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ABSTRACT

This paper presents findings of the longitudinal School Success Study (SSS), which is being conducted to determine the academic and social effects of nongraded (multiage, continuous progress) programs on Tennessee elementary school students. Covering the years 1993-99, the research seeks to identify successful school practices in both nongraded and graded programs. The study includes elementary-age students (K-4) from seven Tennessee schools that are implementing nongraded programs (n=1,500), three of which also have students in traditional classes (n=750), and five comparison schools in which all students are enrolled in single-grade classes. Academic achievement is measured by the Tennessee Comprehensive Assessment Program (TCAP) and the Tennessee Holistic Writing Assessment. Social development (academic self-concept) is measured using the Self-Concept and Motivation Inventory (SCAMIN). A one-way analysis of variance (ANOVA) indicates that students from nongraded classes during the first year of the study significantly outscored those from traditional classes on: (1) the grade 2 and 3 TCAP in vocabulary, total reading, total language, and total math; and (2) the third- and fourth-grade Holistic Writing Assessment. The SCAMIN analysis showed significant differences among students between various schools; however, the SCAMIN at this point is being used only to provide a baseline for the first student cohort. Four tables are included. Contains 33 references. (LMI)

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# Center of Excellence for Research in Basic Skills

## Tennessee State University

### Are Multiage/Nongraded Programs Providing Student's With A Quality Education? Some Answers From The School Success Study

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**ARE MULTIAGE/NONGRADED PROGRAMS  
PROVIDING STUDENTS WITH A QUALITY EDUCATION?  
SOME ANSWERS FROM THE SCHOOL SUCCESS STUDY (SSS)**

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**ABSTRACT**

The longitudinal School Success Study (SSS) (1993-1999) is being conducted to determine the academic and social effects of nongraded (multiage, continuous progress) programs on students in elementary schools. This research seeks to identify successful school practices that may exist in both nongraded and graded programs.

The study includes elementary-age students (K-4) from seven Tennessee schools that are implementing "nongraded" programs (n=1,500); three of which also have students in traditional classes (n=750); and five comparison schools where all students are in single-grade classes (n=2,250). Outcome measures of academic achievement include the Tennessee Comprehensive Assessment Program or TCAP (a standardized achievement test administered grades K-4 ) and the Tennessee Holistic Writing Assessment (administered in grades 3 and 4). Social development (academic self-concept) is measured for all students in the study using the Self-Concept and Motivation Inventory (SCAMIN).

A one way analysis of variance (ANOVA) showed that students from nongraded classes (during year one of the study) significantly outscored those from traditional classes ( $p \leq .05$ ) on the grade 2 and 3 TCAP in vocabulary, total reading, total language and total math, and significantly outscored students from traditional classes ( $p \leq .05$ ) on both the third and fourth grade Holistic Writing Assessment. The SCAMIN analysis showed significant differences among students between various schools, but at this point the SCAMIN is used only to provide a baseline for the first cohort of students. Analysis of SCAMIN during the second year, grade 1, will be reported after year two of the study. At this point in time, all findings should be regarded as preliminary.

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J.B. Zaharias, V.A. Cain, D.A. Tollett, and B.D. Fulton are research staff within the Center. The School Success Study is being conducted at the Center in partnership with several Tennessee school systems. This research is being facilitated by a collaborative-action research network (the Tennessee Multiage/Nongraded Research Network) involving Center research faculty, five school systems, the State Board of Education, and State Department of Education. The authors appreciate L.M. Prichard, the Center's Teacher of Excellence Award Recipient, and Curriculum Coordinator at LaVergne Primary in Rutherford County Schools, who assists on the study as a teacher network member

**ARE NONGRADED PROGRAMS PROVIDING STUDENTS  
WITH A QUALITY EDUCATION?  
SOME ANSWERS FROM THE SCHOOL SUCCESS STUDY (SSS)**

**Introduction**

Applied research using collaborative strategies between universities and K-12 schools is an important approach for generating a knowledge base useful to educational practitioners, post-secondary faculty, and policymakers (Patterson, Stansell, & Lee, 1990). The Center for Research on Basic Skills at Tennessee State University has employed various strategies to strengthen applied research design, dissemination of results, and implementation of research findings.

The School Success Study (SSS) involves the collaborative efforts of Center research faculty; K-4 teachers, principals, and supervisors of instruction in six school systems; and state education personnel serving on the Tennessee Multiage/Nongraded Research Network. The research partners are collaborating on the design and implementation of the study. The network members also participate in sponsored observation teams to "quality schools" implementing various programs and practices (e.g., continuous progress, heterogeneous grouping by age and ability, cooperative learning, hands-on learning, etc.) associated in the literature with multiage/nongraded programs (Anderson, 1987; Buffie, 1971; DeLorenze & Salter, 1965; Lewis, 1969; and Miller, 1967).

This collaborative-action research study is being conducted to determine if nongraded programs have cognitive and social benefits for elementary-school students (K-4) and professional-practice benefits for teachers and school administrators. In order to identify teachers/schools as collaborators for the study, university researchers made site-visits to observe schools within the state that were operating nongraded pilot programs in 1990. They initially invited three school systems with well-developed programs, based on critical elements identified in the literature using a typology instrument (Nye, 1993), to join the Center's network. Four schools with nongraded programs from these three systems volunteered to participate in the four-year study. Since the onset of the study, three additional systems and one additional school (within an already participating system) have been included, bringing the total number of SSS schools with a nongraded program to seven.

Working cooperatively through network meetings, school practitioners and research faculty identified and included another school within each system that utilized a single-grade program, and that had similar demographic characteristics to their own school. These schools serve as partner schools in the SSS. This resulted in a sample of approximately 1,500 nongraded students and 2,250 single-grade students. The study is also assessing 750 students attending single-grade classes within those participating schools that have nongraded programs.

All network members were involved in selecting the outcome measures and assessment instruments/strategies for the study. Cognitive outcomes are being measured by the Tennessee Comprehensive Assessment Program (TCAP) which contains both a norm-referenced and criterion-referenced test component. As another means of cognitive assessment, third- and fourth-grade level students complete the Tennessee Holistic Writing Assessment. Social outcomes are being measured by the Self-Concept and Motivation Inventory (SCAMIN).

The SSS is designed to collect data on nongraded and single-grade program models and document potentially successful teaching practices from both types of programs. The study does not hypothesize that nongraded programs are preferable to single-grade approaches that may incorporate similar effective teaching strategies, but that nongraded programs may provide an organizational framework that facilitates effective teaching strategies.

### Literature Review<sup>1</sup>

#### Nongraded vs. Single-graded Organizational Structures

The nongraded primary is an organizational framework that has been discussed continuously during the 100-year history of public education. It has been interpreted and implemented in a variety of models as early as the seventeenth century (Buffie, 1971), and nongraded schools characterized our frontier past in American public education (Barker, 1986). However, one-room schools and other models of nongrading in the past are rarely reflective of the rationale or components of today's nongraded programs or schools.

The efficacy of nongraded schools has recently been questioned. However, the single-grade pattern as beneficial for school organizations has been examined for many years. The foundation for the debate began to take shape as early as 1868 with the advancement of the single-grade in St. Louis, Missouri (Goodlad & Anderson, 1963). The onset of nongraded/single-grade comparisons began at least as early as 1872 when Francis Parker attacked the age-specific grade organization (Goodlad & Anderson, 1963).

The debate has been ongoing in the literature for decades. For example, by the 1900s Harvard's President, Charles Elliot, and William Harper, President of the University of Chicago joined John Dewey in opposition to the graded-school concept. Numerous experiments on nongraded structures continued in the years that followed the early controversy according to Goodlad (1963).

The largest trails of nongrading in schools occurred in the 1950s and 1960s, although, these programs accounted for less than 2% of all American schools in 1960 according to Miller

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<sup>1</sup> For an extensive review of the literature, the reader is referred to Anderson & Pavan (1993); Anderson (1987); Cain, et al., (1994), Goodlad (1963); and Pavan (1973).

(1967). Until the late 1950s, the more current nongraded concepts such as heterogeneous grouping, team teaching, and continuous progress curriculum were not consistently reported.

Talk of restructuring has again sparked interest in nongrading as an organizational framework. Cuban (1989) notes that grouping across age and ability, team/cooperative teaching, core curriculum, and cooperative learning are all features of the model as it emerges again. The Kentucky Education Reform Act of 1990 mandates nongraded primary schools statewide, and in Oregon and many districts around the country nongraded primaries are becoming an important alternative to traditional school (single-grade) patterns (Willis, 1991).

### Definition

Many definitions of a nongraded program abound, but most have certain features or criteria in common. Anderson (1987) defines nongraded as:

The essential organizational structure...would feature a combination of nongradedness, multiage pupil groups, cooperative teaching linked with differentiated staffing, and flexible shared space. (p. 45)

DeLorenze and Salter (1965) focus more on the nongraded structure's ability to accommodate individual progress rates of students by eliminating arbitrary grade classifications and expectations. Miller (1967) broadens the nongraded definition by specifying the lack of failure or retention in a nongraded program and emphasizes program flexibility to make instructional adjustments.

Nye's (1993) working definition for nongraded continuous progress programs for this study is based on an inventory of critical components identified in the literature. The definition is as follows:

...the practice of grouping children of more than one age and ability level (usually three age levels) together with a goal of maximizing teaching practices involving interaction, experiential learning, and fluid, flexible small group participation among children so that they experience a continuous progression of learning (cognitive and social) in keeping with their individual rate of knowledge and skill acquisition within an environment which prohibits artificial and arbitrary points which benchmark failure such as retention during the primary years. (p. 3)

Critical elements in nongraded programs involve: 1) how groups are formed -- heterogeneous age and ability, and ever-changing in membership; 2) avoidance of grade labels; 3) individual progress rates; 4) less reliance on traditional textbooks and more reliance on small group instruction; 5) linkage between kindergarten and primary years; and 6) separation between the primary and upper elementary levels in terms of developmental organization and curricula

practices (Anderson, 1987; Cuban, 1989; Cushman, 1990; and DeLorenze & Salter, 1965; Goodlad & Anderson, 1963; McLoughlin, 1970 & 1972). Nye (1993) has also observed such elements as: 1) teacher cooperation/teaming; 2) more reliance on small group experiential (or hands-on) instruction; 3) use of cooperative learning and the whole language approach; and 4) emphasis on social development.

### Research Outcomes of Nongraded/Multiage Programs

Research reports on nongraded primary school programs generally fall into two categories, measures of academic performance and measures of social/affective factors. When considering academic performance examined by standardized testing, the results of graded versus nongraded programs tend to be somewhat inconclusive. DeLorenze & Salter (1965) reported six studies in which the nongraded programs produced superior academic performance. Miller (1967) and Ellison (1972) found children in nongraded programs did better academically. Recently, Gutiérrez & Slavin (1992) and Anderson & Pavan (1993) concluded that results indicated a consistent advantage for nongraded programs. However, Cohen (1990) reported a number of comparison studies to be inconclusive, as did Connell (1988), Cushman (1990), Freeman (1984), and Milburn (1981). Their conclusion was not that children do better academically under a nongraded program, but that they rarely do worse. This does address one of the most often expressed fears about dramatic reform, the solution turns out to be worse than the original problem.

Based on the research, for nongraded primary schools there seems to be little risk of decline in students' ability to cope with academic demands. However, the results from studies that examined social/affective factors are quite different. Most research, both recent and historical, agrees that social/affective factors are all more positive in nongraded programs. Nongraded programs lead to such outcomes as improved student attitude toward school, fewer discipline referrals, increased attendance, improved peer relations among students, and improved attitude towards work (Brown, 1965; DeLorenze & Salter, 1965; Drier, 1949; Goodlad & Anderson, 1963; Lewis, 1969; Miller, 1967; Pavan, 1973; and Smith, 1968).

### Academic Research Findings

Pavan (1973) examined 22 studies conducted between 1961-68. Of those 22, only 16 studies used standardized objective measure. She reported that in only 1 of those 16 studies did the traditional-graded school outperform the experimental-nongraded school. The other 15 studies favored the nongraded experimental program or showed no significant difference. She argued that the discussion should be framed in this manner because of the other beneficial aspects of a nongraded program.

There should no longer be concern that placing children in nongraded programs will be detrimental to their academic achievement. These recent studies of performance on standardized achievement tests showed only one negative comparison, eight positive ones in favor of nongrading and seven with no significant differences. In general, nongraded groups perform as well as, and possibly better than graded groups on tests designed for the graded school! (p. 338)

Gutiérrez & Slavin (1992) selected studies of elementary (K-6) nongraded school programs from 1958-1985. The number of studies were reduced to those satisfying the requirements of the *best-evidence synthesis* that Slavin (1986) developed as an alternative to meta-analysis or narrative reviews. They further divided the research into different types of nongraded program implementations: 1) nongraded programs involving only one subject, 2) nongraded programs involving multiple subjects, 3) nongraded programs incorporating individualized instruction, 4) nongraded Individually Guided Education (IGE) programs, and 5) studies lacking descriptions of nongraded programs.

Although "nongrading" for only one academic subject does not meet the accepted definition of nongraded, the research findings for all studies that examined cross-grading for reading groups showed substantial positive results favoring nongradedness. The 14 studies cited within this category had reading effect sizes from ranging from +0.03 to +0.57 (Gutiérrez & Slavin, 1992).

The findings for the second category, full curriculum nongraded, generally favored the experimental group. Most of the studies reported statistically significant results and in none of the studies was there a significant difference in favor of the graded control group. The 11 studies cited in this category for which effect sizes could be calculated had a range of 0.0 to +0.61 in reading and -0.36 to +0.73 in mathematics. A suggestion was advanced that in the three studies where no significant difference was found, there was reason to believe that the schools in the control group had incorporated aspects of a nongraded structure into their curriculum. The authors noted that: "Across many studies, greater duration of the program was associated with higher positive differences." (Gutiérrez & Slavin, 1992, p. 352)

The third synthesis category included full curriculum nongraded programs with different specialized approaches, or nongraded programs where the exact type of implementation could not be determined. For these categories the research findings were consistent with the previous two categories, with an indication that over-specialization could detract from some of the advantages of nongraded primary programs. Of the 57 total studies reviewed by Gutiérrez & Slavin (1992) 20 had significant positive results and only 3 had significant negative results. The

authors state that findings similar to theirs have been used to conclude both the advantage and disadvantage offered by nongraded primary schools. They, however, take the position that:

...the evidence presented here supports the conclusion that the effects of nongraded programs depend on the type of program implemented. Using median effect sizes rather than box scores, one sees that the positive effects of nongraded organization are most consistent and strongest when the program focuses on the vertical organization of the school and when nongrading is used as a grouping strategy but not as a framework for individualized instruction. (p. 368)

### Affective Research Findings

The perception of researchers and practitioners about nongraded primary schools are universally positive in the social/affective domain. Barker (1986), in his report on the approximately 800 one-room schools remaining in the U.S. in 1984, remarked on the positive attitudes of children and teachers, even though teachers had such extra duties as cleaning the building, driving the bus, and providing or referring social services. Freeman (1984) comments joyously on the attitudes of children working as individuals and in small groups in her combination classroom. The Kentucky Education Association (1991) surveyed ten long-term nongraded primary implementations as it prepared for statewide adoption to discover what experience and outcomes these programs had. The three most commonly mentioned positive outcomes were increased student motivation, fewer discipline referrals, and increased parental satisfaction.

### Current Research Design

#### Assets & Limitations

The School Success Study adds to the research on nongraded programs in several unique ways. The study utilizes guidance from school practitioners in designing research questions and implementing the data collection process. The attempt to verify initially, and during the study, whether or not the schools are actually implementing a nongraded program as defined in the literature is an important component that has been lacking in previous research. Another advantage to the SSS is that a holistic writing assessment is included so that academic achievement is not measured by standardized testing alone. Further, this study seeks to provide longitudinal data on an entire cohort of students (K-4) progressing in both nongraded and single-grade programs from schools with similar demographic characteristics.

The main limitation of the study is the use of standardized achievement tests to assess students' academic performance. The SSS researchers and network practitioners recognize the overall deficiencies of such instruments in terms of the current need to align assessment (authentic and performance-based) more closely with classroom curriculum. This is applicable

to both nongraded and graded programs. However, in the case of the SSS this limitation is more detrimental to the nongraded teachers participating in the study since they are obliged to break their students out into graded groups for testing purposes. This practice contradicts the principles of a truly nongraded program where even the semantics of grade levels are to be avoided. Unfortunately appropriate instruments are not yet available for use in the SSS, nor has adequate teacher training been provided on the administration of alternative tests. If possible, network members will try to add an instrument that overcomes this limitation, but because Tennessee mandates a standardized achievement test for grades 2 through 8 this would mean extra test administration for teachers participating in the SSS.

### Sample Selection

#### School Attributes

For the purposes of this study, seven nongraded program schools in Middle and East Tennessee have been chosen for analysis as experimental schools, two rural, three suburban, and three urban. These schools were chosen because they had either been a part of Tennessee's nongraded pilot program since 1991, or had been validated as having the necessary components (to one degree or another) to generally be considered as nongraded, and they are willing to follow the same standardized assessment process of pre- and post-tests used in the study. In addition, they agreed to provide demographic data concerning their students and teachers and allow observations of program implementation using a typology of nongradedness (Pavan, 1972), as well as completing self-assessment questionnaires.

Five single-grade structured schools have been chosen as control schools: they are representative of urban, rural, and suburban schools in Tennessee. These schools closely match the student demographic characteristics (race, gender, and socio-economic status) and school sizes of the nongraded schools. These schools are assumed to incorporate various successful practices and are not paired to simply compete on tests with their nongraded counterparts.

Two of the participating school systems required the network to use one single-grade school as the partner school for two nongraded program schools. Nongraded/single-grade school partners have been selected from the same school system, with the exception of one pair. The selection criteria of partner schools within the same system could not be used for one nongraded school because the county instituted a system-wide implementation of the nongraded program. Thus, a school with similar demographics and funding levels in a neighboring county was chosen as the partner school. Like the nongraded schools, the single-grade schools have consented to: provide the necessary student and teacher demographic data; allow the implementation of the standardized assessments, both pre-and post-tests; allow outside classroom observations; and complete questionnaires.

The nongraded schools include a range of implementation strategies. A few schools implement the nongraded program school wide and include multiple teacher teams within a school. This has evolved over the course of the study as with most field research, while others implement the program in a single-teacher team. Other schools' nongraded programs fall between these two extremes. For example, one school has 11 (K-3) nongraded classrooms and 15 single grade (K-3) classrooms. In those schools that implement the program in only a few classrooms, analysis will be conducted to examine teacher selection criteria and to determine the differences between nongraded teams and traditional classes within the same school. In addition, these schools can be used to assess the extent of "contamination" of nongraded programs by the single-grade classrooms and conversely, the single-grade classroom structure by the nongraded paradigm. Demographics for both the nongraded schools and their single-grade school partners are shown in Table 1.

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Insert Table 1  
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#### Student Attributes

From both the nongraded and traditional schools, a cohort of students in kindergarten (all K/age 5) classes have been given the Level 10 Tennessee Comprehensive Assessment Program (TCAP) as well as the pre-school/kindergarten form of the Self-Concept and Motivation Inventory (SCAMIN) as pre-tests in the spring of the kindergarten year. This was done to establish a baseline and allow researchers to control for variances in student preparation before inclusion in the nongraded program. In subsequent years, additional cohorts from first-grade classes in the single-grade schools and age-appropriate students from the nongraded schools will be selected and assessed in the same manner each year 1993-94 through 1998-99. By the end of the study, two cohorts that began schooling in kindergarten will have been assessed through the end of grade 4 (see Table 2).

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Insert Table 2  
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Students who enter the nongraded program later than others in their cohorts will also be included in the study. However, they will be identified so that the type of class attended in the years previous to their entry in the nongraded program and their length of exposure to the nongraded programs can be assessed and analyzed. In those schools that do not institute nongraded programs school wide, the selection criteria for determining the student's inclusion into the nongraded program will also be analyzed.

## Instrumentation

### Program Assessment

A self-reported version of Pavan's revised "Principles of Nongradedness" instrument has been given to assess the degree of nongraded program implementation. Pavan's instrument is made up of six different sub-sections: Goals of Schooling, Organization, Curriculum, Instruction, Materials, and Assessment. These subsections will allow assessment of subtle differences in implementations of the program, such as use of integrated themes, student involvement, and use of alternative methods. Records of observations of classes within each school were also made as a random check on the accurateness of the self-report questionnaires.

### Student Assessment

The TCAP is a standardized achievement test that includes norm-referenced component (NRT) as well as a criterion-referenced test component (CRT). Kindergarten TCAP scores will be used as pre-tests and will establish a baseline to enable analysis of student achievement differences before and after program implementation.

During grades 3 and 4 an additional assessment is included in TCAP, the Tennessee Focused Holistic Writing Assessment. This assessment, through the use of prompt writing, enables the researcher to examine both mechanics, such as grammar, sentence structure, and vocabulary; and higher level skills, such as organizational planing, ability to maintain focus, sense of audience, etc. The students writing is then assessed according to specific scoring criteria into a 6 point scale: (1) Seriously Deficient (2) Moderately Deficient (3) Slightly Deficient (4) Moderately Proficient (5) Proficient (6) Exceptionally Proficient. This instrument enables the assessment of students to more accurately reflect the presumed strengths of nongraded programs.

All students in each cohort of both the nongraded and single-grade programs are being assessed with the same instruments. Demographic data is being collected on each student, i.e. ethnicity, gender, and socio-economic status (SES). Socio-economic status is being assessed by students participation in the free or reduced-priced lunch programs. The students' identification number, name, birthdate, teacher identification number, school identification number, and system identification number will be recorded each year. This research design allows student data to be matched during the multiple years of the study; allows change scores to be calculated from standardized tests; and takes into account changes in a student's SES. It is estimated that the study will include over 2,000 students and 100 different teachers in either the nongraded or traditional program.

## Analysis

A number of statistical techniques will be used to analyze the data collected over the five years of the study. General frequencies and cross tabulations, enabling means and chi-squares to be examined, will be used to determine the demographic differences between the nongraded/single-grade school pairs and the entire sample. TCAP scores at each equivalent grade level will be converted to Z-scores and used to compare SSS scores with the state average. TCAP scores will also be used to compute change scores to determine degree of advancement between each year as well as over the life of the project.

Analysis of Variance will be used in a series of more exacting assessments of the impact of the nongraded program. First, an analysis will be conducted assessing the differences between the nongraded and single-grade programs within the same school. Issues such as student and teacher selection criteria, and contamination by other teaching paradigms will be examined. Second, the differences between the nongraded/traditional school pairs will be examined. Separate analyses will be conducted using each student cohort (1, 2, 3, 4, or 5 years). Implementation differences between various nongraded programs and changes in programs over time will be addressed. This analysis will include an examination of the different sub-sections and the total scores of "The Principles of Nongradedness" instrument. Because new students will be allowed to enter into the study, an analysis of the effects of time of entry, as well as number of years in the program should also be examined. Finally, a comparison of all experimental versus all control schools in the study will be conducted using measures of academic achievement and self-concept. Measures using authentic assessment for one or two subject areas have been discussed and may be added at a later date.

## Preliminary Findings

Cohort results are not available since this is only the second year of full implementation of the study and the first year of data analysis. At this point in time, no attempt has been made to analyze the kindergarten test scores because the Level 10 TCAP has been given only to establish a baseline for further research. It is the belief of the researchers, network members, and participating schools that this study requires longitudinal data. First-year results are regarded as preliminary and enlightening, but not conclusive.

There were no significant differences in the amount of teaching experience between nongraded and control school teachers. There are significant differences, however, within the nongraded and graded schools. The average level of experience ranged from 18.28 years in one rural school to 7.01 years in one suburban school.

In addition, experience within the nongraded classroom was conspicuously absent. Surprisingly, 29.2% of the teachers in the nongraded program had never taught in a nongraded program before and an additional 27.1% had taught only one year previously. Thus, 56.3% of the teachers had one year or less experience within the nongraded model. There are considerable differences within the various schools as to the amount of experience teachers had in the nongraded program. One urban school averaged 2.72 years of experience while another urban school averaged only .50 years of experience.

Similarly, the amount of teacher training differed substantially by school. At one urban school the average number of hours for training in the nongraded model was 29.25 hours. By contrast one suburban school averaged only 2.18 hours of training. Almost 40% of the nongraded teachers had received no specific nongraded program training.

An analysis of the "Principles of Nongradedness" reveals a range between the nongraded schools from 86.38 to 100.77. Again these differences were significant. Interestingly, the lowest score on this instrument was attained by one of the nongraded schools, and the single-grade partner school scored higher on this measure. It is also interesting that in this instance on both the TCAP and the Holistic Writing Assessment this same partner school again scored higher than the nongraded school.

Using ANOVA, the vocabulary, total reading, total language, and total math TCAP scores were compared for grades 1 through 4. At the end of the first grade, the control schools' students outscored the experimental schools' students in every case as shown in Table 3. In one test, vocabulary, the students in the control schools scored significantly higher than the experimental (567.29 vs. 554.81). This condition reverses itself for the second-grade students. At the end of the second grade, students in the nongraded schools outscore their counterparts in all four measures. These differences are all significant. For the third grade the students in the nongraded schools outscored the control schools in three of four measures. Only in total language do the control schools outscore the nongraded students. In addition, the scores of the nongraded students are significantly higher in two measures, vocabulary (677.55 vs. 669.70) and in total reading (683.92 vs. 676.84). Finally, at the end of the fourth grade, students in the nongraded classes continue to outscore their counterparts in three of the four measures. Like the third-grade scores, the control group outscore the experimental group in total language. In no case, however, are the differences significant in favor of the control schools as they are in favor of the experimental schools. The results of the TCAP analysis are mixed. In the second and third grades significant results are obtained, however in the first and fourth grade they are not. It must be remembered that the students in grade 1 through grade 4 have had very different levels

of exposure to the nongraded program. These differences will be controlled in the longitudinal study now under way, but are unknown in this preliminary analysis.

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Insert Table 3  
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Table 4 shows advantages for students in the nongraded program based on the results of the Holistic Writing Assessment. For the third grade, the nongraded students outscored their counterparts (3.31 vs. 2.74). This difference in test scores is significant and results in an effect size of .49. Thus, students in the nongraded program scored almost one-half of a standard deviation higher than their control counterparts. This is somewhat surprising, considering that the total language section of the TCAP showed a higher score for the control group, although it was not significant. Similarly, grade 4 students in the nongraded program outscored their counterparts (3.17 vs. 2.55). Again this difference in test scores is significant and results in an even larger effect size (.60).

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Insert Table 4  
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These findings on the Holistic Writing Assessment (given in the spring of 1994) are somewhat surprising considering the low level of overall training to implement a nongraded program and limited time experience in the nongraded programs. In addition, for many of these students this was their first introduction to the nongraded concept. In many cases, the implementation has just begun or the program recently expanded in the experimental schools (1-2 years nongraded program implementation). Further analysis following cohorts of students who have stayed within the nongraded program over the next four years will be examined. Additional questions concerning the level of teacher training, and the cumulative effects of the nongraded and single-grade program will then be addressed.

## Summary

Preliminary findings of this study are in general agreement with the earlier findings of Pavan (1992). So far the schools using nongraded programs have not proven to be detrimental to standardized tests scores. In most instances the nongraded students score as well or better than those students attending single-grade programs. The SSS attempts to improve answers to questions about how nongraded programs contribute to student progress and development as compared to single-grade programs/schools. Also, questions about effective restructuring to offer nongraded programs (and to sustain these programs) can be more fully explained through this collaborative-action-research study.

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**Table-1**  
**Demographics of Participating Schools in the School Success Study**

School	Grades	Enrollment	Nongraded Status	% Non White	% Free/Reduced Lunch
School A	K-2	569	154 Nongraded 415 Graded	70.5%	89.5%
School B	K-4	585	324 Nongraded 261 Graded	69.9%	79.5%
<i>School A &amp; B (Partner)</i>	K-6	479	0 Nongraded 479 Graded	86.8%	84.3%
School C	K-5	402	345 Nongraded 57 Graded	3.0%	38.8%
<i>School C (Partner)</i>	K-4	388	388 Nongraded 0 Graded	0.5%	48.7%
School D	K-6	443	443 Nongraded 0 Graded	9.7%	45.6%
<i>School D (Partner)</i>	K-4	776	0 Nongraded 736 Graded	2.0%	40.9%
School E	K-3	638	275 Nongraded 363 Graded	6.1%	26.3%
<i>School E (Partner)</i>	K-8	408	0 Nongraded 408 Graded	5.4%	19.4%
School F	K-5	410	354 Nongraded 56 Graded	1.0%	40.0%
School G	K-5	358	298 Nongraded 60 Graded	0.0%	42.5%
<i>School F &amp; G (Partner)</i>	K-5	354	0 Nongraded 354 Graded	0.0%	35.9%

**Table 2**  
**Grade Levels by School Years Participating in the School Success Study**

School Year	Grade Levels				
	1993-94	K*	1	2	3
1994-95	K•	1*	2	3	4
1995-96		1•	2*	3	4
1996-97		1	2•	3*	4
1997-98		1	2	3•	4*
1998-99		1	2	3	4•

- \* Cohort I for the longitudinal analysis
  - Cohort II for the longitudinal Analysis
- All grades (age-ranges) are included in analysis

**Table 3**  
**School Success Study TCAP Scores for Grades 1 Through 4 (1993-1994)**

School	Vocabulary	Total Reading	Total Language	Total Math
<b>1st Grade</b>				
Graded (N=421)	567.29*	557.59	603.19	535.81
Nongraded (N=316)	554.81	554.81	548.51	521.38
<b>2nd Grade</b>				
Graded (N=418)	621.50	623.86	556.89	609.25
Nongraded (N=319)	634.93*	642.99*	664.87*	636.96*
<b>3rd Grade</b>				
Graded (N=289)	669.70	676.84	693.89	678.23
Nongraded (N=292)	677.55*	683.92*	691.70	683.84
<b>4th Grade</b>				
Graded (N=360)	689.58	696.80	711.28	709.20
Nongraded (N=183)	690.28	699.25	704.97	712.89

\*  $p \leq .05$

**Table 4**  
**School Success Study Holistic Writing Assessment Results for Grades 3 and 4 (1993-1994)**

	Test Score	Significance	SD	Effect Size
<b>Grade 3</b>				
Graded (N=389)	2.74			
Nongraded (N=281)	3.31*	.0000	1.14	.49
<b>Grade 4</b>				
Graded (N=398)	2.55			
Nongraded (N=209)	3.17*	.0000	1.02	.60