noted.

CHAPTER IV

RESULTS

This chapter presents the data and analysis of the results of the third-year of the Knoxville City Schools (KCS) Proficiency Project, and summarizes the three years of the project.

The annual percents passing the state proficiency test in mathematics (M) and in language arts (LA) for 1987 were analyzed for each city HS, for the three Target schools, the five Other (nonproject) schools, as well as the total eight HS and the total city, which included some students from other programs such as Van Gilder Occupational Training Center, the Knoxville Evening High, and other alternative educational programs.

These results were compared on a historical basis with previous project and baseline years. The differences between the percent passing in the Target schools, the Other schools, and the city were computed. The differences between test results for 1987, individually by school and grouped by Target, Other and city, were analyzed and compared to the baseline. Individual student mean scores were compared between the two groups of schools, as were school rankings before and after project interventions. A

random sample of grade-nine pupils was drawn from the three Target (X) and three control(O) schools for detailed analyses. Internal analyses between and among samples of student data were used to determine significant differences between the X and O schools. Finally, teacher questionnaires were analyzed to determine perceptions (pre/post) of the staff in the Target schools for the third project year.

Most tables and figures that follow have also been reported in the third-annual evaluation report written for KCS by the Bureau of Educational Research and Service at the University of Tennessee (Achilles, Bobbett, Lintz, and Puckett, 1987a). Some have also been reported in research papers developed for and presented at professional meetings: Mid-South Educational Research Association (MSERA) (Achilles et al., 1987b) and the American Association of School Administrators (AASA) (Achilles et al., 1988b). The author of this current study was a co-author of the third-year report and the papers for the research associations.

The Sample

The study population consisted of the 396 pupils (N) from three (X) schools who took the proficiency test. From this population, a random sample of 138 (n) students was drawn. This sample was divided according to each student's

classification as free lunch (FL) or non free lunch (NFL) to determine socioeconomic status (SES). A proportionate random sample of 128 (n) students, reflective of similar SES, was then drawn from the 424 (N) grade-nine pupils in three "control" (O) schools. Table 1 describes the sample.

Table 1

The 1986-87 Proficiency Project Sample:
The Study Population (N), Sample (n), Non Free
Lunch (NFL), Free Lunch (FL), Male (M), Female (F),
White (W), and Non White (NW)

Schools	N	n	NFL	FL	M	F	W	NW
Target (X)	396	139	66	73	65	74	67	72
Control (O)	424	128	67	61	51	77	100	28
Totals	820	267	133	134	116	151	167	100

The three (O) schools, Holston, South Young and West, were chosen because their student populations were more similar to the target schools than the populations at Bearden and Central, the two largest city high schools. Bearden and Central were not chosen to be part of the control population because they have had a history of consistently scoring higher (Achilles and Lintz, 1985). The test results from Bearden and Central for 1982-1987

averaged in excess of 90 percent and positively influenced the percent passing in all 8 HS.

The populations in (X) and (O) conditions were approximately the same (396/424). The combined random samples of 267 youngsters met the .95 confidence limits for 820 pupils. The samples for each group (X,O) were at approximately the .90 confidence level.

Within the samples, two other demographic variables were analyzed: sex (M or F) and race, white (W) or non white (NW). The data reflected the removal of handicapped students from the analyses in order to obtain groups comparable to the previous studies.

Percent Passing in M and LA, 1982-1987

Table 2 summarizes the percent of grade-nine pupils passing the proficiency test in each KCS HS for the years 1982-1987, and shows some averages and groupings of results. The last column in Table 2 shows the average percent passing for 1982-1984, which was the baseline for the study. The two preceding columns show the results for 1987: (1) the percent passing for all who took the test, and (2) the percent passing when the test results of handicapped students have been removed (1987HR). Using these data, it is possible to compare annual project results (1985, 1986,

Table 2

Annual Percentage Passing Proficiency Test by School and Average Percentage by Target and Other Schools
for Math (M) and Language Arts (LA) Knoxville City Schools Proficiency Project,
1982-1987

	1982		1983		1984		1985		1986		1987		1987 HR		Mean 82-84	
	M	LA	M	LA	M	LA	M	LA	M	LA	M	LA	M	LA	M	LA
<u>Target</u>																
A. East	46.4	33.1	59.8	40.6	76.2	54.8	85.6	69.3	86.0	72.0	81.3	69.0	93.1	81.6	60.8	42.8
Fulton	91.0	60.7	88.2	71.3	87.7	73.8	91.0	82.2	94.0	77.7	91.3	78.3	96.9	83.7	88.9	68.6
Rule	74.1	52.3	72.5	53.6	64.1	53.5	87.8	64.7	79.3	59.7	82.7	72.8	83.5	74.7	70.2	53.1
X (3 H.S.)	74.7	51.1	76.6	58.6	77.5	62.9	88.5	73.6	87.6	71.0	85.5	73.4	92.7	81.1	76.2	57.4
<u>Others</u>																
Bearden	92.6	90.4	92.3	86.5	94.1	92.2	94.5	92.3	96.0	91.9	97.1	92.2	98.4	94.2	93.0	89.7
Central	94.1	79.6	93.6	85.4	90.9	83.2	90.3	82.0	95.6	86.8	96.2	89.9	96.4	90.3	92.9	82.7
Holston	95.1	61.7	93.5	74.8	97.6	80.6	97.7	87.6	100.0	94.6	97.0	92.1	89.9	92.7	95.5	72.4
S. Young	74.8	62.2	78.5	62.7	77.9	67.0	80.8	68.7	95.9	84.2	83.6	67.4	91.2	75.5	77.1	64.0
West	82.0	70.1	83.5	80.1	82.1	78.0	90.3	80.1	88.9	86.0	81.2	73.6	83.9	78.3	82.5	76.1
X (5 H.S.)	86.8	74.1	86.7	77.8	86.7	79.5	91.0	83.5	95.3	88.8	92.1	84.5	94.4	87.6	88.6	78.9
<u>City</u>																
X (8 H.S.)	N/C	N/C	N/C	N/C	N/C	N/C	90.3	80.7	92.9	83.3	90.2	81.4	94.0	85.8	84.8	72.3
City X*	83.0	66.9	83.7	72.1	84.1	74.8	88.3	78.8	91.1	81.7	88.4	79.6	N/C	N/C	83.6	71.2

*City average included more pupils than the sum of these eight schools. All percentages rounded.

M = Math; LA = Language Arts, N/C = not computed, HR = handicapped removed.

Source: Evaluation of Three Years of a Basic Skills Remediation Project in Tennessee. Achilles et al., 1987b.

and 1987) to the historical baseline (1982-84 average) to show test performance trends.

The pupil scores of Target, Other, and city schools all show growth when compared to the baseline data. The Target schools' (X) pupil gains were striking, however, when compared to the baseline and to city gains.

In 1982, the percent passing for the Other schools in M (86.8) and LA (74.1) is much greater than for Target schools (M 74.7 and LA 51.1). In 1987, the results are closer. The percent passing M in Other schools is 94.4: Target schools show 92.7 percent passing. The percent passing LA in Other schools is 87.6: Target schools show 81.1 percent passing. When the baseline and the 1987 percent of pupils passing M are compared, Other schools increased from 88.6 percent to 94.4 percent while Target schools increased from 76.2 percent to 92.7 percent. The percent difference for Target schools and Other schools for M decreased from 12.4 percent to 1.7 percent. The Target schools' percent passing in LA increased from 57.4 percent to 81.1 percent. The difference between the percent passing LA in Target and Other schools decreased from 21.5 to 6.5 percent from the baseline to 1987.

A review of individual Target schools shows that these schools have made impressive gains in the percent passing M and LA. For example, in 1982 only 46.4 percent of

Austin-East students passed M, but in 1987, this percent increased to 93.1. These gains are repeated for Rule, with 74.7 percent passing in 1982, and 83.5 percent passing in 1987. Fulton's gains in M were not as dramatic, from 91.0 percent passing in 1982 to 96.9 percent passing in 1987, but the growth was steady and the scores started high. While most Other schools increased, the growth was much slighter. As with Fulton in the Target population, these schools started higher and had little room for change.

The general progress of the percent of pupils passing in the three Target schools, as listed in Table 2, is shown graphically in Figure 2. Note the rapid rise of percent passing in (X) schools beginning with the 1985 results and, after a plateau in 1986, the continued rise in 1987. The large disparities between (X) schools and the Others seen in 1982 (12.1 percent in M and 23 percent in LA) have been reduced in 1987 to 1.7 percent in M and 6.1 percent in LA. The (X) schools are very close to the mean of the 8 HS in M (1.3 percent difference) and in LA (4.7 percent difference). Note that for 1987, the handicapped students were removed from the results of the Target and Other schools, but were not removed from the results of the total city due to unavailability of identifying data. Based on historical trends, however, the city results would be estimated to increase about 2 percent if the handicapped students' scores

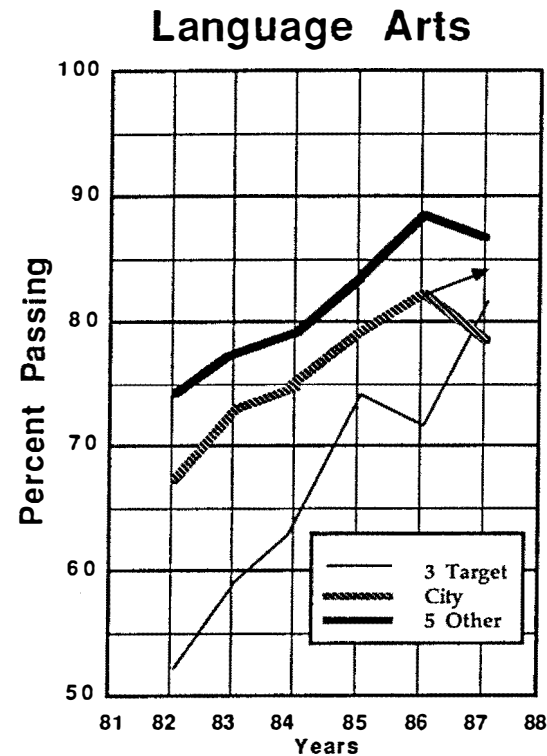
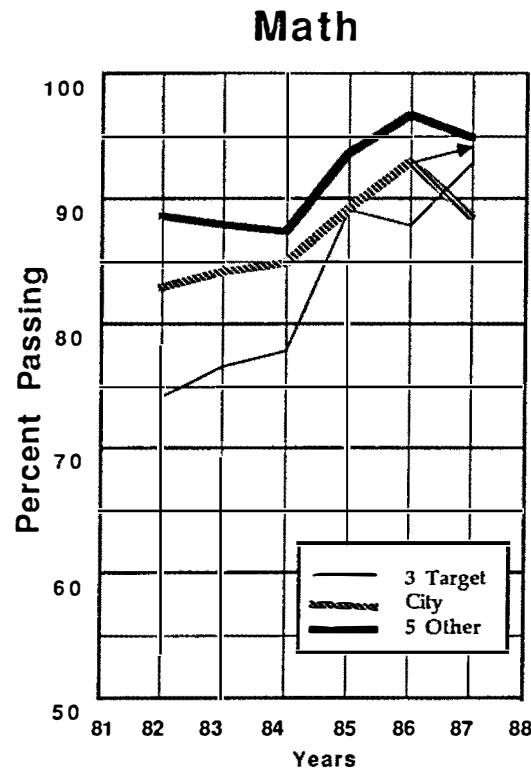


Figure 2. Percent passing Math (M) and Language Arts (LA) Proficiency Test in 3 groups of the KCS grade-nine youth. In 1982-1986, test scores for handicapped youth were not reported in the totals, in 1987 they were included in the totals. On this figure, results for handicapped youth were removed for Target and Others but not for City (see text); gross data only are reported here. Handicapped pupils' scores were removed for (X) and (O) samples elsewhere in the analyses. (* indicates the estimate for city scores with handicapped pupils scores removed).

Source: Evaluation of Three Years of a Basic Skills Remediation Project in Tennessee. Achilles et al., 1987b.

were removed from the results, as had been reported in previous years.

Differences in Percent Passing

Table 3 summarizes differences between Target, total city, and Other schools' percentages of students passing for

Table 3

Summary: Differences in Percent Passing the Math (M) and Language Arts (LA) Proficiency Test 1982, 1985, 1986, and 1987 by Project Schools (n=3), Other Schools (n=5) and Total City

Year	<u>Project Schools (n=3) and City</u>		<u>Project Schools and Other (n=5)</u>	
	M	LA	M	LA
1982	8.3	15.8	12.1	23.0
1985	.2	5.2	5.2	9.9
1986	3.5	10.7	7.7	17.8
1987	2.9	6.2	6.6	11.1
1987 (HR)*	—	3.2	3.6	8.1

*Based on previous years the Handicapped results would make about a three percent difference for the Project Schools. This difference is shown here as an estimate.

1982, 1985, 1986, and 1987. The 1987 results in this table, unlike the previous years, include handicapped students (The 1987 (HR removed) contains an estimate of the differences

based on prior years of data). In 1982, Target schools showed a great disparity when compared to the results of the total city, and an even greater disparity when compared to the 5 Other schools. In 1985, after one year of the project, the differences between Target schools, total city, and Other schools were small. These differences increased slightly for 1986, but in 1987 became comparatively less. In 1987, the students passing M in Target schools are within 2.9 percentage points of the average for the total city, and are within 6.2 percentage points of the city average for LA. There is a 6.6 percent difference between students passing M in the 3 Target and 5 Other schools, and a comparable 11.1 percent difference in LA.

The differences from the baseline years (1982-84) to 1987 are further illustrated in Table 4. The 1987 test results and baseline scores from Table 2 are compared, with the differences noted. The mean gains in percent passing in (X) schools were 16.5 (M) and 23.7(LA). The equivalent mean gains for the five Other schools were 5.8 (M) and 8.7 (LA).

Using the mean of the 8 HS for the baseline years and 1987 as an average, the average gain for all city schools is 9.2 percent in M and 13.5 in LA. This average gain, used as the city norm, shows how the gains of each school contributed relatively to overall gains in percent passing in

Table 4

Summary Results, KCS Proficiency Project: Percent of
Grade-Nine Pupils Passing the Proficiency Test
in Math (M) and Language Arts (LA):
Differences from 1987 and Baseline

	1987 (HR)		1982-84 Baseline		Difference (All Gains)		Sum Total % Increase
	M	LA	M	LA	M (+/-)**	LA (+/-)	
<u>Target</u>							
Austin-East	93.1	81.6	60.8	42.8	32.3 (+)	38.8 (+)	71.1
Fulton	96.9	83.7	88.9	68.6	8.0 (-)	15.1 (+)	23.1
Rule	83.5	74.7	70.2	53.1	13.3 (+)	21.6 (+)	34.9
X (3 HS)	92.7	81.1	76.2	57.4	16.5 (+)	23.7 (+)	40.2
<u>Others</u>							
Bearden	98.4	94.2	93.0	89.7	5.3 (-)	4.5 (-)	9.8
Central	96.4	90.3	92.9	82.7	3.5 (-)	7.6 (-)	11.1
Holston	89.9	92.7	95.5	72.4	5.6 (-)	20.3 (+)	25.9
South-Young	91.2	75.5	77.1	64.0	14.1 (+)	11.5 (-)	2.6
West	83.9	78.3	82.5	76.1	1.4 (-)	2.2 (-)	3.6
X (5 HS)	94.4	87.6	88.6	78.9	5.8 (-)	8.7 (-)	14.5
<u>City</u>							
X (8 HS)	94.0	85.8	84.8	72.3	9.2 (N/A)	13.5 (N/A)	22.8
City X	N/C@	N/C@	83.6	71.2	N/C@	N/C@	N/C@

*City average includes more than the pupils in the 8 high schools. @N/C = not computed, but estimated at 2 percent less than 8 HS based on past records.

**Is this percent gain more (+) or less (-) than the gain for all 8 HS?

Source: Evaluation of Three Years of a Basic Skills Remediation Project in Tennessee. Achilles et al., 1987b.

each school and group of schools. The gain in percent passing is compared to this average gain, and a determination of relative increase or decrease in test scores is made and noted by a (+) or a (-) in the column labeled "Differences."

In the (X) schools, two of three (66 percent) exceeded the city norm of 9.2 percent gains in M; in LA, all three schools (100 percent) exceeded the city norm of 13.5 percent. In the five Other schools, one (20 percent) exceeded 9.2 percent norm in M: and one (20 percent) exceeded the city average of 13.5 percent in LA. In Target schools, 5 of 6 (83 percent) of the reported scores for M or LA exceeded the city gain: in Other schools 2 out of 10 (20 percent) did. The increase in the city average, therefore, was driven primarily by gains in the (X) schools rather than the Other schools.

Individual Test Scores

Results of the proficiency test are reported to the student as a raw score ranging from 1 to 100. "Passing" the proficiency test means that the student was able to answer correctly at least 3 out of the 4 test items presented for each objective for at least 70 percent of the objectives in the M and the LA sections. A Math score of 84, for example, would indicate that the student demonstrated proficiency on 84 percent of the objectives tested in math.

The data presented thus far reflect the percentages of students in each school who passed each section (M or LA) with a score of 70 or higher. Table 5 presents the means of the individual student scores per school for M and LA.

Note that the mean student score for Target schools in M varies from a high of 92 (Fulton) to a low of 83.9 (Rule). Fulton's higher student mean score was accompanied by a greater range in scores (a 77 point spread), but a lower standard deviation (10.1). Rule's low student score had a lower range (58 points), but a higher standard deviation (14.0). The mean student score for Other schools varies in M from a high of 92.8 (Holston) to a low of 84.2 (West). Holston's high student score was accompanied by a low range of scores (35 points), and a low standard deviation (6.3). The lower scores for West showed a greater variability within the student population; i.e., a range of 58 points and a higher standard deviation (12.4).

While there were considerable differences within the Target and Other groups, the means for each group were close. Mean student scores for the Target group were 87.8; for the Other group the mean was 88.0. The mean standard deviation for the Target schools was 11.6, compared to 10.1 for the Others. The Target schools did show more variability in range than did the Others with a difference in range of 15.7 points, indicating greater heterogeneity of achievement levels in Target schools.

Table 5

Summary of the Mean of Individual Test Scores (I.M.), Standard Deviation (S.D.), Minimum Score (MIN), Maximum Score (MAX), Range of Scores (RG), and Count (CT) the 1986-87 Proficiency Test in Target and Other Schools for Math and Language

	I.M	S.D.	MIN	MAX	RG	CT
MATH						
A-EAST	87.5	10.6	40	100	60	160
FULTON	92.0	10.1	23	100	77	156
RULE	83.9	14.0	42	100	58	79
X TARGET	87.8	11.6	35	100	65	395*
HOLSTON	92.8	6.3	65	100	35	94
SOUTH-YOUNG	87.0	11.5	45	100	55	159
WEST	84.2	12.4	42	100	58	174
X OTHERS	88.0	10.1	51	100	49	427*
LANGUAGE						
A-EAST	79.0	10.4	50	97	47	163
FULTON	79.5	13.0	31	98	67	166
RULE	75.4	12.0	37	95	58	79
X TARGET	78.0	11.8	39	97	57	408*
HOLSTON	85.0	10.2	42	99	57	96
SOUTH-YOUNG	77.0	16.1	23	100	77	159
WEST	78.0	12.2	30	99	69	175
X OTHER	80.0	12.8	32	99	68	430*

* This figure is sum of count rather than an average.

Comparisons of the mean scores for LA yield similar results as for the M scores discussed above. The mean scores of each school for Target (78.0) and Others (80.0) are very close. The standard deviations (Target 11.8,

Others 12.8) are different by 1.0. Variabilities within groups are similar to that reported for M, except that South-Young, rather than West, showed the lowest mean student score for the Others.

Number and Percent Passing Both Proficiency Tests

The comparisons listed thus far show an improving general trend on the part of the (X) schools as compared to the results for the (O) schools for both the M and the LA scores. Table 6 offers a different comparison of these results; the number and percent of students passing both the M and the LA sections of the proficiency test.

The data in Table 6 show the number and percent of grade-nine students by school who "passed" the entire proficiency test, a prerequisite for graduation with a high school diploma in the state of Tennessee. This means that each student counted in this category obtained a score of 70 or greater in both M and LA.

These data were gathered by comparing each M and LA score reported in the state-furnished testing reports, determining the number of students taking both tests (some students took only one subtest, M or LA), and then by counting those students who passed both tests. The scores are reported for all students and also for the handicapped students removed (HR).

Table 6

Number and Percent of Grade Nine Pupils Passing Both 1987
State Proficiency Tests, KCS by High School,
Project (X) or Control (O) Groups, and Total City

	All Students			Omit Handicapped			Condition (X or O)	Differences*	
	Take	Pass	% Pass	Take	Pass	% Pass		n	%
Austin E.	193	132	68.4	160	132	82.5	X	33	+14.1
Bearden	314	290	92.4	304	287	94.4	N/A	10	+ 2.0
Central	366	328	89.6	362	327	90.0	N/A	4	+ .4
Fulton	169	133	78.7	157	131	83.4	X	12	+ 4.7
Holston	99	91	91.9	94	88	93.6	O	5	+ 1.7
Rule	81	55	67.9	79	55	69.6	X	2	+ 1.7
S. Young	177	118	66.7	159	118	74.2	O	18	+ 7.5
West	188	127	67.6	171	123	71.9	O	17	+ 4.3
<u>All City</u>			78.6				- Not Available -		
<u>8 H.S.</u>	1587	1274	80.3	1486	1261	84.9	N/A	101	+ 4.6
3 X	443	320	72.2	396	318	80.3	X	47	+ 8.1
3 O	464	336	72.4	424	329	77.6	O	40	+ 5.2
2 "other"	680	618	90.9	666	614	92.2	N/A	14	+ 1.3
5 Non-X HS	1144	954	83.4	1090	943	86.5	N/A	54	+ 3.1

*Differences indicate All minus Handicapped. These results were not available for the Total (All City), only on a school-by-school basis.

Source: The Knoxville City Schools (KCS) Proficiency Test Project for Grade Nine Pupils in Three Inner-City Schools, 1984-1987 Evaluation Report. Achilles et al., 1987a.

Note that for all students, the percent passing for the 3 (X) schools (72.2 percent passing) is within .2 percent of the scores for the 3 (O) schools (72.4 percent passing). When handicapped students are removed to show data similar to previous reporting years, the (X) schools (80.3 percent) surpass the (O) schools (77.6 percent) in the percent of students passing both parts of the proficiency test. Looking at the column which omits the handicapped, the (X) schools are within 4.6 percent of the mean passing in all 8 HS, and are within 6.2 percent of the mean passing in the 5 non-X HS. When the total testing performances of the (X) and the (O) students are analyzed, the (X) schools have not only caught up, they are now slightly more successful than the (O) schools.

The last column in Table 6 noted the differences in the percent of students passing when handicapped students were removed from the tally. For some schools--Bearden, Central, Holston, and Rule--inclusion of the handicapped in the totals made little difference in the total results. For other schools, (notably Austin East with a 14.1 percent difference) removal of the handicapped made a large impact. Overall, removal of handicapped students' scores made considerable difference between the scores of the Target (X) and five Other schools (5 percent), between (X) and (O) at 2.9 percent, and between (X) and the 8 HS (3.5 percent).

There is a disproportionate percent of handicapped pupils (non gifted) in the (X) schools.

The Rankings of KCS High Schools and Changes,
1982-1984 Base and 1987

One of the original problems faced by the three (X) schools was that they repeatedly placed at or near the bottom of the total of the 8 city HS in both M and LA when schools were ranked based on percent passing the proficiency tests. Table 7 reports the rankings in M and LA for the baseline years and compares these rankings to those of the project years for each of the 8 high schools.

The rankings were compared by simply adding their face values. For example, the sum of the lowest possible ranks for three years (8, 8, 8) would total 24. The highest possible rank (1, 1, 1) would total 3 over three years. The lower the sum of the ranks, the higher the ranking.

In 1982, the three (X) schools ranked 8, 4, and 7 (19) in M and 8, 6, 7 (21) in LA. In 1987 the three (X) schools ranked 4, 2, 8 (14) for M and 5, 4, 8 (17) for LA. This is a change of 5 in M and 4 in LA, for a total positive gain of 9 places. The gain from the average of the baseline years, 1982-84, was 5 in M and 3 in LA, for a total positive gain of 8 places.

Table 7

Rank (1-8) of Knoxville City High Schools (1982-1987) by Percentage of Grade Nine Pupils Passing
Math (M) and Language Arts (LA) Proficiency Tests and Differences (+,-) in Ranks
1982-84 to 1985, to 1986, to 1987; 1985 to 1986, 1986 to 1987

	1982		1983		1984		82-84**				1985		Diff. 82-84/85		1986		Diff. 82-84/86		Diff. 85-86		1987		Diff. 86-87		Diff. 82-84/87		
	N	LA	M	LA	M	LA	N	M	LA	N	LA	M	LA	M	LA	M	LA	M	LA	M	LA	M	LA	M	LA	M	LA
A. East*	8	8	8	8	7	7	23	8	23	8	7	6	+1	+2	7	7	+1	+1	0	-1	4	5	3	2	4	3	
Bearden	3	1	3	1	2	1	8	3	3	1	2	1	+1	0	2	2	+1	-1	0	-1	1	1	1	1	2	0	
Central	2	2	1	2	3	2	6	2	6	2	4.5	4	-2.5	-2	4	3	-2	-1	+5	+1	3	3	1	0	-1	-1	
Fulton*	4	6	4	5	4	5	12	4	16	5	3	3	+1	+2	5	6	-1	-1	-2	-3	2	4	3	2	2	1	
Holston	1	5	2	4	1	3	4	1	12	4	1	2	0	+2	1	1	-1	-1	-2	0	6	2	-5	-1	-5	2	
Rule*	7	7	7	7	8	8	22	7	22	7	6	8	+1	-1	8	8	-1	-1	-2	0	8	8	-0	0	-1	-1	
S. Young	6	4	6	6	6	6	18	6	18	6	8	7	-2	-1	3	5	+3	+1	+5	+2	5	7	-2	-2	1	-1	
West	5	3	5	3	5	4	15	5	10	3	4.5	5	+5	-2	6	4	-1	-1	-1.5	+1	7	6	-1	-2	-2	-3	

* = Target Schools

** = Possible range is from 3 (best) to 24 (worst)

N = Sum of Ranks 1982-1984; RK = Rank of N.

r_M (82-84 and 85) = .83 (.05)

r_{SM}^{LA} (82-84 and 86) = .79 (.05)

r_{SM}^{LA} (85 and 86) = .58 (.NS)

r_{SM}^{LA} (86 and 87) = .40 (.NS)

r_S^{LA} (82-84 and 87) = .33 (.NS)

r_{LA}^{LA} (82-84 and 85) = .73 (.05)

$r_{S_{LA}}^{LA}$ (82-84 and 86) = .81 (.05)

$r_{S_{LA}}^{LA}$ (85 and 86) = .79 (.05)

$r_{S_{LA}}^{LA}$ (86 and 87) = .70 (.NS)

r_S^{LA} (82-84 and 87) = .69 (.NS)

Source: The Knoxville City Schools (KCS) Proficiency Test Project for Grade Nine Pupils in Three Inner-City Schools, 1984-1987 Evaluation Report. Achilles et al., 1987a.

The Spearman rho (r_s) computation shows that there is no significant relationship between the rankings of the schools 1982-84 and 1987 for either M (.33) or LA (.69) (df. 7, $p \leq .05 = .7545$). There have been enough positive gains in the rankings for the (X) schools since the baseline years that the rankings are different. The biggest changes among (X) schools were achieved by Austin East, which went from 8th (last) in both M and LA to a ranking of 4 in M and 5 in LA.

Detailed Internal Analysis of the Sample

The results from Table 2, p. 60, and Table 4, p. 66, show that although the Target (X) schools have made impressive gains during the project years, the mean scores for Other (O) schools in M and LA, compared separately, are still slightly higher. An internal analysis of samples of students from each group of schools shows, however, that there are no significant differences between the percent of pupils passing M and LA in two groups by the end of the third year of the project.

The frequency of pupils in various groups either passing or not passing the M or LA portions of the test was analyzed using a Chi-square design. The analyses were made (1) within a condition (X) or (O) but between the pupil

groups of M/F, NFL/FL, or W/NW and (2) within pupil groups of M, F, NFL, FL, W, NW, but between conditions (X) or (O).

Table 8 shows the χ^2 values for each comparison. Comparisons had one degree of freedom: $\chi^2 = 3.84 = p \leq .05$. There were no significant differences in any of the 24 comparisons, indicating that pupil performance was essentially the same between the (X) and (O) conditions.

An Analysis of Variance (ANOVA) was run on the same six pupil groups and two conditions described above. The results are shown in Table 9 and Table 10.

Table 9 shows the results between the (X) and (O) conditions on subject area (M or LA) for the six pupil groups. For example, one such comparison shows that for Math, there were no significantly different results in any of the analyses of the mean scores (X or O) for Males and Females.

Table 10 shows the results for the six pupil groups by subject (M or LA) within the condition of (X) or (O). For example, the mean test results in Math were compared within the Target sample (X) for differences between M/F, W/NW, and FL/NFL. A similar comparison was made for the Control (O) sample. Again, there were no statistically significant results in any of these analyses.

Table 8

The χ^2 Results for Differences in Frequencies of Groups of Pupils (M/F, W/NW, FL/NFL) Passing/Failing the KCS Proficiency Tests (1987) for M and LA in the X and O Samples
 (1 df, $\chi^2 = 3.84 = p \leq .05$)

Groups	Condition	χ^2	Sig.	Group/Condition	χ^2	Sig.
<u>Math</u>						
M/F	X	.05	ns	MX MO	1.21	ns
M/F	O	2.09	ns	FX FO	.57	ns
W/NW	X	.04	ns	WX WO	.05	ns
W/NW	O	1.53	ns	NWX NWO	1.58	ns
FL/NFL	X	.02	ns	FLX FLO	.04	ns
FL/NFL	O	.02	ns	NFLX NFLO	.01	ns
<u>LA</u>						
M/F	X	.11	ns	MX MO	.55	ns
M/F	O	1.47	ns	FX FO	.12	ns
W/NW	X	.47	ns	WX WO	.07	ns
W/NW	O	.05	ns	NWX NWO	.34	ns
FL/NFL	X	.01	ns	FLX FLO	.29	ns
FL/NFL	O	.50	ns	NFLX NFLO	.01	ns

Source: Evaluation of Three Years of a Basic Skills Remediation Project in Tennessee. Achilles et al., 1987b.

Table 9

ANOVA Results: Race (W/NW); Sex (M/F), SES (FL/NFL) of
Mean Test Results for M and LA Between the X and O
Samples, KCS 1987 Proficiency Tests

Subj.	Cond.	Groups	Df	F-Test	Sig.
M	X,O	M/F	3	1.132	ns
LA	X,O	M/F	3	.537	ns
M	X,O	W/NW	3	.839	ns
LA	X,O	W/NW	3	.095	ns
M	X,O	FL/NFL	3	.052	ns
LA	X,O	FL/NFL	3	.875	ns

Source: Evaluation of Three Years of a Basic Skills
Remediation Project in Tennessee. Achilles et al., 1987b.

Table 10

ANOVA Results: Race (W/NW), Sex (M/F), SES (FL/NFL) of
Mean Test Results for M and LA Within the X and O
Samples, KCS, 1987 Proficiency Tests

Subj.	Cond.	Groups	Df	F-Test	Sig.
M	X	(M/F, W/NW, FL/NFL)	5	.690	ns
M	O	(M/F, W/NW, FL/NFL)	5	.417	ns
LA	X	(M/F, W/NW, FL/NFL)	5	.428	ns
LA	O	(M/F, W/NW, FL/NFL)	5	.568	ns

Source: Evaluation of Three Years of a Basic Skills
Remediation Project in Tennessee. Achilles et al., 1987b.

Results of Teacher Perceptions

Teachers responded to a survey of their needs and concerns about the Proficiency Project in the Spring of 1987. Previous administrations of this survey occurred in the Fall of 1985 and the Spring of 1986. This survey was revised from a pilot test administered to a small group of teachers in the Fall, 1984 and Spring, 1985.

The results of this survey were previously reported to the Mid-South Educational Research Association (Achilles, Bobbett, Lintz and Puckett, 1987b, p. 13-17). Some of these results are paraphrased here.

The survey covered a series of general topics. Responses for each item are shown in Figure 3. Differences between the beginning of the year (Fall 1985, noted as pre), end of the year (Spring 1986, noted as post) and end of the project (Spring 1987, noted as post 87) were studied. Responses to the survey are shown in most cases as percentages, except where noted otherwise. The totals for respondents and non respondents to each item are also shown. The general agreement between pre/post responses appears as (ns) on those items tested using either Chi-square for frequency or a test for differences in mean "scores" of groups using the assigned values of responses (1-5) as "scores."

Data, except as stated, are reported as percents, which may not total 100% due to rounding. The no response (N/R) category is reported as a number (n), as is the total number of respondents. *=Pre/post analysis of differences in means (1987). Most tests were (ns). 1987 Post test percents are also shown. 1987 Pre (n=61); Post (n=45).

I. TEST OBJECTIVES/SKILL BUILDING:

	NOT APPLICABLE N/A	NOT AT ALL 1	NOT MUCH 2	SOME 3	MUCH 4	VERY MUCH 5	NO RESP (n)	TOT (n)
1. I am familiar with my subject area's test objectives. (*ns)								
Pre	4	0	3	4	23	66	1	72
Post	5	0	0	2	12	81	1	60
Post '87	2	0	0	4	9	84	0	45
2. I am pleased with the manner in which I am informed of the test objectives for my subject area. (*ns)								
Pre	6	3	6	17	30	39	1	72
Post	4	2	5	4	35	51	3	60
Post '87	4	0	9	2	27	58	0	45
3. I plan lessons according to the test objectives. (*ns)								
Pre	9	0	3	9	34	46	2	72
Post	4	0	0	5	26	65	3	60
Post '87	9	0	0	2	33	56	0	45
4. I pattern my teacher-made tests after the standardized format. (*ns)								
Pre	11	4	16	39	17	13	1	72
Post	4	2	12	39	25	19	3	60
Post '87	9	2	2	47	24	16	0	45
5. I use the Pretest scores in my classroom planning and management: for overall class instruction. (*ns)								
Pre	11	4	0	21	30	33	2	72
Post	2	2	7	25	26	39	3	60
Post '87	9	0	2	18	33	38	0	45
- for small group instruction (*ns)								
Pre	12	4	4	35	28	16	4	72
Post	4	5	11	26	32	23	3	60
Post '87	12	0	5	34	24	24	4	41

Figure 3. Proficiency project: Language arts and math teacher needs and concerns (summary of pre/post responses of teachers, 1985-86, 1987).

Source: Evaluation of Three Years of a Basic Skills Remediation Project in Tennessee. Achilles et al., 1987b.

for individual instruction (*ns)

Pre	15	3	3	31	22	27	4	72
Post	2	4	9	26	22	37	6	60
Post '87	10	0	3	43	18	28	5	40

6. I have completed Professional Growth activities for Teacher Training (*ns).

Pre	57 Yes	43 No	21 NR(n)	72 TOT(n)
Post	68 Yes	32 No	19 NR(n)	60 TOT(n)
Post '87	76 Yes	24 No	12 NR(n)	45 TOT(n)

List	Pre (n)	3	20	0	49	72
	Post (n)	6	11	6	37	60
	Post '87 (n)	2	18	1	24	45
		GRAD TNG	TIM	OTHER	NR	TOT

7. I teach L.A. and Reading as separate subjects. (Middle School only)

Pre (n)	20 Yes	8 No	34 N/A	10 NR	72 TOT
Post (n)	19 Yes	10 No	29 N/A	2 NR	60 TOT
Post '87 (n)	12 Yes	5 No	28 N/A	0 NR	45 TOT

8. I adhere to the adopted reading skills development program (Harcourt, Brace, and Jovannovich). (Middle School only) (*ns)

Pre (n)	34	0	1	5	4	6	22	72
Post (n)	20	1	0	2	7	3	27	60
Post '87	4	0	0	3	4	4	28	45

9. The HBJ Reading Program is adequate for teaching the skills to be tested. (Middle School only) (*ns)

Pre (n)	34	0	3	6	5	4	20	72
Post (n)	16	1	3	5	5	1	29	60
Post '87	4	0	4	1	5	2	29	45

10. I adhere to the adopted Math skills program test: (*ns)

Pre	57	2	2	5	11	23	28	72
Post	63	0	3	11	13	11	22	60
Post '87	39	4	4	4	17	31	22	45

11. The adopted text (program) is adequate for teaching the skills to be tested. (*ns)

Pre	32	2	11	9	28	17	19	72
Post	40	9	2	16	27	7	15	60
Post '87	15	3	6	27	27	21	12	45

Figure 3 (continued)

II. CLASSROOM MANAGEMENT AND HUMAN RELATIONS:

		N/A	1	2	3	4	5	NR	TOT	
1.	I have an open line of communication with:**									
a.	Principal (*ns)	Pre	0	0	2	7	29	62	4	72
	(or assistant)	Post	2	0	0	13	32	53	0	60
		87 Post	2	0	0	11	27	59	1	44
b.	Supervisor (*ns)	Pre	9	6	5	18	18	44	6	72
		Post	4	4	9	17	28	38	0	60
		87 Post	10	2	2	24	27	34	4	45
c.	Basic Skills	Pre	0	0	0	19	28	53	4	72
	Teacher(s) (*ns)	Post	3	0	2	12	32	51	1	60
		87 Post	7	0	2	11	16	64	1	45
d.	Colleagues (*ns)	Pre	0	0	0	10	19	71	5	72
		Post	0	0	3	13	28	55	0	60
		87 Post	0	0	2	9	33	56	2	45
e.	Parents (*ns)	Pre	0	2	16	37	16	28	5	72
		Post	0	3	19	47	19	12	2	60
		87 Post	0	7	14	43	21	16	1	45
f.	Students (*ns)	Pre	0	0	0	9	27	65	4	72
		Post	0	0	0	5	35	60	0	60
		87 Post	0	0	0	7	30	64	1	45
g.	Community and	Pre	3	11	17	41	14	14	8	72
	Community Orgs.	Post	4	18	14	53	4	9	3	60
	(*ns)	87 Post	2	16	14	51	9	7	2	45
		NOT APPLICABLE	NOT AT ALL	NOT MUCH	SOME	MUCH	VERY MUCH	NO RESP	TOT	
		N/A	1	2	3	4	5	(n)	(n)	
2.	Generally my classes complete assigned homework. *.01 (favor pre.) (2.70 df 101).									
		Pre	6	3	9	25	46	12	4	72
		Post	7	5	14	42	32	0	1	60
		Post 87	7	5	16	36	34	2	1	45
3.	Problems with classroom discipline interfere with my teaching effectiveness. *ns									
		Pre	7	21	40	25	6	4	4	72
		Post	9	31	26	21	9	5	2	60
		Post 87	5	7	35	35	12	7	2	45

** Figure shows the similarity of the 1987 pre/post analyses of these items. All items (pre/post) were ns.

Figure 3 (continued)

Post test only

4. I used the services of the proficiency teaching to foster my basic skills/proficiency program.

1986	2	2	7	35	38	16	5	60
1987	12	0	7	22	39	20	4	45

5. The proficiency Teacher could best help me by providing (check the appropriate space(s):

	<u>Pre</u>		<u>Post</u>		<u>Post '87</u>	
	<u>n</u>	<u>Rk</u>	<u>n</u>	<u>Rk</u>	<u>n</u>	<u>Rk</u>
Motivation/Incentive	27	3	42	4.5	30	4.5
Line of communication (Positive PR)	23	4.5	51	3	34	2
Helpful suggestions/Information	39	2	52	2	36	1
Useful Materials	55	1	53	1	32	3
Consistent follow-up	23	4.5	42	4.5	30	4.5
Other - please list	3	6	7	6	2	6

6. I would like to make the following comments/suggestions:

	<u>Pre</u>		<u>Post</u>		<u>1987</u>
	<u>n</u>	<u>Rk</u>	<u>n</u>	<u>Rk</u>	<u>Rk</u>
1. Too much too soon (ask too much of teachers/students)	2	3	1	5	3
2. Pleased with Prof Tch and/or special Prof activities	10	1	12	1	3
3. Special requests of Prof. Tch. for needed service	9	2	4	3.5	1
4. Need for more overall support of Basic Skills program activities	0	0	4	3.5	5
5. Need for services other than those provided	0	0	8	2	3
NR	51	0	31	0	

7. My greatest concern in teaching is:

	<u>Pre</u>		<u>Post</u>		<u>1987</u>
	<u>n</u>	<u>Rk</u>	<u>n</u>	<u>Rk</u>	<u>Rk</u>
1. Motivation of Students: Students/Parents/Teachers	11	1	13	1	1
2. All learning is centered on Basic Skills	4	6	3	6	2.5
3. Having enough time to develop materials/tch objectives	5	3.5	3	6	4.5
4. Combination of 1-3 (Concern for teaching adequacy)	1	8	6	2	8.5
5. Student Scheduling/Placement	4	6	1	8.5	7
6. Student comprehension/retention	4	6	4	3.5	2.5
7. Lack of adequate materials	6	2	4	8.5	6
8. Positive classroom mgt. and discipline	5	3.5	1	8.5	4.5
9. Lack of coord. curric. (Other).	0	0	3	6	8.5
NR	32	0	22	0	17

POST TEST ONLY

LIST ACTIVITIES YOU PROVIDED THIS YEAR, BUT NOT LAST YEAR.

	<u>n</u>	<u>Rk</u>	<u>1987</u>	<u>Rk</u>
1. Implemented special instruction programs/techniques	14	1	3.5	
2. More comprehensive/active use of Basic Skills Program	4	2	1	
3. Special student tutor/assist sessions on problem skills	2	3.5	2	
4. More involvement and encouragement of parent participation	2	3.5	5	
NR	38	0	29	

Figure 3 (continued)

In most cases there was little difference between pre and post responses. Statistically, no significance was found in any analysis of frequency or differences in mean scores. However, some patterns and shifts in teacher responses are worth noting.

Question 4 asks if teachers patterned their teacher-made tests after standardized test formats. There was some shift in response from pre to post, with a larger percent of teachers answering the question affirmatively on the post. Item 5 asked whether or not teachers used pretest scores to help plan instruction and manage the classroom. In 1987, a majority of teachers (approximately 90 percent) responded positively to this question. This was an improvement over the first year responses of approximately 50 percent, and may reflect a growing concern for using data from the monitoring of student achievement in instructional planning (one of the effective schools correlates). Question 11 asked whether or not teachers felt that the adopted text was adequate for teaching the math skills tested by the state proficiency test. Although the responses are generally positive in nature, there is little enthusiasm for the match between adopted text book program and the skills to be tested.

The second section of the questionnaire asked teachers to comment on their lines of communication with other people

within the educational structure; administrators, peers, parents, students, and community. There are generally positive responses to the communications question except in the area of "community and community organizations," where 28 percent of the responses (pre) are quite positive and only 13 percent of the post responses and 16 percent of the responses (post87) are positive. These teachers are indicating that they do not have open lines of communication with the community, and that this communication did not improve throughout the project. Since communication with the community is an effective school characteristic, this may be a concern for future project efforts.

The teachers indicated the proficiency teacher is helpful to them, and for 1987 ranked in first place the helpful suggestions and information that the proficiency teacher was able to give. Providing a positive line of communication was the second-ranked, most helpful behavior, perhaps reinforcing a general feeling of isolation felt by the teachers in response to earlier questions. Providing useful materials slipped from the first to the third ranking for 1987, perhaps an indication that the need for alternative materials to teach proficiency objectives are gradually being met.

One section of the questionnaire gave the teachers an opportunity to respond to an open-ended question, "I would

like to make the following comments and suggestions." The most frequent comments were positive responses regarding proficiency teachers and special proficiency project activities. Another question, "My greatest concern in teaching is . . ." revealed that student motivation has ranked of major concern across all project years. Lack of adequate material was the second ranked concern in the project's early years, but concern over student retention and too much emphasis on Basic Skills became the focus of teacher concern the final year of the project.

One result of the survey, the high percentage of teachers indicating no professional growth activities, is of some concern. Over 40 percent of the pre and nearly 25 percent of the post 87 responses indicated no professional growth activities. Additionally, a high number of the teachers (21 of 72 pre: 12 of 45 post) did not respond to this question, indicating that even more serious attention should be given to educator inservice and continuing professional growth issues.

CHAPTER V

SUMMARY, CONCLUSIONS, AND DISCUSSION

This study attempted to determine whether or not it was possible to increase the percent of grade-nine pupils passing the state proficiency test (Math, or M and Language Arts, or LA) in the three target schools (X) and to reduce the disparities between the percent passing in (X) and in the City, in other (n=5) high schools, and in the designated three "control" (O) schools through implementation of a "Proficiency Project" emphasizing basic skills achievement.

The results of this project show improvement in proficiency test scores of selected grade-nine pupils through the application of the Proficiency Project in the Knoxville City Schools for the years 1985-87. This improvement is compared to a baseline of proficiency scores from the years 1982-84, when proficiency testing was required but additional concentration and support for raising the scores was not in effect.

The results showed that:

1. Target schools gained in M from 76.2 percent to 92.7 percent and from 78.9 percent to 87.6 percent in LA. Differences in percent passing M between Target and Other schools decreased from

12.4 percent to 1.7 percent; differences for LA decreased from 21.5 percent to 6.5 percent.

2. The gains in proficiency scores for the city from the baseline years to the present were 9.2 percent in M and 13.5 percent in LA. These gains were more a result of growth in Target schools than in Other schools. Two out of three Target schools exceeded the average gains for the city in M, and all Target schools exceeded the average gains in LA. Only 20 percent of the Other schools exceeded the average gains for the city in both M and LA.
3. When individual student scores are analyzed, there is little difference between mean scores of Target or Other schools in either M or LA. Target schools were within .2 percent of Other schools in M, and within 2 percent of other schools in LA. The mean of the indicators of variability within the populations that were used show that both groups vary to a similar extent.
4. When looking at the number of students passing both the M and LA sections of the proficiency test, the Target schools surpass the Other schools in the percent of students passing. Moreover, the Target schools are within 4.6 percent of the mean passing in all 8 HS.

5. An internal analysis of samples from the Target (X) and Other (O) populations showed no significant differences between the percent of pupils passing M and LA. When the various demographic groupings of sex, race, and socioeconomic status (SES) were disaggregated, there were no significant differences in pupil performance between or among the groups.
6. Teacher perceptions surveyed yielded no significant differences between pre and post responses, but did point to general trends of opinion. More teachers reported using pretest scores to plan and manage classroom instruction at the end of the project. Open lines of communication with the community did not improve during the project years and remained a source of concern in the post responses. A large percentage of teachers were still reporting little or no professional growth activities in the post data, indicating an area still in need of attention.

As the results have shown, the percent passing (1987) in both M and LA increased quite dramatically from the 1982-84 mean in the Target schools, demonstrating that it is possible to increase the percent of pupils passing the proficiency test by emphasizing basic skills achievement.

This project demonstrates that it is possible to reduce the disparities the Target schools have suffered on basic skills measures when compared to other schools in the city. The Target schools, which started with an 8.6 percent difference from the mean of the 8 HS in Math are now very close, showing only a 1.3 percent difference. In LA, the target schools are within 4.7 percentage points of the 8 HS mean, recovering from an initial disparity of 14.9. The differences between the Target schools and the Others has been reduced to 1.7 percentage points in M and 6.1 percentage points in LA.

This project has also met and demonstrated some of the characteristics of instructionally effective schools: in particular, teaching emphasis on basic skills, high achievement expectations, and monitoring of student progress. In instructionally effective schools, standardized measures of basic skills (according to Edmonds, 1979) show no disparity based on race or socio-economic status. In this project, analysis of test results show no significant differences between and among samples of students in X schools disaggregated by race, sex, socioeconomic status, or subject area.

The literature review and the results of this project come together in such a way as to support the conclusion that a program which emphasizes basic skills can show

significant improvement in test scores of schools which have high proportions of lower achieving, lower socioeconomic level students. As Edmonds (1979) stated earlier, it is possible to bring "the children of the poor to those minimal masteries of basic skills that now describe minimally successful pupil performance for the children of the middle class."

This is not to claim that the three Target schools, whose SES levels are among the lowest in Knoxville, are now equal in achievement to the average of all the schools in the city. This project did not measure achievement in such broad terms. Rather, achievement was narrowly defined as passing, with a 70 percent mastery criterion, the M and LA portions of the Tennessee State Proficiency Test. This standard is a minimal expectation, at best, of student achievement for all grade-nine students, regardless of their SES, but is most certainly an expectation for those of the middle class. This minimal expectation is now a reality for the children of the poor, as evinced by the measured performance documented in this project. Further study could document and elaborate what could happen if such minimal standards were raised to include, for example, standard scores on group measures of general achievement, such as the Stanford Achievement Test.

The large increases in Proficiency Test scores shown by the Target schools call for some interpretation of patterns

of growth. For example, the Austin-East increase in percent passing in M from 60.8 percent to 93.1 percent, and the similar increase in L from 42.8 percent to 81.6 percent, is remarkable growth. None of the Other schools was able to exhibit that kind of increase. For example, the percent passing at Bearden increased only 5.4 percent over the three project years in M, from 93.0 percent to 98.4 percent, and increased only 4.5 percent in L, from 89.7 percent to 94.2 percent. One explanation for the dramatic differences in percent passing a test is that when students start so low (as at Austin East) they have further to go than others (greater potential for improvement). While an increase from 42.8 percent to 81.6 percent is substantial, the increase from 89.7 percent and 94.2 percent may really be the more difficult achievement. Further study regarding school patterns of sustained growth is needed to help sort out these types of ideas.

The increased attention given to teaching basic skills has provided positive results in basic skills achievement. The relatively modest investment in the salaries of three teachers, each serving two schools, has been cost-effective in that very positive results have been achieved for a small gain in total budget expenditures. One assumption that can be drawn from this project is that by being given a relatively small case load, the proficiency teacher was able to focus her time and talents on a specific population,

allowing for a personalized service for teachers and students alike. By developing activities that emphasized basic skills across all subject areas, the proficiency teachers were able to increase student exposure over and above what would normally be expected in traditional English and Math classes. Being assigned to two schools limited the amount of planning necessary to serve the targeted teachers and students and probably contributed to the success of the project. Further study could determine the maximum proficiency teacher caseload that would still achieve similar positive results.

The results of the teacher survey have shown a gradual, more positive response pattern among the classroom teachers toward the proficiency teachers in general, and a trend toward a change in teaching strategies more in line with effective schools correlates. This trend can be interpreted as a gradual reduction in the sense of isolation that the classroom teachers have been expressing. In many cases, the proficiency teacher participated in what could be described as peer coaching (Garmston, 1979). The results indicated by the classroom teachers in the survey are evidence that the proficiency teacher model has a positive effect not only on the teaching of basic skills, but also on a generally positive teacher outlook.

In summary, the Proficiency Project accomplished what it set out to do. Students in the Target schools, representative of populations having the greatest percentage of lower socioeconomic level students in Knoxville, were able to increase their performance substantially on a minimal test of competency in basic skills required in Tennessee of all students for graduation. The approach, that of attention to basic skills throughout the academic disciplines, has been successful according to the criteria set up for project success at the outset. The literature, through the effective schools movement, supports the probability of a strong relationship between this treatment and the results achieved.

The challenge, now, is twofold. First, the Target schools must maintain and sustain the steady growth that has been shown to be possible. As the literature has shown, effective schools are highly dependent upon the interest and the abilities of the people who work for their success. Determining allocation of staff resources in these schools will be the first challenge.

Second, the Target schools may now need to grow beyond the basics. Basic skills instruction, in and of itself, can lead to a dull, isolated curriculum with few creative choices. The challenge will be to continue a measured vigilance towards keeping the basic standards high, while

finding further measurable academic challenges that will allow the children of the poor to achieve the same educational birthright available to more advantaged peers.

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