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ABSTRACT

This paper describes the second year of the Success for All program, which tries to assure that each student in an inner-city school succeeds in acquiring basic skills in the early grades. The program was first implemented in the 1987-88 school year in Abbottson Elementary School in Baltimore. First year results revealed substantially higher student performance in language and reading, and substantially reduced student retention and placement in special classes in comparison with a matched school. This paper adds four major sets of findings to the earlier study. The discussion covers: (1) results of the second year of program implementation at the pilot school; (2) the evaluation of a replication of Success for All in its fully funded form in one of the poorest elementary schools in Baltimore; (3) the evaluation of a form of Success for All designed to be implemented under Chapter 1 schoolwide funds with relatively minor additional costs; and (4) the evaluation of the beginning reading component of the program. Sections of the document detail program elements, variations, evaluation design, and results. Findings imply that the insur. of kindergarten children's success at school may almost eliminate the need for retention in grade and placement in special classes. (RH)

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THE JOHNS HOPKINS UNIVERSITY

SUCCESS FOR ALL

Effects of Variations in Duration and Resources of a Schoolwide Elementary Restructuring Program

Robert E. Slavin

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The Center

The mission of the Center for Research on Effective Schooling for Disadvantaged Students (CDS) is to significantly improve the education of disadvantaged students at each level of schooling through new knowledge and practices produced by thorough scientific study and evaluation. The Center conducts its research in four program areas: The Early and Elementary Education Program, The Middle Grades and High Schools Program, the Language Minority Program, and the School, Family, and Community Connections Program.

The Early and Elementary Education Program

This program is working to develop, evaluate, and disseminate instructional programs capable of bringing disadvantaged students to high levels of achievement, particularly in the fundamental areas of reading, writing, and mathematics. The goal is to expand the range of effective alternatives which schools may use under Chapter 1 and other compensatory education funding and to study issues of direct relevance to federal, state, and local policy on education of disadvantaged students.

The Middle Grades and High Schools Program

This program is conducting research syntheses, survey analyses, and field studies in middle and high schools. The three types of projects move from basic research to useful practice. Syntheses compile and analyze existing knowledge about effective education of disadvantaged students. Survey analyses identify and describe current programs, practices, and trends in middle and high schools, and allow studies of their effects. Field studies are conducted in collaboration with school staffs to develop and evaluate effective programs and practices.

The Language Minority Program

This program represents a collaborative effort. The University of California at Santa Barbara is focusing on the education of Mexican-American students in California and Texas; studies of dropout among children of recent immigrants are being conducted in San Diego and Miami by Johns Hopkins, and evaluations of learning strategies in schools serving Navajo, Cherokee, and Lumbee Indians are being conducted by the University of Northern Arizona. The goal of the program is to identify, develop, and evaluate effective programs for disadvantaged Hispanic, American Indian, Southeast Asian, and other language minority children.

The School, Family, and Community Connections Program

This program is focusing on the key connections between schools and families and between schools and communities to build better educational programs for disadvantaged children and youth. Initial work is seeking to provide a research base concerning the most effective ways for schools to interact with and assist parents of disadvantaged students and interact with the community to produce effective community involvement.

Abstract

This report presents the results of the implementation of the Success for All elementary school restructuring program after two years in Abbottston Elementary School in Baltimore and after one year in City Springs Elementary School in Baltimore. It also presents results of one-year implementations of a less extensive Success for All program in four schools and year-and-a-half implementations of the beginning reading curriculum of Success for All in two other schools. Overall, the effects on student pre-reading and reading achievement from preschool through fourth grade indicate that Success for All is moving in the right direction toward the program's goal of insuring that all students be at grade level in reading by the end of third grade.

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Introduction

This is a time of rapid change and new opportunities for research and practice relating to the education of students who are at risk of school failure. The education of disadvantaged students is being seriously discussed at all levels of government and society. Although most federal education programs are falling behind the rate of inflation, funding for Chapter 1 (programs for low achieving disadvantaged students) was increased in 1989 by nearly a billion dollars, to five billion per year. Changes in Chapter 1 implemented under the Hawkins-Stafford bill of 1988 have encouraged school districts to implement a more diverse range of Chapter 1 programs. In particular, many inner-city districts are taking advantage of the bill's provision that schools serving very disadvantaged populations can use their Chapter 1 dollars to serve all students (see Committee on Education and Labor, 1989).

While there is now an unprecedented willingness to experiment with alternative instructional models in schools serving disadvantaged students and a willingness to spend more on programs with demonstrated effectiveness, few coherent models have been designed for schoolwide use in schools that serve disadvantaged students, and fewer still have convincing evidence that they increase student achievement.

One exception to this is a program called Success for All (Slavin, Madden, Karweit, Livermon, & Dolan, in press). Success for All is designed to attempt to ensure that every student in a high-poverty school will succeed in acquiring basic skills in the early grades. Success is defined as performance in reading, writing, language arts, and mathematics at or near grade level by the third grade, and maintenance of this status through the end of the elementary grades, and avoidance of retention or special education. The program seeks to accomplish this objective by implementing research-based preschool and kindergarten programs; beginning and intermediate reading, writing, language arts, and mathematics programs; one-to-one tutoring in reading to students (especially first graders) who need it; frequent assessment of progress in reading, and a family support program.

Success for All was first implemented in the 1987-88 school year in one inner-city Baltimore elementary school, Abbottston Elementary. The first year results revealed substantially higher student performance on measures of language in preschool and kindergarten and on measures of reading in grades 1-3, compared to students in a matched school. Reading gains were especially large for students who had been in the lowest 25% of their grade on pretests; for these students, effect sizes averaged +.80 on individually administered measures. Further, there were substantial reductions in the numbers of students retained or assigned to special education (see Slavin et al., in press).

As impressive as the results were, the Slavin et al. (in press) study has many limitations. First, the program was implemented in only one school. It is unclear to what degree unique characteristics of this school may have influenced the results. Also, the theory underlying the Success for All program depends on a cumulative effect of prevention and early intervention. The first year data indicate a positive direction, but the cumulative impact cannot be determined until more time has gone by.

Success for All is expensive, which limits its implications for practice. Design and evaluation of a less expensive and therefore more replicable form of the program would be of great practical value. Finally, Success for All has many components, and an overall evaluation cannot determine the contribution of each component.

The present paper describes the second implementation year of the Success for All program. It adds four major sets of findings to the earlier Slavin et al. (in press) study. First, this paper presents results of the second year of program implementation at Abbottston Elementary, the original pilot school. Second, it describes the evaluation of a replication of Success for All in its fully funded form (as at Abbottston) in one of the poorest elementary schools in Baltimore. Third, it describes the evaluation of a form of Success for All designed to be implemented under existing Chapter 1 schoolwide funds, with relatively minor additional

costs. Finally, it describes the separate evaluation of the specific beginning reading component of Success for All.

The contribution of this paper is both practical and theoretical. Construction of a form of Success for All that could be successfully used under typical Chapter 1 funding constraints would be a major practical contribution to many Chapter 1 schoolwide projects being formulated under the new Hawkins-Stafford regulations. For theory as well as practice, it is critical to know the cumulative effects of Success for All, whether the program can be successfully transferred to new locations, and what independent effects the innovative beginning reading program developed for Success for All may have.

Program Elements

Success for All exists in three principal forms in the Baltimore City Public Schools. In its original conception, Success for All was intended to provide whatever resources are needed to ensure that every child learned adequate basic skills. To fulfill this guarantee, additional resources must be provided over and above the usual local and Chapter 1 funds received by the school. Two schools are currently implementing this fully funded form of Success for All.

Four additional schools are implementing a less expensive form of the program which is funded primarily by Chapter 1 monies, supplemented by materials, training, and a half-time facilitator from a federal dropout prevention grant. Two schools are implementing the beginning reading program only, without any additional funds. The two fully funded and four Chapter 1-only schools are Chapter 1 schoolwide projects, which means that at least 75% of their students receive free lunch and that they can use their federal Chapter 1 funds to improve the school as a whole rather than to serve only identified students. One of the Chapter 1-only schools contains a number of white as well as African-American students; at all other schools, almost all students are African-American.

The curricula being implemented in all three forms of Success for All are identical, with each school receiving the same curriculum materials and supplies. What varies across the three forms of the program are the numbers of personnel, in particular the numbers of tutors and family support staff. Also, the two fully funded schools have a full-time project facilitator, the four Chapter 1-only schools a half-time facilitator, and the two curriculum-only schools no facilitator. The characteristics of the three forms of the program are described in more detail in a later section.

The main elements of Success for All are described below (adapted from Slavin et al., in press).

Reading Tutors

One of the most important elements of the Success for All model is the use of tutors to promote students' success in reading. One-to-one tutoring is the most effective form of instruction known (see Slavin, Karweit, & Madden, 1989). The tutors are certified teachers with experience teaching Chapter 1, special education, and/or primary reading. Tutors work one-on-one with students who are having difficulties keeping up with their reading groups. The tutoring occurs in 20-minute sessions taken from an hour-long social studies period. In general, tutors support students' success in the regular reading curriculum, rather than teaching different objectives. For example, if the regular reading teacher is working on long vowels, so does the tutor. However, tutors seek to identify learning problems and use different strategies to teach the same skills.

During daily 90-minute reading periods, tutors serve as additional reading teachers to reduce class size for reading to about 15 in fully funded schools and about 20 in Chapter 1 only schools. Reading teachers and tutors use brief forms to communicate about students' specific problems and needs and meet at regular times to coordinate their approaches with individual children.

Initial decisions about reading group placement and the need for tutoring are based on informal reading inventories that the tutors give to each child. Subsequent reading group placements and tutoring assignments are made based on eight-week assessments, which include teacher judgments as well as more formal assessments. First graders receive first priority for tutoring, on the assumption that the primary function of the tutors is to help all students be successful in reading the first time, before they become remedial readers.

Reading Program

Students in grades 1-3 are regrouped for reading. The students are assigned to heterogeneous, age-grouped classes with class sizes of about 25 most of the day, but during a regular 90-minute reading period they are regrouped by to reading performance levels into reading classes of 15 students all at the same level. For example, a 2-1 reading class might contain first, second, and third grade students all reading at the same level.

Regrouping allows teachers to teach the whole reading class without having to break the class into reading groups. This greatly reduces the time spent in seatwork and increases direct instruction time. We do not expect reduction in class size to increase reading achievement by itself (see Slavin, 1989), but it does enable every reading class to be conducted at only one reading level, and the teacher can teach to students at the same level. This will eliminate workbooks, dittos, or other follow-up activities which are needed in classes that have multiple reading groups. The regrouping is a form of the Joplin Plan, which has been found to increase reading achievement in the elementary grades (Slavin, 1987a).

The reading program itself (Madden, Slavin, Livermon, Karweit, & Stevens, 1987) takes full advantage of having 90 minutes of direct instruction. Reading teachers at every grade level begin the reading time by reading children's literature to students and engaging them in a discussion of the story to enhance their understanding of the story, listening and speaking vocabulary, and knowledge of story structure. In kindergarten and first grade, the program emphasizes development of basic language skills with the use of Story Telling and Retelling (STaR), which involves the students in listening to, retelling, and dramatizing children's literature. Big books as well as oral and written composing activities allow students to develop concepts of print as they also develop knowledge of story structure. Peabody Language Development kits are used to further develop receptive and expressive language.

Beginning reading is introduced when students are ready, either in kindergarten or at the beginning of first grade. In this program, letters and sounds are introduced in an active, engaging series of activities that begins with oral language and moves into written symbols. Once letter sounds are taught, they are reinforced by the reading of stories which use the sounds. The K-1 reading program uses a series of phonetically regular but interesting minibooks and emphasizes repeated oral reading to partners as well as to the teacher, instruction in story structure and specific comprehension skills, and integration of reading and writing.

When students reach the 2-1 reading level, they use a form of Cooperative Integrated Reading and Composition (CIRC) (Stevens, Madden, Slavin, & Farnish, 1987) with the district's Macmillan basal series. CIRC uses cooperative learning activities built around story structure, prediction, summarization, vocabulary building, decoding practice, and story-related writing. Students engage in partner reading and structured discussion of the basal stories, and work toward mastery of the vocabulary and content of the story in teams. Story-related writing is also shared within teams.

In addition to these basal story-related activities, teachers provide direct instruction in reading comprehension skills, and students practice these skills in their teams. Classroom libraries of trade books at students' reading levels are provided for each teacher, and students read books of their choice for homework for 20 minutes each night. Home readings are shared via presentations, summaries, puppet shows, and other formats twice a week during "book club" sessions. Research on CIRC has found it to significantly increase students' reading comprehension and language skills (Stevens, et al., 1987).

Eight-Week Reading Assessments

At eight week intervals, reading teachers assess student progress through the reading program. The results of the assessments are used to determine who is to receive tutoring, to change students' reading groups, to suggest other adaptations in students' programs, and to identify students who need other types of assistance, such as family interventions screening for or vision and hearing problems.

Preschool and Kindergarten

Many of the Success for All schools provide a half-day preschool and/or a full-day kindergarten for eligible students. The preschool and kindergarten programs focus on providing a balanced and developmentally appropriate learning experience for young children. The curriculum emphasizes on the development and use of language. It provides a balance of academic readiness and non-academic music, art, and movement activities. Readiness activities include use of the Peabody Language Development Kits and a program called Story Telling and Retelling (STaR) in which students retell stories read by the teachers (Karweit. 1988). Prereading activities begin during the second semester of kindergarten.

Family Support Team

A family support team works full-time in each school. In the fully funded schools, social workers, attendance monitors, and other staff are added to the school's usual staff. In Chapter 1-only schools, the family support team consists of the parent liaison, vice-principal (if any), counselor (if any), facilitator, and any other appropriate staff already present in the school. The family support team provides parenting education and works to involve parents in support of their children's success in school. Also, family support staff are called on to provide assistance when students seem to be working at less than their full potential because of problems at home. Families of students who are not receiving adequate sleep or nutrition, need glasses, are not attending school regularly, or are exhibiting serious behavior problems, receive family support assistance. The family support team is strongly integrated into the academic program of the school. It receives referrals from teachers and tutors regarding children who are not making adequate academic progress and thereby constitutes an additional stage of intervention for students in need above and beyond that provided by the classroom teacher or tutor.

Program Facilitator

A program facilitator works at the school full time to oversee (with the principal) the operation of the Success for All model. Fully funded schools have a full-time facilitator while Chapter 1-only schools have half-time facilitators. The facilitator helps plan the Success for All program, helps the principal with scheduling, and visits classes and tutoring sessions frequently to help teachers and tutors with individual problems. He or she works directly with the teachers on implementation of the curriculum, classroom management, and other issues, helps teachers and tutors deal with any behavior problems or other special problems, and coordinates the activities of the family support team with those of the instructional staff.

Teachers and Teacher Training

The teachers and tutors are regular Baltimore City teachers. They received detailed teacher's manuals supplemented by two days of inservice at the beginning of the school year. For teachers of grades 1-3 and for reading tutors, these training sessions focused on implementation of the reading program, and their detailed teachers' manuals covered general teaching strategies as well as specific lessons. Preschool and kindergarten teachers and aides were trained in use of the STaR and Peabody programs, thematic units, and other aspects of the preschool and kindergarten models. Tutors later received an additional day of training on tutoring strategies and reading assessment.

Throughout the year, inservice presentations covered such topics as classroom management, instructional pace, and cooperative learning; and the facilitator organized many informal sessions were to allow teachers to share problems and problem solutions, suggest changes, and discuss individual children. The staff development model used in Success for All emphasizes relatively brief initial training with extensive classroom followup and coaching and group discussion.

Special Education

Every effort is made to deal with students' learning problems within the context of the regular classroom, as supplemented by tutors. Tutors evaluate students strengths and weaknesses and develop strategies to teach in the most effective way. Tutors also communicate many effective methods of teaching a student to the classroom teacher. It is felt that this intervention forms an important intermediate step between classroom instruction and referral to special education. As a result of this process, once referral is considered appropriate, it is likely to be much more accurate, thus avoiding unnecessary assessments for infocused referrals.

Advisory Committee

An advisory committee composed of the building principal, program facilitator, teacher representatives, family support staff, and Johns Hopkins staff meets regularly to review the progress of the program and to identify and solve any problems that arise.

Program Variations

(1) Abbottston Elementary School

Abbottston is the pilot school for Success for All designed to test (with the project at City Springs) the short- and long-term effects of a program which concentrates significant additional resources at the early grade levels to ensure that all children reach the third grade with adequate skills. The hope is that if we can show substantial and lasting gains, the additional resources expended will be compensated for by significantly reduced needs for special education, remediation, and retentions throughout the grades. Also, if we can establish that all inner-city children can learn with adequate resources and effective programs, additional sources of funds may be forthcoming to provide these resources and programs.

Implementation of the program began at Abbottston in September, 1987. It is funded by Chapter 1 money plus approximately $400,000 in Chapter 2 funds. The Success for All model at Abbottston provides a total of six tutors, an extra teacher to reduce overall class size to 25, an extra preschool teacher and aide to ensure all four-year-olds access to preschool, extended-day kindergarten and kindergarten aides, and a social worker as part of a family support team. A second social worker is provided by the Department of Social Services and a part-time nurse practitioner is provided by the State Health Department.

During 1987-88, Abbottston staff implemented the Success for All reading program in grades K-3, Story Telling and Retelling (STaR) and the Peabody Language Development Program in pre-K, kindergarten, and first grade, and the family support program. The evaluation of this first implementation year was published by Slavin et al. (in press). In 1988-89, the reading program was expanded to include grades 4-5, and mathematics and writing programs were piloted in grades 3-5.

(2) City Springs Elementary School

City Springs is the second school implementing the fully funded form of Success for All. With more than 95% of its students qualifying for free lunch, City Springs is among the historically poorest and lowest achieving schools in Baltimore. The implementation at City Springs began in September, 1988.

As at Abbottston, the implementation focused initially on the reading, STaR, Peabody, and family support programs. The school is receiving approximately $370,000 per year from a private foundation in addition to its usual Chapter 1 funds. It is using these funds to hire a total of nine tutors, a social worker, an attendance monitor, a full-time counselor, and a full-time project facilitator. The school already had adequate staff for preschool and full-day kindergarten.

During the 1988-89 school year, the Success For All reading program was introduced in grades K-3. Preschool, kindergarten, and family support programs were also introduced.

(3) Chapter 1-Only Schools

Abbottston and City Springs will demonstrate what could be achieved in Baltimore City Schools with enhanced levels of funding. But it is also important to design and assess the effects of a program which could be replicated under more realistic funding levels. This is the principal goal of the extension of Success for All to four additional schools in a much less expensive form which could be implemented primarily under Chapter 1 funds. A dropout prevention grant from the U.S. Department of Education provided for training, materials (which replace basals in grades K-1 and reading workbooks in grades 2-3), a district program coordinator, and a half-time facilitator in each school. The original plan was to serve five additional schools, but only four were finally selected because one school that has approximately 750 students in grades pre-K to 2, counts as the equivalent of two schools. Thus, while three of the schools received half-time assistance from a Johns Hopkins-based facilitator, this one received a full-time facilitator. Except for the facilitators, all other staff involved in the Chapter 1-only model are those who would have already been present in the school, under either local or Chapter 1 funds.

The fully funded and the Chapter 1-only forms of Success for All differ primarily in the number of tutors and of family support staff. Abbottston and City Springs have about one tutor for every 25-30 students in grades 1-3; the Chapter 1-only schools have approximately one tutor for every 50-60 students in grades 1-3. Chapter 1-only schools receive the same family support resources as other Chapter 1 schoolwide projects, a full-time parent liaison and a half-time counselor (plus a vice principal in the larger schools). The basic components and curricula of the Chapter 1-only program are the same as those being implemented at Abbottston and City Springs, with adaptations necessitated by the unique needs of the various schools.

The full implementation of Success For All in the Chapter 1-only schools began in November-December, 1988. During the 1988-89 school year, these schools introduced the reading program in grades K-3, the preschool program (in the two schools which offered preschool), and the kindergarten program. One school (Dallas Nicholas Elementary) began as a curriculum-only school (see below), and started implementing the beginning reading model kindergarten in February, 1988, continuing into first grade during the 1988-89 school year.

(4) Curriculum-Only Study

The curriculum-only study evaluated the beginning reading curriculum, which is introduced in the second semester of kindergarten and continued into first grade. (Students in Success for All go on to "Beyond the Basics" when they reach the 2-1 reading level.) The program was introduced in kindergartens at two schools in February, 1988. In September, first grade teachers received the training and materials and continued the program through the 1988-89 school year.

Evaluation Design

Matching

Each of the eight Success for All schools was matched with a comparison school that was similar in the percent of students receiving free lunch, historical achievement level, and other factors. Within each matched school, students were individually matched on spring 1988 California Achievement Test (CAT) scores. (The original pilot school, Abbottston Elementary, was matched with its comparison school on spring 1987 scores.) Abbottston and comparison students who lacked 1987 scores were matched on spring 1988 scores.

Measures

At Abbottston and City Springs and their comparison schools, all students in grades Pre-K to 4 (Abbottston) and Pre-K to 3 (City Springs) were given individually administered tests in spring 1989. All first graders at the curriculum-only schools and their comparison school were

also individually tested. In the four Chapter 1-only schools and their comparison schools, one-third of all students were randomly selected to be tested.

All measures were the same as those used by Slavin et al. (in press). The California Achievement Tests were routinely administered by the school district; the individual measures were administered by education and psychology students from a local college. The specific measures used were as follows.

Language. Two tests of receptive and expressive language were individually administered to preschool and kindergarten students.

1. Test of Language Development (TOLD; Newcomer & Hammill, 1988). Individually administered Picture Vocabulary and Sentence Imitation Scales from the TOLD were used to assess receptive and expressive language concepts, respectively, of preschool and kindergarten students.

2. Merrill Language Screening Test (Mumm, Secord, & Dykstra, 1980). The individually administered comprehension scale from the Merrill was used to assess the ability to understand complex story structure of preschool and kindergarten students.

Reading. Four individually administered reading scales were selected from two widely used, nationally standardized reading batteries to assess a full range of reading skills: word attack (Woodcock Word Attack), recognition of letters and key sight words (Woodcock Letter-Word), oral reading fluency (Durrell Oral Reading), and comprehension (Durrell Oral and Silent Reading). These scales, plus the district-administered California Achievement Test, are described below.

1. Woodcock Language Proficiency Battery (Woodcock, 1984). Two Woodcock scales, Letter-Word Identification and Word Attack, were individually administered to students in grades K-3. The Letter-Word scale was used to assess recognition of letters and common sight words, while the Word Attack scale assessed phonetic synthesis skills.

2. Durrell Analysis of Reading Difficulty (Durrell and Catterson, 1980). Two Durrell scales, Oral and Silent Reading, were administered to students in grades 1-3. Oral Reading presents a series of graded reading passages followed by comprehension questions, which students read aloud. The Silent Reading scale also uses graded reading passages which students read silently. Students are then asked to recall the main elements of the story. Both Oral and Silent Reading contain assessments of reading comprehension, but the Oral Reading scale focuses more on a decoding focus while Silent Reading has more of a comprehension focus.

3. California Achievement Test (CTB/ McGraw-Hill, 1985). The group-administered reading comprehension and reading vocabulary scales from the school district's regular CAT test were analyzed for students in grades 1-3.

Analyses

Data were analyzed using analyses of covariance, with pretests as covariates. Outcomes were characterized in terms of effect sizes, which are the differences between experimental and control means divided by the control group's standard deviations. All analyses used raw or standard scores, grade equivalents are reported to facilitate understanding, but were not used in the analyses. For each of the analyses of reading achievement in grades 1-3, comparisons were made between all students at each grade level, and then separate analyses compared students who scored in the lowest 25% of their grades on the pretests.

Results

Prekindergarten

Table 1 presents the comparisons of prekindergarten Success for All students with their matched counterparts in the comparison schools. Significant positive effects were found only on the TOLD Picture Vocabulary Scale at Abbottston, but average effects sizes were positive at Abbottston (ES = +.16), City Springs (ES = +.28), and in the two Chapter 1-only schools that provided prekindergarten programs (ES = +.05). No consistent patterns appear in the results, except a tendency for more positive effects to be seen on the Merrill Comprehension scale than on the TOLD scales.

TABLES 1 AND 2 HERE

Kindergarten

Table 2 presents comparisons for the kindergarten students. Effect sizes averaged +.03 at Abbottston, +.44 at City Springs, +.50 at Dallas Nicholas, and +.14 in the four Chapter 1-only schools. However, the only significant differences were on Word Attack at City Springs, and Merrill and TOLD scales at Dallas Nicholas. It is not clear why the positive results obtained in Abbottston in the first year were not found in the kindergarten again. One explanation may be that the effects for the Story Telling and Retelling program occur primarily in the first year of exposure to the program (the prekindergarten year).

First Grade

Tables 3 and 4 and Figure 1 summarize the results in first grade.

TABLES 3 AND 4 AND FIGURE 1 HERE

The results on the individually administered tests in the fully funded schools -- Abbottston and City Springs -- strongly supported Success for All. Effect sizes (ES) averaged +.76 at Abbottston, with statistically significant positive effects on all four individually administered tests and the CAT. At City Springs, significant differences were found on Word Attack and marginal effects on both Durrell measures, and effect sizes averaged at + .41.

Effects in the Chapter 1-only schools were very small on all measures. Effects were positive for the curriculum-only schools on the individually administered measures (ES = +.23), primarily due to a substantial effect on Woodcock Word Attack and for the CAT (ES = +.29).

Effects were also very positive for Dallas Nicholas Elementary, which had significantly positive effects on the two Woodcock measures (average ES = +.36) and the CAT (ES = +.23). This is the Chapter 1-only school whose first graders had been in the reading program since the middle of kindergarten.

Effects for students who scored in the lowest quarter of their grades at pretest were consistently positive and strong on the individually administered tests (Table 4). Low-achieving first graders at Abbottston who had been in the program since kindergarten far outscored their matched counterparts, with a mean effect size of +2.37. Effects were statistically significant on all four measures. Lowest achieving students at Abbottston scored nearly at grade level (G.E.=1.8), while the lowest quarter in the comparison school were barely reading (G.E.=1.2).

Low achievers at City Springs also substantially outscored those at its comparison school (E.S.=+.55), although the differences were statistically significant only on the Durrell Oral and (marginally) Durrell Silent measures.

Smaller positive effects for low achievers were seen in the Chapter 1-only schools (ES=+.28), with significant differences on the two Woodcock scales.

Finally, substantial differences were found at the curriculum-only sites, where students had been in the program since mid-kindergarten (ES=+1.27). This difference was primarily due to

significant and extraordinary effects on the Woodcock Word Attack scale. Results on the CAT were highly variable and probably have little substantive meaning at these low levels.

The finding of larger effects for the curriculum-only schools compared to the better funded Chapter 1-only schools is probably due to the length of time the program had been implemented in each type of school. The curriculum-only schools began to use the Success for All beginning reading program in February, 1988, while Chapter 1-only schools began in November or December, 1988. Thus, students in the curriculum-only schools had been using the program for one and a half years by the time of posttesting, whereas most of the Chapter 1-only schools had been using the program for about three quarters of a year.

This difference is also reflected among the Chapter 1-only schools. First graders at Dallas Nicholas Elementary (which originally began as a curriculum-only school) had also been in the program for one and a half years at posttesting, and scores for these students were also very positive.

Second Grade

Tables 5 and 6 and Figure 2 summarize the results for second grade.

TABLES 5 AND 6 AND FIGURE 2 HERE

Effects on the individually administered measures were positive in the second grade at Abbottston (ES = +.28) although significant effects were found only on Word Attack.

The average effects were similarly positive at City Springs (ES = +.21) due to a large and significant effect on Durrell Oral. There were no differences on the CAT at either school, and no significant differences on any measure in the Chapter 1-only schools.

As in the first grades, effects for the lowest achieving second graders were particularly positive (Table 6). Low achievers at Abbottston scored substantially better than comparison students (ES=+.71) although, due to small n's, only marginally significant effects were found on Durrell Silent. Positive but non-significant effects were also found at City Springs (ES=+.38) and in the Chapter 1-only schools (ES=+.27). However, no differences were found on CAT's.

Third Grade

Tables 7 and 8 and Figure 3 summarize the results for the third grade.

TABLES 7 and 8 AND FIGURE 3 HERE

In the third grade (Table 7), effects strongly favored Success for All at Abbottston on the individually administered tests (ES = +.38) and on the CAT (ES = +.53). Differences were significant on the Woodcock Letter-Word scale and (marginally) on the Word Attack and CAT. However, there were no consistent differences at City Springs.

In the Chapter 1-only schools, Success for All students performed substantially better than comparison students on the individually administered scales (ES = +.52), but not on the CAT. Significant differences were found on both Durrell measures and on Woodcock Letter-Word.

Effects for the lowest achieving students on the individually administered measures (Table 8) were very positive at Abbottston (ES=+1.28), with statistically significant differences on the Durrell Oral and Letter-Word scales and marginally significant effects on Word Attack.

Substantial positive effects were also seen in the Chapter 1-only schools (ES=+.77), with significant differences on Durrell Oral and marginal differences on Durrell Silent, but no differences were found at City Springs. Substantial but non-significant differences favoring Success for All were also found on the CAT's (ES=+.74) for Abbottston.

Fourth Grade

Fourth grade results were assessed only at Abbottston, where effects strongly favored Success for All both on the individually administered tests (ES = +.38) and on the CAT (ES =

+.73). The differences were significant on the Woodcock Letter-Word and CAT scales. The results for fourth grade are summarized at the bottom of Table 7. Effects for the lowest 25% of students could not be computed due to inadequate sample size.

Discussion

Overall, the results of the 1989 tests strongly support the effectiveness of Success for All in increasing student reading performance. On individually administered tests, effects of Success for All were significantly positive in most comparisons. As in the first year at Abbottston Elementary (Slavin et al., in press), results were particularly positive for students whose pretests placed them in the lowest quarter of their grades.

The pattern of results indicated that students performed better the longer they were in the program. First, larger effects were obtained at Abbottston in its second year than in its first year in the first and second grades, and findings from the first year at City Springs resembled those for the first year at Abbottston. In addition, the higher performance of first graders in the curriculum-only schools than that of students in the Chapter 1-only schools (and the outstanding performance of first graders at Dallas Nicholas, who had been in the program for 1 1/2 years) indicate that a longer time in the program produces significantly better results.

The first grade findings also support a conclusion that should not be surprising: money matters. Most of the extra resources given to the fully funded schools provide tutoring for low-achieving first graders. As a result, the outcomes at the fully-funded schools, Abbottston and City Springs, are especially positive. The substantial positive effects for low achievers also show the impact of funding, as the lowest achievers received the lion's share of the most expensive resource, one-to-one tutoring.

However, the results from the curriculum-only schools and from Dallas Nicholas Elementary (all of whose first graders had been in the program for 1 1/2 years) additionally show that given a longer implementation period, schools without the extra resources also produce impressive results.

The dramatic effects on the reading achievement of Abbottston first graders who were in the lowest 25% on the pretests provides compelling evidence that the goal of success in reading for every child may be feasible. On average, these low achieving students scored at the 46th percentile on the individually administered reading tests. Matched low achievers in the comparison school averaged at the 8th percentile. Only 31% of the comparison school's low achieving first graders could decode even one of the nonsense words "tiff, hap, nan, mel, or jox" on the Woodcock Word Attack scale. One hundred percent of Abbottston students could decode at least two of these, and the lowest 25% of Abbottston first graders averaged 6.5 words. Only one of the low achieving students at the comparison school (8%) could comprehend the following passage:

> "I have a black dog. He has a little tail. He can jump and run."

In contrast, 69% of Abbottston low achievers showed comprehension of this passage on the Durrell Silent Reading scale, and 31% could remember at least ten things about a complex, 70-word passage at the second grade reading level.

What these results imply is that if we start with children in kindergarten and do whatever is necessary to see that they are successful the first time they are taught, almost every first grader may be well on the way to reading without recourse to special education or retentions. Four of the 48 Abbottston first graders who have been in the program since kindergarten are not making what we consider to be satisfactory progress toward the goal of grade level reading in the third grade, but with continued participation in good quality instruction, tutoring, and family support services, we are still confident that even these few remaining students will succeed.

The findings for the third and fourth grades at Abbottston primarily show the effectiveness of the Beyond the Basics reading program, as third and fourth graders receive little tutoring in the fully-funded schools and none in the Chapter 1-only schools. The substantial positive effects in third and fourth grades seen in most schools mirror findings at Abbottston in its first year.

The results indicate a few areas where additional efforts are needed. In particular, relatively weak results in second grade (also seen last year at Abbottston; see Slavin et al., in press) point to a difficulty many teachers have observed in the transition from beginning reading to Beyond the Basics. Many teachers in the Chapter 1-only schools also noted the difficulties involved in starting the beginning reading program after the beginning of the school year, and this was reflected in test performance in the first and second grades at these schools.

The ultimate goal of Success for All, particularly in its fully funded form, is to bring virtually all children to grade level performance in basic skills (especially reading) by the end of the third grade, and to maintain them there through the end of elementary school. This commitment is made for students who began the program in preschool and who continue through third grade, so it is too soon to assess it. However, there are several indications that the program is headed in the right direction.

First, there is clear evidence that the longer students are in the program the better they do. Comparing results from Abbottston over two years, it is clear that the effects are cumulative. Second, the extraordinary performance of low achieving first graders at Abbottston suggests the possibility that we may reach our goal of reading success for every child sooner than we had expected. Third, the very positive effects seen in the third and fourth grades in most schools indicate student success can be accelerated even beyond the years when tutoring is provided.

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Table 1: Prekindergarten Assessment Results

School		Merrill Comprehension	TOLD Picture	TOLD Sentence Imitation
Abbottston	Score (SD)	3.57 (1.30)	9.27 (4.61)	6.17 (4.28)
n=30	Percentile	68th %ile	50th %ile	37th %ile
Control	Score (SD)	3.10 (1.75)	7.13 (4.22)	8.06 (6.86)
n=30	Percentile	40th %ile	25th %ile	50th %ile
	Effect Size	0.26	0.50	-0.29
	F (p)	3.53 (<.07)	9.7 (<.03)	<1 (ns)
City Springs	Score (SD)	3.00 (1.65)	8.00 (5.42)	6.43 (5.26)
n=18	Percentile	30th %ile	25th %ile	37th %ile
Control	Score (SD)	2.06 (1.66)	7.56 (4.42)	6.00 (3.72)
n=18	Percentile	7th %ile	25th %ile	37th %ile
	Effect Size	0.63	0.11	0.11
	F (p)	1.52 (ns)	<1 (ns)	<1 (ns)
Chapter 1	Score (SD)	2.88 (1.81)	8.37 (4.45)	6.50 (4.85)
n=77	Percentile	25th %ile	25th %ile	37th %ile
Control	Score (SD)	2.52 (1.65)	8.23 (4.96)	6.99 (4.81)
n=77	Percentile	25th %ile	25th %ile	37th %ile
	Effect Size	0.22	0.03	-0.10
	F (p)	<1 (ns)	<1 (ns)	<1 (ns)

Table 2: Kindergarten Assessment Results

School		Merrill Comprehension	TOLD Picture	TOLD Sentence	Letter Word	Word Attack
Abbottston	Score (SD)	4.38 (.98)	13.24 (4.81)	6.91 (5.72)	7.28 (6.76)	
n=30	GE / Percentile	68%	63%	25%	GE <1.0	
						test
Control	Score (SD)	3.95 (2.44)	11.76 (4.25)	10.05 (5.61)	6.95 (2.57)	not
n=30	GE / Percentile	40%	50%	37%	GE <1.0	given
	Effect Size	0.18	0.35	-0.56	0.13	
	F (p)	< 1 (ns)	1.11 (ns)	3.2 (< .08)	< 1 (ns)	
City Springs	Score (SD)	4.00 (1.38)	9.64 (4.24)	10.42 (6.43)	7.50 (3.66)	1.00 (2.4)
n=18	GE / Percentile	40%	37%	37%	GE <1.0	GE 1.2
Control	Score (SD)	3.56 (1.59)	9.76 (4.49)	9.53 (5.42)	7.07 (2.49)	.24 (.57)
n=18	GE / Percentile	22%	37%	37%	GE <1.0	GE <1.0
	Effect Size	0.28	0.04	0.17	0.18	1.51
	F (p)	< 1 (ns)	< 1 (ns)	< 1 (ns)	< 1 (ns)	20.52 (< .01)
Dallas F. Nicholas	Score (SD)	4.15 (.98)	13.38 (2.69)	13.62 (7.28)	4.92 (3.77)	.69 (1.7)
n=30	GE / Percentile	53%	63%	63%	GE <1.0	GE <1.0
Control	Score (SD)	3.08 (1.8)	8.08 (5.19)	7.15 (4.74)	7.54 (5.65)	.62 (1.3)
n=30	GE / Percentile	22%	25%	25%	GE <1.0	GE <1.0
	Effect Size	0.59	1.02	1.36	-0.46	0.00
	F (p)	5.22 (< .01)	15.61 (< .01)	27.75 (< .01)	3.17 (ns)	< 1 (ns)
Chapter 1	Score (SD)	3.87 (1.42)	10.15 (6.46)	10.15 (6.48)	6.37 (3.84)	.62 (1.24)
n=47	GE / Percentile	40%	37%	37%	GE <1.0	GE <1.0
Control	Score (SD)	3.61 (1.39)	8.30 (5.36)	8.31 (5.37)	8.10 (4.24)	.39 (1.14)
n=47	GE / Percentile	22%	25%	25%	GE <1.0	GE <1.0
	Effect Size	0.19	0.35	0.34	-0.40	0.21
	F (p)	< 1 (ns)	2.87 (ns)	2.72 (ns)	3.76 (< .07)	1.04 (ns)

School		DO	DS	LW	WA	CAT	PRE	Av GE	Av ES
Abbottston	Score (SD)	6.53 (4.37)	4.13 (4.88)	20.98 (6.12)	7.37 (4.66)	497.27 (94.27)	350.87 (91.30)	1.93 *	
n=52	GE	2.00	1 60	1.80	2.30	1.60	<1	1.86 * *	
									0.70 *
Control	Score (SD)	4.44 (3.50)	2.48 (3.75)	16.62 (5.36)	2.52 (4.07)	471.08 (88.60)	351.87 (67.99)	1.40 *	0.66 * *
n=52	GE	1.60	1 30	1.40	1.50	1.50	<1	1.46 * *	
	Effect Size	0.60	0.44	0.81	1.19	0.30	-0.01		
	F (p)	14.85 (< .00)	6 63 (< .01)	26 25 (< .00)	38 01 (< .00)	7.95 (< .01)			
City Springs	Score (SD)	4.25 (3.59)	3.09 (3.80)	16.14 (5.64)	4.11 (3.66)	423.70 (114.10)	326.52 (76.82)	1.60 *	
n=56	GE	1.60	1 40	1.40	2.00	1.30	<1	1 54 * *	
									0.41 *
Control	Score (SD)	3 05 (2.99)	1 71 (3.65)	14.90 (4 88)	2 02 (3 04)	457 11 (85 40)	328 52 (74.26)	1 35 *	0.25 * *
n=56	GE	1 40	1 20	1.30	1 50	1.40	<1	1 36 * *	
	Effect Size	0 40	0.38	0.23	0.61	-0.37	-0.03		
	F (p)	3 13 (< 08)	3 45 (< .07)	2 22 (ns)	12 73 (< 00)	2 79 (< 10)			
Dallas F. Nicholas	Score (SD)	5.44 (3.64)	3.17 (3 10)	18 93 (5 90)	4 25 (3.48)	494 58 (103 54)	378.26 (63.78)	1.70 *	
n=31	GE	1 80	1.40	1 60	2.00	1.60	<1	1 68 * *	
									0 36 *
Control	Score (SD)	4 35 (3.19)	2.87 (4 28)	16.26 (5 16)	2.68 (3 26)	471 16 (89.47)	382.13 (64.62)	1 48 *	0.33 * *
n=31	GE	1 60	1 40	1.40	1.50	1.50	<1	1 48 * *	
	Effect Size	0 33	0.09	0 52	0.48	0.23	-0.06		
	F (p)	2 26 (ns)	<1 (ns)	5 98 (< 02)	4 02 (< 05)	1 48 (ns)			
Chapter 1	Score (SD)	4.69 (3 94)	3 77 (3 95)	18.75 (5 86)	5 05 (4.54)	470.24 (105.92)	356.90 (72.22)	1.73 *	
n=128	GE	1 70	1 60	1 60	2 00	1.50	<1	1 68 * *	
									0 12 *
Control	Score (SD)	4 89 (4 03)	3 50 (4 64)	17 46 (6 58)	3.77 (4.94)	485.13 (107.52)	358 29 (75 07)	1 65 *	0.06 * *
n=128	GE	1 70	1 50	1 50	1.90	1.60	<1	1 64 * *	
	Effect Size	-0 05	0 06	0 20	0.26	-0.14	-0.02		
	F (p)	<1 (ns)	<1 (ns)	5 97 (< 02)	5 81 (< 02)	1 93 (ns)			
Curriculum Only	Score (SD)	6 73 (3 97)	5 37 (4.15)	22.02 (6.17)	8 37 (5.39)	539.95 (81.37)	383.64 (72.29)	2.08 *	
n=56	GE	2 10	1 80	2 01	2 40	1.90	<1	2.04 * *	
									0 23 *
Control	Score (50)	6 57 (4 08)	5 07 (4 92)	20.64 (6.44)	5 20 (5.10)	508.62 (107 02)	377.68 (64.92)	1.89 *	0.24 * *
n=56	GE	2 01	1 75	1 80	2.01	1.70	<1	1 85 * *	
	Effect Size	0 04	0 06	0 21	0.62	0.29	0.09		
	F (p)	<1 (ns)	<1 (ns)	<1 (ns)	9 17 (< .00)	2 02 (ns)			

DO = Durrell Oral Reading Scale
DS = Durrell Silent Reading Scale
LW = Letter/Word Reading Scale of the Woodcock Language Proficiency Battery
WA = Word Attack Scale of the Woodcock Language Proficiency Battery
CAT = CAT Total Reading

Av GE = Average Grade Equivalent across all tests
Av ES = Average Effect Size
* = Average of individual administered tests only
* * = Average of individual administered tests and CAT

Table 4: Grade 1 Assessment Results - Lowest 25%

School		DO	DS	LW	WA	CAT	PRE	Av GE	Av ES
Abbottston	Score (SD)	5.46 (2.96)	4.46 (4.31)	18.38 (4.25)	6.50 (3.58)	459.00 (67.56)	258.46 (24.07)	1.83 *	
n=13	GE	1.80	1.70	1.60	2.20	1.40	<1	1.74 * *	
									2.37 *
Control	Score (SD)	2.31 (1.6)	.61 (2.22)	12.31 (3.86)	.85 (1.34)	411.15 (85.18)	255.38 (26.26)	1.20 *	2.01 * *
n=13	GE	1.30	1.00	1.20	1.30	1.20	<1	1.20 * *	
	Effect Size	1.97	1.73	1.57	4.22	0.56	0.12		
	F (p)	11.86 (< .00)	7.80 (< .01)	15.20 (< .00)	26.79 (< 00)	2.49 (ns)			
City Springs	Score (SD)	2.86 (1.88)	.57 (1.22)	11.36 (4.96)	2.07 (2.13)	324.15 (88.46)	259.71 (24.89)	1.25 *	
n=14	GE	1.40	1.00	1.10	1 [illegible]	0.80	<1	1.16 * *	
									0.55 *
Control	Score (SD)	1 08(1.55)	00 (.00)	11.00 (4.57)	1 00 (2.08)	402.85 (87.07)	260.64 (42.68)	1.10 *	0.26 * *
n=14	GE	1.00	1.00	1.10	1.30	1.20	<1	1.12 * *	
	Effect Size	1.14	0.47	0.08	0.51	-0.90	0.02		
	F (p)	7 18 (<.01)	3.12 (<.09)	<1 (ns)	1 74 (ns)	5.74 (<.02)			
Chapter 1	Score (SD)	2.10 (3.08)	.83 (1.79)	13.97 (5.77)	2.83 (2.94)	372.84 (99.37)	261.12 (54.52)	1.30 *	
n=32	GE	1.30	1.00	1.30	1.60	1.00	<1	1.24 * *	
									0.28 *
Control	Score (SD)	2.09 (2.97)	.77 (2.04)	11.91 (5.72)	1.00 (2.40)	405.91 (100.00)	263.94 (65.72)	1.18 *	0.16 * *
n=32	GE	1.30	1.00	1.10	1.30	1.20	<1	1.18 * *	
	Effect Size	0.00	0.00	0.36	0.76	-0.33	0.04		
	F (p)	<1 (ns)	<1 (ns)	4.93 (< 03)	8 82 (<.00)	2.46 (ns)			
Curriculum Only	Score (SD)	4.29 (3.22)	4.21 (3.64)	18.57 (5.00)	6.57 (4.60)	490.93 (83.70)	306.93 (40.14)	1 75 *	
n=14	GE	1 60	1.60	1.60	2.20	1.60	<1	1 72 * *	
									1 27 *
Control	Score (SD)	3.71 (3.41)	2.00 (3,30)	15.71 (3.89)	1.35 (1.50)	401.29 (86.61)	283.22 (46.60)	1.40 *	1.22 * *
n=14	GE	1.60	1.30	1.40	1.30	1.20	<1	1.36 * *	
	Effect Size	0.17	0.67	0.74	3.48	1.03	0.57		
	F (p)	<1 (ns)	2.60 (ns)	1.26 (ns)	12 39 (< 00)	5.01 (<.03)			

DO = Durrell Oral Reading Scale
DS = Durrell Silent Reading Scale
LW = Letter/Word Reading Scale of the Woodcock Language Proficiency Battery
WA = Word Attack Scale of the Woodcock Language Proficiency Battery
CAT = CAT Total Reading

Av GE = Average Grade Equivalent across all tests
Av ES = Average Effect Size
* = Average of individual administered tests only
* * = Average of individual administered tests and CAT

Table 5: Grade 2 Assessment Results

School		DO	DS	LW	WA	CAT	PRE	Av GE	Av ES
Abbottston	Score (SD)	11.18 (4.97)	10.73 (5.42)	26.91 (6.08)	8.75 (4.81)	366.33 (45.63)	355.12 (64.36) ¥	2.70 *	
n=48	GE	2.8	2.7	2.5	2.8	2.8	<1.0	2.72 * *	
									0.28 *
Control	Score (SD)	10.6 (4.34)	8.87 (4.95)	26.27 (4.37)	6.77 (4.20)	367.52 (36.27)	360.43 (62.87) ¥	2.45 *	0.22 * *
n=48	GE	2.7	2.4	2.5	2.2	2.8	<1.0	2.52 * *	
	Effect Size	0.13	0.38	0.15	0.47	-0.03	-0.08		
	F (p)	<1 (ns)	2.08 (ns)	<1 (ns)	3.92 (<.05)	<1 (ns)			
City Springs	Score (SD)	11.23 (5.89)	9.25 (6.43)	23.94 (5.75)	7.17 (4.95)	348.33 (47.35)	514.19 (85.24)	2.43 *	
n=48	GE	2.8	2.5	2.1	2.3	2.4	1.7	2.42 * *	
									0.21 *
Control	Score (SD)	8 62 (3.93)	7.93 (4.96)	24.12 (6.36)	7.69 (6.27)	346.29 (45.63)	509.56 (82.89)	2.25 *	0.17 * *
n=48	GE	2.4	2.2	2.1	2.3	2.4	1.7	2.28 * *	
	Effect Size	0.66	0.27	-0.02	-0.08	0.04	0.05		
	F (p)	6.38 (<.01)	1.27 (.26)	<1 (ns)	<1 (ns)	<1 (ns)			
Chapter 1	Score (SD)	10.09 (5.74)	8.42 (6.14)	24.95 (6.25)	7.77 (5.7)	348.67 (47.31)	511.59 (92.83)	2.35 *	
n=108	GE	2.6	2.3	2.2	2.3	2.4	1.7	2.36 * *	
									0.03 *
Control	Score (SD)	9.34 (4.33)	7.75 (5.2)	25.41 (6.41)	8.41 (6.14)	360.07 (49.39)	510.50 (84.92)	2.34 *	-0.02 * *
n=108	GE	2.5	2.2	2.25	2.4	2.7	1.7	2.41 * *	
	Effect Size	0.17	0.13	-0.07	-0.1	-0.22	0.01		
	F (p)	3.62 (<.06)	1.50 (ns)	<1 (ns)	1.06 (ns)	3.36 (<.07)			

DO = Durrell Oral Reading Scale
DS = Durrell Silent Reading Scale
LW = Letter/Word Reading Scale of the Woodcock Language Proficiency Battery
WA = Word Attack Scale of the Woodcock Language Proficiency Battery
CAT = CAT Total Reading
¥ = These students were matched on Spring 87 Metropolitan test scores (at the end of kindergarten) as the program began at Abbottston in the fall of 1987.

Av GE = Average Grade Equivalent across all tests
Av ES = Average Effect Size
* = Average of individual administered tests only
* * = Average of individual administered tests and CAT

Table 6: Grade 2 Assessment - Lowest 25%

School		DO	DS	LW	WA	CAT	PRE	Av GE	Av ES
Abbottston	Score (SD)	10.00 (6.82)	10.00 (8.04)	24.55 (7.41)	7.27 (4.76)	347.30 (53.46)	298.78 (67.78) ¥	2.43 •	
n=11	GE	2.60	2.60	2.20	2.30	2.40	<1.0	2.42 • •	
									0.71 •
Control	Score (SD)	8.36 (3.17)	4.64 (4.25)	23.27 (3.32)	4.45 (4.27)	344.27 (27.01)	296.73 (51.24) ¥	2.05 •	0.59 • •
n=11	GE	2.40	1.70	2.10	2.00	2.40	<1.0	2.12 • •	
	Effect Size	0.52	1.26	0.39	0.66	0.11	0.04		
	F (p)	<1 (ns)	3.96 (<.07)	<1 (ns)	<1 (ns)	<1 (ns)			
City Springs	Score (SD)	7.86 (7.29)	6.86 (7.55)	20.57 (5.76)	5.57 (5.54)	318.14 (46.90)	415.21 (34.75)	2.03 •	
n=14	GE	2.20	2.00	1.80	2.10	1.80	1.20	1.98 • •	
									0.38 •
Control	Score (SD)	5.5 (3.74)	4.64 (4.18)	19.21 (6.41)	4.50 (6.66)	309.21 (45.57)	408.14 (44.80)	1.78 •	0.35 • •
n=14	GE	1.80	1.70	1.60	2.00	1.70	1.20	1.76 • •	
	Effect Size	0.63	0.53	0.21	0.16	0.20			
	F(p)	<1 (ns)	<1 (ns)	<1 (ns)	<1 (ns)	<1 (ns)			
Chapter 1	Score (SD)	5.64 (3.36)	4.93 (4.11)	19.68 (4.56)	3.71 (2.24)	310.57 (39.09)	404.23 (72.42)	1.75 •	
n=31	GE	1 80	1.70	1.60	1.90	1.80	1.20	1.76 • •	
									0.27 •
Control	Score (SD)	5.28 (3.15)	2.75 (3.43)	19.10 (4.87)	3.07 (2.99)	309.03 (42.58)	414.90 (61.47)	1.63 •	0.22 • •
n=31	GE	1.80	1.30	1.60	1.80	1.70	1.20	1.64 • •	
	Effect Size	0.11	0.64	0.12	0.21	0.04			
	F(p)	<1 (ns)	6.81 (<.01)	i.09 (ns)	1.64 (ns)	<1 (ns)			

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• • = Average of individual administered tests and CAT

¥ = These students were matched on Spring 87 Metropolitan test scores (at the end of kindergarten) as the program began at Abbottston in the fall of 1987.

School		DO	DS	LW	WA	CAT	PRE	Av GE	Av ES
Abbottston	Score (SD)	16.7 (5.53)	15.4 (5.52)	31.47 (5.24)	13.32 (7.34)	412.24 (51.99)	326.47 (30.58) ¥	3.75 •	
n=43	GE	3.70	3.60	3.50	4.20	3.90	2.00	3.78 • •	
									0.38 •
Control	Score (SD)	14.5 (7.24)	14.00 (7.13)	27.47 (8.87)	9.84 (6.77)	388.05 (45.51)	323.83 (26.84) ¥	2.98 •	0.41 • •
n=43	GE	3.35	3.27	2.70	2.60	3.40	1.90	3.06 • •	
	Effect Size	0.30	0.24	0.45	0.51	0.53	0.10		
	F (p)	<1 (ns)	<1 (ns)	4.61 (<.03)	3.88 (<.07)	3.85 (<.05)			
City Springs	Score (SD)	13.51 (4.29)	12.84 (4.89)	27.64 (5.43)	8.82 (5.04)	372.58 (29.98)	343.36 (45.04)	2.80 •	
n=39	GE	3.18	3.02	2.70	2.30	3.00	2.30	2.84 • •	
									0.06 •
Control	Score (SD)	11.69 (5.15)	11.41 (5.8)	28.64 (5.420	10.38 (6 39)	378.59 (33.69)	342.49 (43.78)	2.84 •	0.01 • •
n=39	GE	2.90	2.85	2.80	2.80	3.20	2.30	2.91 • •	
	Effect Size	0.35	0.25	-0.18	-0.17	-0.18	0.02		
	F (p)	3.83 (<.05)	2.39 (ns)	<1 (ns)	<1 (ns)	<1 (ns)			
Chapter 1	Score SD	16.02 (6.52)	15.07 (5.25)	3.42 (4.82)	11.52 (7.32)	387.44 (36.27)	361.66 (39.95)	3.38 •	
n=53	GE	3.60	3.40	3.50	3.00	3.40	2.70	3.38 • •	
									0.52 •
Control	Score (SD)	12.13 (4.22)	11.84 (5.49)	28.49 (5.80)	10.11 (6.07)	388.15 (33.75)	359.66 (39.45)	2.86 •	0.41 • •
n=53	GE	2.95	2.90	2.80	2.80	3.40	2.70	2.97 • •	
	Effect Size	0.92	0.59	0.33	0.23	-0.02	0.05		
	F (p)	20.87 (<.00)	9.92 (<.00)	4.33 (<.04)	1.34 (ns)	1.85 (ns)			

Grade 4 Assessment Results

School		DO	DS	LW	WA	CAT	PRE	Av GE	Av ES
Abbottston	Score (SD)	18.42 (5.98)	19.33 (5.56)	33.88 (4.72)	13.76 (6.94)	542.94 (62.12)	345.93 (34.48) ¥	4.33 •	
n=17	GE	4.02	4.20	4.50	4.60	8.20	2.40	5.10 • •	
									0.38 •
Control	Score (SD)	17.28 (6.12)	17.46 (6.78)	32.01 (3.69)	10.53 (5.86)	506.01 (50.52)	352.53 (29.33) ¥	3.65 •	0.45 • •
n=17	GE	3.80	3.80	4.10	2.90	6.90	2.5	4.30 • •	
	Effect Size	0.19	0.28	0.51	0.55	0.73			
	F (p)	<1 (ns)	<1 (ns)	4.08 (<.05)	2.72 (ns)	4.32 (<.05)			

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Table 8: Grade 3 Assessment - Lowest 25%

School		DO	DS	LW	WA	CAT	PRE	Av GE	Av ES
Abbottston	Score (SD)	12.30 (3.89)	11.50 (3.87)	25.82 (3.16)	7.18(5.22)	361.18 (43.39	297.11 (15.92) ¥	2.60 *	
n=11	GE	3.00	2.80	2.30	2.30	2.70	1.60	2.62 * *	
									1.29 *
Control	Score (SD)	6.64 (3.04)	8.0 (4.58)	16.55 (8.45	3.45 (2.62)	343.50 (23.75)	295 90 (20.02) ¥	1.90 *	1.18 * *
n=11	GE	2.00	2.30	1.40	1.90	2.30	1.60	1.98 * *	
	Effect Size	1.86	0.76	1.10	1.42	0.74	0.06		
	F (p)	10 54 (<.00)	1.33 (ns)	7.07 (<.02)	2.12 (ns)	<1(ns)			
City Springs	Score (SD)	10.18 (3.16)	9.18 (4.17)	24.27 (5.62)	5.09 (4.70)	346.18 (26.21)	294.91 (25.01)	2.30 *	
n=11	GE	2.60	2.40	2.10	2.10	2.40	1.60	2.32 * *	
									-0.13 *
Control	Score (SD)	10.00 (3.85)	9.18 (4.38)	24.91 (5.09)	7.09 (4.46)	374.91 (25.52)	295.36 (19.24)	2.38 *	-0.33 * *
n=11	GE	2.60	2.40	2.20	2.30	3.10	1.60	2.52 * *	
	Effect Size	0.05	0.00	-0.13	-0.43	-1.13	-0.02		
	F (p)	<1 (ns)	<1 (ns)	<1 (ns)	1.31 (ns)	5.72 (.03)			
Chapter 1	Score SD	12.00 (3.86)	13.06 (4.19)	28.00 (3.38)	7.53 (5.20)	379.75 (37.41)	330.84 (16.73)	2.78 *	
n=19	GE	2.90	3.10	2.80	2.30	3.20	2.10	2.86 * *	
									0.62 *
Control	Score (SD)	9.83 (307)	8.83 (3.47)	26.11 (5.38)	8.53 (5.27)	379.17 (18.10)	328.37 (26.40)	2.43 *	0.50 * *
n=19	GE	2.50	2.30	2.50	2.40	3.20	2.00	2.58 * *	
	Effect Size	0.71	1.22	0.35	0.18	0.03	0.09		
	F (p)	3 27 (< 08)	10 16 (<00)	1 53 (ns)	<1 (ns)	<1 (ns)			

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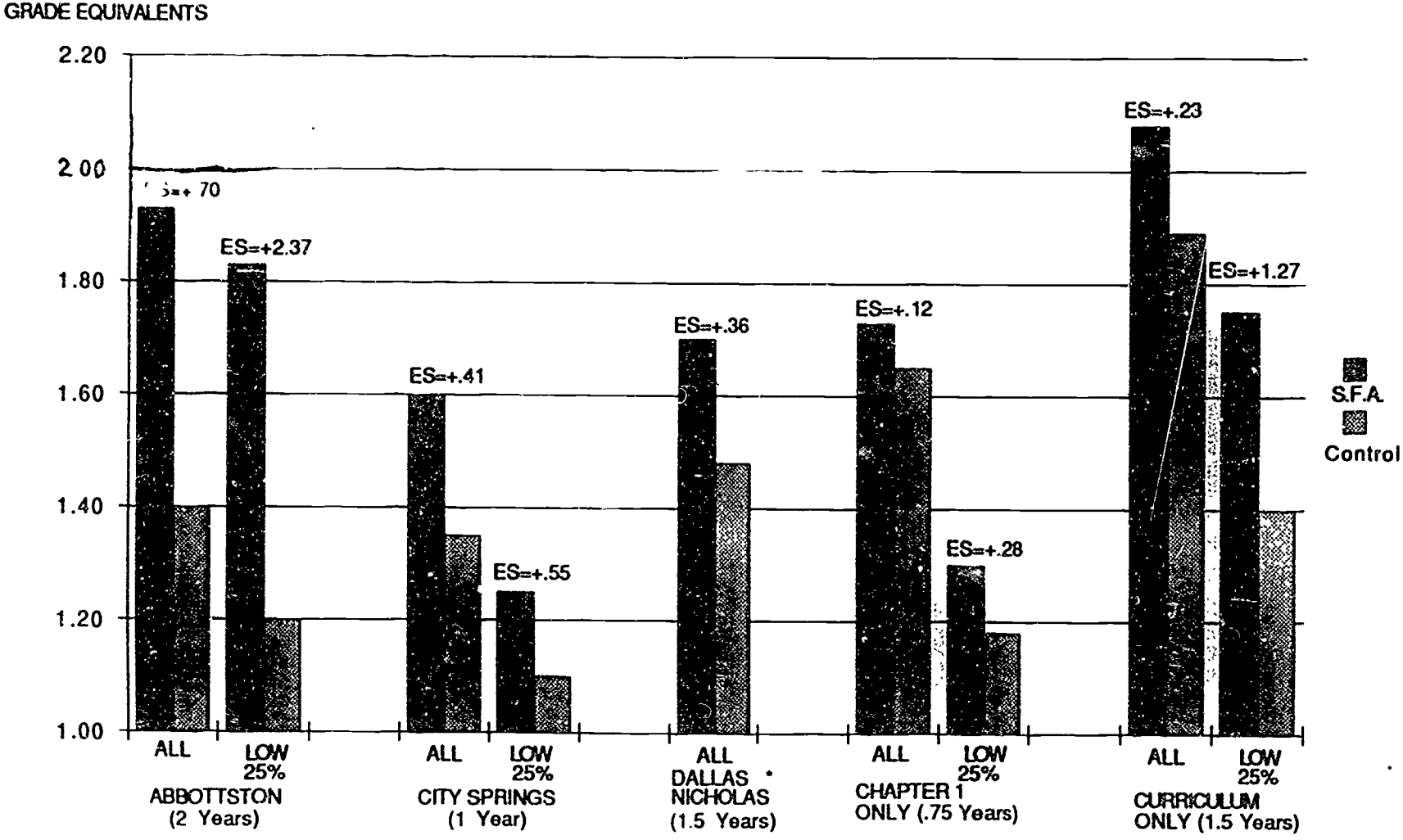
* * = Average of individual administered tests and CAT

¥ = These students were matched on Spring 87 CAT tests given at the end of the first grade, and the study began in the fall of 1987 at Abbottston

Figure 1

COMPARISON OF SUCCESS FOR ALL AND COMPARISON SCHOOLS ON INDIVIDUAL READING ASSESSMENTS, FIRST GRADE



* SAMPLE SIZE INADEQUATE TO COMPUTE LOW 25%

Figure 2

COMPARISON OF SUCCESS FOR ALL AND COMPARISON SCHOOLS ON INDIVIDUAL READING ASSESSMENTS, SECOND GRADE

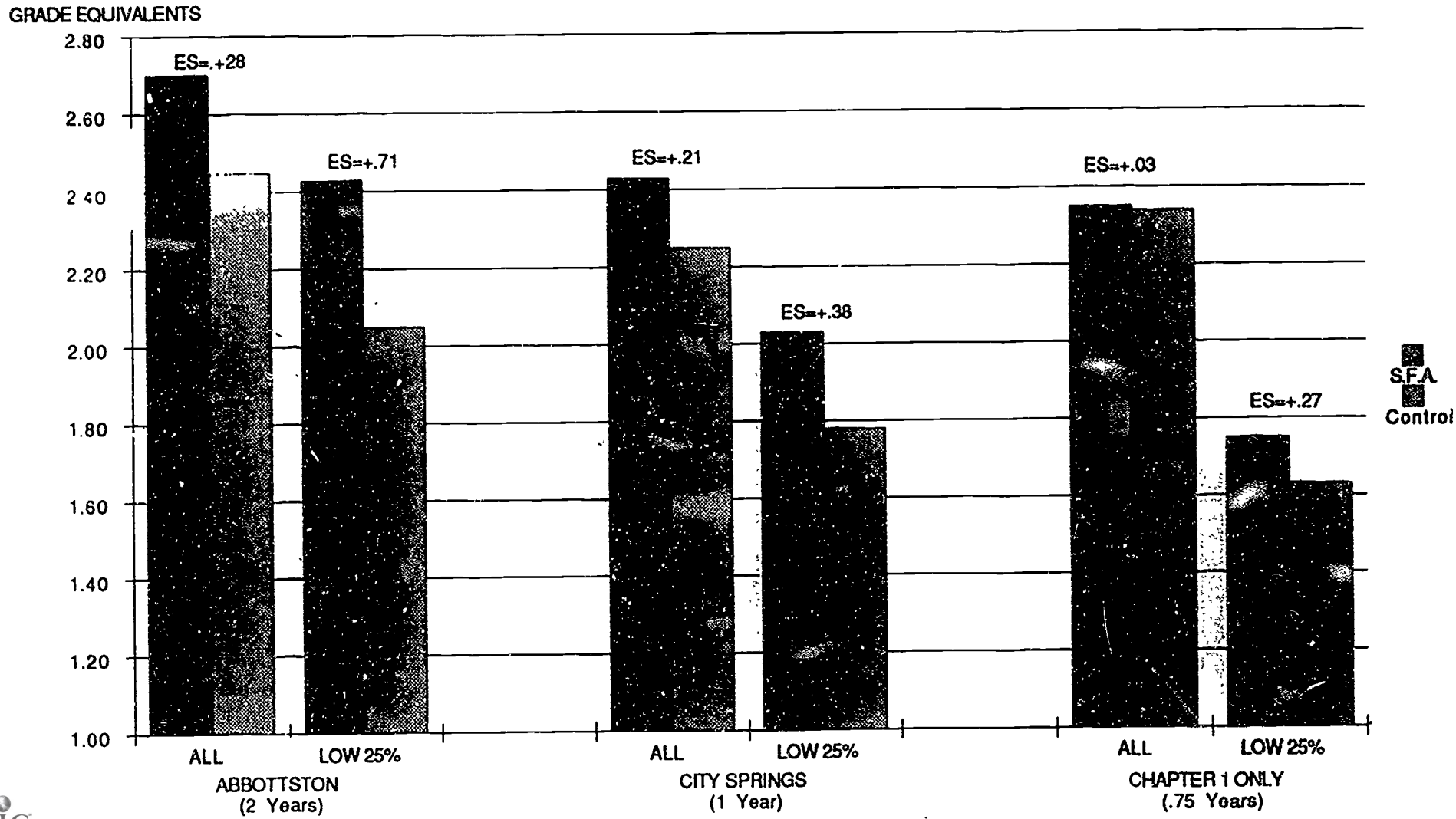


Figure 3

COMPARISON OF SUCCESS FOR ALL AND COMPARISON SCHOOLS ON INDIVIDUAL READING ASSESSMENTS, THIRD GRADE