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A comparative study of the ability and achievement of pupils in the graded and nongraded plans of organization in the same school

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A COMPARATIVE STUDY OF THE ABILITY AND ACHIEVEMENT OF PUPILS IN THE GRADED AND NONGRADED PLANS OF ORGANIZATION IN THE SAME SCHOOL

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APPROVAL SHEET

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CHAPTER I

THE PROBLEM AND DEFINITIONS OF TERMS USED

For many years educators have been concerned with professional status and relative effectiveness of different types of school organization in dealing adequately with differences of children. Although innovations and experimentations have been made within the structure of organization to enable the school to provide quality education for children, research on classroom organization, available to the writer, has not presented conclusive evidence to enable one to say definitely that any one type of organization has been better than others for all situations.

For over a hundred years in the United States, the graded school has been synonymous with the public elementary school. The traditional graded school has been accepted as a convenient means of grouping children for instruction. During the last few decades, the nongraded plan of administration has demanded more interest and attention. The nongraded plan of organization was founded on the democratic philosophy that encouraged the maximum development of each child as an individual. This was consistent with valid psychological research, with studies in growth and development, and with the psychology of how a child learns.

THE PROBLEM

Statement of the problem. It was the purpose of this study to

compare the pupils in the graded plan of organization with the pupils in the nongraded plan of organization with reference to ability and achievement.

The writer was concerned with such factors as (1) the pre-school education of the pupils, (2) the readiness status of both groups, (3) the I.Q. status, (4) the achievement of both groups, (5) teacher selection, experience and utilization, (6) the socio-economic status of the pupils, and (7) the effectiveness of the organizational structure in Crestwood Elementary School to meet the needs of children.

Importance of the study. In a democracy it has been frequently stressed that each child has the inherent right to an education commensurate with his own potential. Despite the general recognition by educators that learning should be a continuous, constant process, experienced and enjoyed by a child as he develops within his own personal growth pattern, elementary school organization has not always reflected this philosophy. The objective to be sought through school classification should be to place each child in an educational setting which affords him an optimum, well-rounded opportunity for learning without impeding his physical and social development or his emotional adjust-

In this study, it has been recognized that the graded and nongraded classroom organization have been administrative devices to put into practice the democratic philosophy that has emphasized the value of the individual child. Although the graded and nongraded plans of

organization have been processes of administration, the effectiveness of the administrative change will depend upon its impact on the instructional program of the school. It has been assumed that administration and organization have existed only to expedite the processes of learning.

After a review of the research studies on the achievement of pupils in the graded and nongraded schools in the United States, there was indicated a need for a study to show whether significant differences have occurred in the achievement of pupils in the two plans of organization in a specific elementary school.

Limitations of the study. The study was limited to the comparisons of the ability and achievement of the children in the graded plan of organization at the end of their fourth year at Crestwood Elementary School, Chesterfield, Virginia, and the ability and achievement of the children in the nongraded plan of organization at the end of their third year in the same school. Sixty-four third year pupils and fifty-six fourth grade pupils constituted the sample.

The writer defined the socio-economic status of the pupils by reporting the educational background of the parents that was found in the pupils' cumulative records.

Since the experience, certification and utilization of the teachers were considered to be pertinent to the study of the progress of the pupils in the graded and nongraded classrooms, it was the concern of the writer to investigate the criteria for the selection of the teachers for the nongraded and graded classrooms in Crestwood Elementary School.

The writer has corresponded with educators in Virginia and other states to obtain the current organizational patterns being used in their schools. Many school divisions have contributed printed descriptions of the organizational practices that have been used in their school divisions.

To assist the writer in the study of the graded and nongraded plans of organization, the libraries of the College of William and Mary in Virginia and the University of Richmond have been visited for the purpose of obtaining a listing of the available literature on the graded and nongraded plans of organization, as well as on present day theories of mental health, personality, and curriculum development. Supplementary materials were obtained from the United States Office of Education, the Department of Elementary School Principals, the Virginia Education Association, the National Education Association, and the Association for Childhood Education.

DEFINITIONS OF TERMS USED

Nongraded. The term nongraded was interpreted as meaning a vertical method of organization. It was intended to mean an administrative plan, whereby children were grouped regardless of age, and where extensive effort was made to adapt instruction to the individual differences of children.[1]

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[1] Carter V. Good, Dictionary of Education (second edition; New York: McGraw-Hill, 1959), p. 676.

Graded. The graded plan of organization was interpreted to mean a vertical method of organization, whereby children have proceeded in a measured unit of a school year. It was assumed that all children grow at the same rate and for the same distance within a contained chronological period. It was an organization of the school curriculum into year-long groups of subject offerings, each year's work comprising a grade.[2]

Level. The term has referred to the work to be mastered. It has meant that the curriculum has been divided into small blocks of work. Once a child has achieved the objectives in his social, mental, emotional, and physical growth for a particular level, he has moved to the next higher level.

ORGANIZATION OF REMAINDER OF THESIS

This thesis was organized so that following the introductory chapter, there are chapters that describe the nature and the findings regarding the graded and nongraded structures as reported in the literature, the nature of the graded and nongraded plans of organization at the Crestwood Elementary School, the technique and results of the study on the ability and achievement of children in the graded and nongraded methods of organization, the presentation of the survey data, and conclusions on the value of the graded and nongraded organizational plans

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[2] Ibid., p. 251.

as reflected in the results of the study.

CHAPTER II

REVIEW OF THE LITERATURE

Much has been written on the organization of the school for optimum instruction of the children throughout the evolutionary period of the elementary school. Since grades became the standard pattern for school organization more than one hundred years ago in Quincy, Massachusetts, the individualization of instruction has been proposed in various guises.[3] While innovations and experimentation with school organization had existed for many years, school organization had been scrutinized in the past several decades as to the most effective arrangement for teaching and for learning.[4] A brief summary of practices used in today's schools will be given with reference to the graded and nongraded schools.

LITERATURE ON THE GRADED ORGANIZATION

Clark, in relating the history of public school education in America, found that the graded school was formed for administrative convenience by J. D. Philbrick in 1848 in the Quincy Grammar School of Boston.[5] At that time standards were established to enable the pupil to

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[3]Stuart E. Dean, "Nongraded Schools" (Washington, D.C.: U. S. Department of Health, Education, and Welfare, 1964), p. 1. (Mimeographed.)

[4]Ibid., p. 2.

[5]Charles W. Clark, "The Ungraded Primary School" (Fall Creek, Oregon: Curriculum Bulletin, XVI, 1960), p. 3.

acquire fixed minimum achievement if he made the effort. Within twenty years the system had been accepted and organized on a graded basis with a defined course of study for a definite period of time.[6]

According to Dean, James Philbrick was striving to improve the operational structure of the school as well as to facilitate instruction.[7] He had categorized children according to the number of years in which they had been enrolled in school. When he assumed that progress was regular, and that all children would learn the same thing in the same length of time, he had not considered the possibility of non-promotion.[8] In recognition of the shortcomings that were inherent in the graded plan, educators began to experiment and adjust their organizational plans of administration. Despite the dissatisfaction with the lock-step pattern of the graded school, it was a highly defensible, effective, and successful technique as an administrative device. Although the graded structure served as an efficient way to classify the thousands of children who entered the elementary schools during the period of rapid educational expansion, it had not proved to be so effective as it had been envisioned.[9]

In our rapid educational growth, one central problem had emerged with reference to the organizational structures of the schools. On one hand, there had been the conflict of the long-established graded

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[6] Ibid., p. 3. [7] Dean, op. cit., p. 2. [8] Ibid., p. 3.

[9] John I. Goodlad and Robert H. Anderson, The Nongraded Elementary School (New York: Harcourt, Brace & World, Inc., 1963), p. 56.

structure, and on the other, the increasing awareness of variation in children's abilities and attainments. Goodlad and Anderson, in attempting to measure the academic variation or differences of children in a graded elementary school, found that in the average first grade there was a spread of four years in pupil readiness to learn as suggested by mental age data.[10] Furthermore, it was found that as the pupils had progressed through the grades, the span in readiness had widened. As a child progressed through school, he was found to spurt ahead more rapidly in some subject areas than in others. Consequently, a difference of one grade at the end of the second year between his reading attainment and his arithmetic achievement might extend to a three or four grade difference by the time he had completed his fifth year in school.[11] As a result of their study, they recognized that "the fifth-grade teacher at a given time teaches third, fourth, fifth, sixth, seventh, eighth, and even ninth grades, as far as learner realities were concerned."[12]

Pressey, in his study on the distribution of intelligence in the first, second, and third grades in a single school, reported that the mental ages varied from forty-two months to one hundred twenty months in the first grade, from seventy-two months to one hundred thirty-two months in the second grade, and from eighty-four months to one hundred fifty-six months in the third grade. His findings indicated that the variation in mental ages for first grade were six and one-half years; for a second

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[10] Ibid., p. 3. [11] Ibid., p. 3. [12] Ibid., p. 3.

grade, five years; and for a third grade, six years.[13]

LITERATURE ON THE NONGRADED ORGANIZATION

Dean, in his study on the nongraded schools, found that the central theme underlying the trend towards nongraded school organization was the acknowledgment of the wide range of human differences among pupils.[14] Historically, the nongraded classroom had embraced some of the virtues and merits of the one-room rural school with its cross-section of ages and grades. In reporting the growth of the nongraded movement, Dean found that the first formally recorded program of nongrading in the primary grades was in Milwaukee in 1942. The second city to adopt the program was Appleton, Wisconsin, in 1947.[15] In a 1958-1959 survey, Dean found that eighteen per cent of the urban areas in the United States had indicated some degree of nongrading.[16] At the present time, Dean indicated that reports to the Office of Education revealed a rapidly mounting trend toward the nongraded organization at the elementary school level.[17]

LIMITATIONS OF PREVIOUS STUDIES

The writer was concerned with the available research that had been

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[13] S. L. Pressey, Psychology and the New Education (New York: Harper & Brothers Publishers, 1933), pp. 219-220.

[14] Dean, op. cit., p. 6. [15] Ibid., p. 8.

[16] Ibid., p. 9. [17] Ibid., p. 9.

reported on the emergence from the long-established graded structure to an alternative structure that provided for the continuous, unbroken, upward progression of all learners, with due recognition of the wide variability among pupils in every aspect of their development. It was found that empirical evidence relating to the efficacy of an alternative structure was limited.[18] Through a logical analysis of the nongraded plans that have been used in the school divisions, the potential usefulness of such a plan can be suggested.

FINDINGS ON THE GRADED AND NONGRADED SCHOOLS

Dean reviewed and summarized the research study of Arthur D. Morse on the Appleton, Wisconsin, schools and found:

> Under Continuous Progress less than one-half of one per cent of the students remain an additional year in the elementary school before entering junior high school. Before the plan went into effect, Appleton's failure rate under the conventional graded system ranged from about five per cent in the 1928-35 period to about two per cent in 1951.
>
> According to the standardized achievement tests, they are outperforming their predecessors in graded classes and are exceeding national norms in all subjects.[19]

A study to determine whether there would be a significant gain by primary grade pupils after a variation of the nongraded primary unit had been introduced was made by Joseph W. Halliwell and reported by Dean in the following manner:

Comparing spring achievement test scores of 149 nongraded first,

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[18] Goodlad, op. cit., p. 4. [19] Dean, op. cit., p. 21.

second, and third grade pupils in a school which gradually introduced nongradedness over a two year period, his findings, in brief, were: (1) Significant differences at the .01 level of confidence, in favor of the nongraded group, were found in word knowledge and in reading comprehension of the first-grade children; (2) with the second-grade group, although the nongraded pupils achieved higher scores in all subjects, only in the area of arithmetic was the difference significant at the .05 level; and (3) with the third grade, higher achievement scores were made by the nongraded group in every subject, but the differences were significant only in arithmetic and in spelling at the .01 level and in arithmetic problem solving at the .05 level of confidence.

Thus Halliwell concludes: "In the light of the findings of this investigation, it would seem that a nongraded approach to the teaching of reading and spelling has proved quite effective and is worthy of further investigation."[20]

In the investigation of the relative effectiveness of the graded and nongraded schools through a controlled matched group experimental design, Dean summarized the following conclusions by Carbone:

(1) There was no evidence to indicate that pupils who had attended these nongraded primary schools achieved at a higher level during their fourth, fifth, or sixth years of school than pupils who had attended these graded schools. On the contrary, the differences were all in favor of the graded pupils; (2) in four out of five mental-health factors, there was no significant difference in the adjustment of these graded and nongraded pupils; and (3) teachers in the nongraded schools appeared to operate much the same as teachers in the graded schools.

The implications of these findings are clear. First, it is not realistic to expect improved academic achievement and personal adjustment in pupils merely on the basis of a change in organizational structure. Second, the attainment of high pupil achievement and good mental health is not a unique result of nongrading. The evidence presented here indicates that these goals can also be attained in an elementary school organized under the conventional graded system.

A third extremely important implication is suggested last

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[20] Ibid., p. 22.

> readers see this evidence as an indictment of the whole concept of nongrading. It seems clear that if any new form of school organization is to produce the benefits that its advocates envision, it must be accompanied by appropriate adaptations in the instructional practices of teachers. Changes in organizational structure alone are not enough.[21]

In the 1960 Yearbook of the Department of Elementary School Principals, attention was given to the organization of the primary school. It identified four major developments that have had significant influence on the various organizational practices that have been used in the elementary schools. These developments were considered to be (1) the introduction of the graded school about 1860, (2) the progress in psychology and the concurrent recognition of individual differences just before and following 1900, (3) the development of the testing movement, and (4) research study in the area of human growth and development.[22] The implication was that elementary school organization in the United States had been in a process of change since the beginning of our earliest colonial schools.

According to Luke, the emphasis placed on the process of striving for limited goals, the homogeneity of achievement, and the stress to get all pupils over the passing mark had been factors that had encouraged teachers to set limited goals for instruction which had resulted in temporary fact learning.[23] It would be his aim to develop

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[21] Ibid., p. 23.

[22] National Education Association, Those First School Years, 1960 Yearbook of the Department of Elementary School Principals, p. 145.

[23] Robert A. Luke, "Establishing Conditions for Effective

administrative policies which would make it possible for the teacher to know the pupil well enough to meet his needs and to provide the instructional materials with a range of difficulty and interest appeal commensurate with the needs of the instructional group.[24]

A statistical analysis of the achievement of children from graded and ungraded primary systems in Fairfax County, Virginia, was prepared by the Office of Psychological Services in January 1964. The following conclusions were reached: (1) of the thirty-six comparisons made, only two achieved a level of statistically significant differences, (2) the ungraded system might foster higher performance in arithmetic while the graded system might be more useful in teaching the skills tested by the language arts subjects, and (3) no statement can be made concerning the superiority of either the graded or ungraded system when the criterion for evaluation was pupil achievement as measured by the standardized tests used in Fairfax County.[25]

Heyl, in attempting to determine the best grouping practices for children, concluded that there was no one best method of organizational instruction which would perfectly meet the educational needs of all the children all of the time.[26] However, she felt that the organizational

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Learning," Elementary School Principal (December 1958), p. 18.

[24] Ibid., p. 19.

[25] A Statistical Analysis of the Achievement of Children From Graded and Ungraded Primary Systems, A Report Prepared by the Office of Psychological Services (Fairfax: 1964), p. 2.

[26] Helen Hay Heyl, "Grouping Children for Instruction," National

plan should consider the psychological theory that "children learn most advantageously as their experiences are complete rather than in isolated units."[27]

Goodlad, in reporting on the justification of a specific plan of organization, felt that (1) the organization should provide for continuous progress for the children, (2) should provide for placement of children in the best educational environment, and (3) should encourage a reasonable balance of success and failure.[28]

In order to illustrate a typical classroom situation with which teachers everywhere were faced, Goodlad and Anderson had presented certain statistics on a first-grade group of children of the lower middle section of the socio-economic class scale in Table I, page 16. The mental ages of the pupils ranged from approximately three years ten months to eight years four months--a spread of four and one-half years.[29]

The intelligence quotient of the children was found to range from sixty-eight to one hundred twenty-nine with an arithmetic mean of one hundred one. The purpose of the achievement tests was to measure accomplishment in school learning tasks. By analyzing the table, it can be seen that the achievement level began to approximate the range in

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Elementary School Principal (December 1958), p. 6.

[27]Ibid., p. 9.

[28]John I. Goodlad, "Inadequacy of Graded Organization--What Then?", Childhood Education (October 1962), p. 274.

[29]Goodlad, op. cit., pp. 2-6.

TABLE I*

DATA FOR A FIRST-GRADE CLASS (MAY)

Child	C.A.	M.A.	I.Q.	Paragraph Meaning	Word Meaning	Spelling	Arithmetic Reasoning	Arithmetic Computation	Battery Median
1	6-6	7-9	119	1.9	2.4	3.0	3.1	2.3	2.4
2	6-8	7-4	110	1.8	1.7	2.7	2.4	2.3	2.3
3	7-2	7-0	98	2.2	2.0	2.3	2.2	2.3	2.2
4	7-2	8-9	122	1.5	2.2	2.8	2.1	2.3	2.2
5	7-0	8-0	114	1.7	1.6	2.8	2.2	2.3	2.2
6	6-8	6-8	100	1.9	1.7	2.3	2.2	2.3	2.2
7	7-1	8-2	115	1.9	1.5	2.6	2.2	2.2	2.2
8	6-11	7-5	107	1.7	2.3	2.9	1.8	2.2	2.2
9	6-11	6-0	87	1.6	2.1	2.6	1.7	2.2	2.1
10	7-3	7-11	109	2.1	2.3	2.5	1.6	1.7	2.1
11	6-10	7-10	115	2.9	1.9	2.8	2.1	2.0	2.0
12	6-10	6-5	94	1.7	2.0	2.0	1.8	2.0	2.0
13	7-0	9-0	129	1.9	1.4	2.7	1.7	2.0	1.9
14	7-5	5-8	76	1.6	2.0	2.7	1.7	1.7	1.7
15	6-10	7-1	104	1.1	1.1	1.6	1.8	2.3	1.6
16	6-9	7-5	110	1.2	1.2	2.3	1.6	1.8	1.6
17	7-2	6-10	95	1.1	1.6	1.6	1.6	1.7	1.6
18	6-6	6-11	106	1.0	1.5	1.0	1.5	2.0	1.5
19	6-5	6-0	94	1.0	1.5	1.2	1.3	1.4	1.3
20	6-8	6-1	91	1.3	1.4	2.0	1.2	1.3	1.3
21	6-8	7-4	110	1.0	1.0	1.3	1.6	1.3	1.3
22	7-1	6-6	92	1.2	2.2	1.3	1.2	1.6	1.3
23	6-5	5-6	86	1.2	2.2	1.0	1.2	1.2	1.2
24	8-0	7-0	88	1.3	1.1	1.1	1.2	1.0	1.1
25	6-7	4-6	68	1.2	1.2	1.0	1.0	1.0	1.0
26	7-5	7-3	98	1.0	1.0	1.0	1.7	1.4	1.0
27	6-11	6-1	88	1.0	1.0	1.0	1.0	1.0	1.0

*This table was reproduced from The Nongraded Elementary School by John I. Goodlad and Robert H. Anderson, p. 7.

intellectual readiness to learn soon after first-grade children were exposed to normal school instruction.[30]

Further analysis of Table I had shown some interesting aspects of the pupils' progress. While children at the top and at the bottom were inclined to do exceptionally well or consistently poorly, exceptions had occurred. Although child 11 was just above the median for general achievement, he was top achiever in paragraph meaning and one year ahead of child 1 in this field. The table revealed that the range for child 1 was more than a year even though he had attended school for only eight months. Goodlad and Anderson wrote:

> Before a given child completes the first grade, his achievement scores frequently vary by more than a full grade from subject to subject. Likewise, children who tend to be generally slow or rapid learners usually reveal at least one major inconsistency in scoring a full grade above or below their general achievement profiles in at least one learning area.[31]

Goodlad presented data for the same group eleven months later. In Table II, page 18, only twenty-two of the original twenty-seven remained, but the group had increased to thirty-nine pupils.[32]

Several pertinent observations can be made. The spread in mental age was greater than it was eleven months previously. The achievement range in the language areas had moved closer to the mental age range than it was the year before. Although there was a considerable range in arithmetic, it did not reflect the mental age range

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[30] Ibid., p. 7. [31] Ibid., pp. 8-9.

[32] Ibid., p. 9.

TABLE II*

DATA FOR A SECOND-GRADE CLASS (APRIL)

Child	C.A.	M.A. (estimated)	I.Q. (estimated)	Paragraph Meaning	Word Meaning	Spelling	Arithmetic Reasoning	Arithmetic Computation	Battery Median
1	7-5	8-10	119	3.7	4.7	4.2	3.9	2.5	3.9
2	7-7	8-4	110	4.2	3.7	4.5	3.5	2.5	3.7
3	8-1	7-11	98	3.5	3.1	3.7	3.9	2.3	3.5
4	8-1	9-10	122	4.8	4.9	4.5	3.9	2.5	4.5
5	....	....	....	....	....	....	....	....	....
6	7-7	7-7	100	2.5	2.2	3.2	2.8	2.2	2.5
7	8-0	9-2	115	3.7	3.2	4.3	3.9	2.5	3.7
8	7-10	8-5	107	3.5	3.5	4.3	3.5	2.2	3.5
9	....	....	....	....	....	....	....	....	....
10	8-2	9-0	110	3.0	2.4	3.2	2.8	2.3	2.8
11	7-9	8-11	115	4.2	4.2	4.6	4.1	2.5	4.2
12	7-9	7-3	94	3.5	3.2	3.4	2.8	2.4	3.3
13	7-11	10-2	128	3.9	2.8	3.7	3.1	2.4	3.1
14	8-4	6-4	76	2.7	2.8	3.7	1.9	2.2	2.7
15	7-9	8-1	104	2.0	2.4	2.7	2.6	2.3	2.4
16	7-8	8-5	110	2.5	2.3	2.7	2.8	2.3	2.5
17	....	....	....	....	....	....	....	....	....
18	7-5	7-10	106	1.3	1.4	1.7	2.3	2.3	1.7
19	7-4	6-11	94	1.9	1.9	2.5	2.2	1.3	1.9
20	7-7	6-11	91	3.3	3.5	3.2	2.2	2.1	3.2
21	....	....	....	....	....	....	....	....	....
22	8-0	7-4	92	1.9	1.9	1.7	1.9	1.8	1.9
23	7-4	6-4	86	1.5	1.2	1.6	2.1	1.8	1.6
24	8-11	7-10	88	1.3	1.9	1.4	1.8	1.6	1.6
25	7-6	5-1	68	1.5	1.7	1.5	1.5	1.3	1.5
26	8-4	8-2	98	1.8	2.2	1.6	2.2	2.3	2.2
27	....	....	....	....	....	....	....	....	....

*This is the same group depicted in Table I, one grade and eleven months later.

observed in the language areas.[33]

These data suggested that the initial spread among pupils in intellectual readiness had grown greater as children advanced through their second year of school. Also, the spread in achievement in the subject areas had grown greater. Since the child with the highest I.Q. had not established himself ahead of the group so far as achievement was concerned, he was apparently operating below expectancy.[34]

Child 24, the first-grade repeater, had lagged near the bottom in achievement during his second year. Nonpromotion, characteristic of the graded school, had not advanced his achievement significantly.[35]

Several more observations concerning the wide differences among subject areas for a given child can be seen. A spread of one year from one subject area to another subject area has been the rule rather than the exception. Thus, Goodlad stated:

> Obviously, attempts to group these children homogeneously in relation to an overall concept of homogeneity (such as ability to do school tasks as revealed by I.Q. or M.A.) or in relation to some fixed standard of normality (such as grade level) are doomed.[36]

Standler questioned the assumption that there had been less damage to the child's self-concept if he had moved slowly under nongrading rather than having been retained under the grade system. She concluded that the nongraded plan had substituted rigid level standards

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[33] Ibid., p. 9. [34] Ibid., pp. 9-11.

[35] Ibid., p. 11. [36] Ibid., p. 11.

for rigid grade standards.[37]

Louis T. Di Lorenzo and Ruth Salter in their report on the nongraded plan of organization found that it was the principal contender for attention at the elementary school level.[38] From 1959 to the present, they found eight comparative research studies that had been reported.[39] Of the eight studies, six made comparisons in reading achievement, primarily in grades three, four, five, and six. The performance of the nongraded pupils in four studies was found to be significantly superior to that of the graded pupils; one study revealed no difference; and one found that the graded group was significantly better than the nongraded group.[40] Five studies had made a comparison of the two kinds of organization with reference to its effect on arithmetic achievement.[41] Four of these studies indicated significant advantages to the nongraded plan of organization. The other study favored the graded classes in its findings.[42] The three studies on spelling achievement favored the nongraded pupils.[43]

The results of the responses of 521 New York State School Districts to questionnaires on nongraded elementary school programs,

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[37]Celia B. Stendler, "Grouping Practices," Those First School Years. 1960 Yearbook of the Department of Elementary School Principals, pp. 147-165.

[38]Louis T. Di Lorenzo and Ruth Salter, "Co-operative Research on the Nongraded Primary," The Elementary School Journal (February 1965), p. 269.

[39]Ibid., p. 273. [40]Ibid., pp. 273-274. [41]Ibid., p. 274.

[42]Ibid., p. 274. [43]Ibid., p. 274.

as reported by Di Lorenzi and Salter, are found on page 22 in Table III.

SUMMARY ON THE FINDINGS IN THE LITERATURE

The evidence as presented in the literature had indicated that the majority of today's elementary schools classify children by grades, but that dissatisfaction with this lock-step method of the graded plan of organization with its promotion policies, reporting practices, and other immediate concerns had resulted in the investigation of an alternative pattern of organization. The plan of organization that had received the most attention in the elementary school was the nongraded structure.

Much had been written on the definition, organization, operation, and planning for the nongraded organization, but the research on the effectiveness of the nongraded organization had not shown positive evidence that one plan of organization was superior to another. It had been seen as an evolving venture based on the recognition of individual differences that exist among children.

TABLE III*

RESPONSES OF 521 NEW YORK STATE SCHOOL DISTRICTS TO QUESTIONNAIRES ON NONGRADED ELEMENTARY SCHOOL PROGRAM

Response	Number	Per cent
Nongraded program in operation one, two, three, or more years	50	9.6
No nongraded program but planning one for 1963-64	9	1.7
No nongraded program but desire help in becoming nongraded	2	.4
No nongraded programs past, present, or anticipated	449	86.2
Nongraded program discontinued	3	.6
Respondent confused nongraded program with ungraded program for retarded	8	1.5
Total	521	100.0

*The results of the study by Di Lorenzi and Salter.

CHAPTER III

THE ORGANIZATIONAL STRUCTURE OF CRESTWOOD SCHOOL

Prior to the 1962-63 session, administrative organization in the elementary schools in Chesterfield County was geared to a graded structure. An educational program which provided for a flexible curriculum based on the principles of human growth and development was envisioned by the division superintendent and his staff. After extensive planning and study, it was decided that the central idea governing this change in the organizational pattern was the concept of individualized instruction as an attempt to provide the opportunity for continuous and sequential growth for the children. Since the philosophy of the nongraded primary was one of continuous growth for the child, it was decided that this specific program would be initiated in the Crestwood Elementary School during the 1962-63 session.

Under construction and scheduled for completion before September 1962, Crestwood Elementary School was located in a rapidly developing urban community in Chesterfield County. When the school opened, there were twenty classrooms which accommodated six hundred fifty children. At the end of one year, seven additional classrooms were added and completed before the 1963-64 session. Since that time, the average enrollment of the school had increased to eight hundred twenty-five pupils in grades one through seven. These data are shown in Table IV, page 24.

TABLE IV

ENROLLED PUPILS OF CRESTWOOD ELEMENTARY SCHOOL, CHESTERFIELD, VIRGINIA

Session	Boys*	Girls*	Total*
1962-63	359	317	676
1963-64	429	414	843
1964-65	401	402	803

*All figures represent the enrollment of Crestwood School at the end of the school session.

ADMINISTRATION OF THE ORGANIZATIONAL STRUCTURE

It was decided by the administrative staff that the nongraded program was to be adopted for three years on an experimental basis in Crestwood School. The children who entered the school in September 1963 for their first year in school were to be the experimental or nongraded group. Since only the first year was to be nongraded, the pupils in grades two through seven were to be classified in the graded structure of the school.

The role of the administrator. Before the various aspects of the organization of the school are discussed by the writer, the role of the school principal should be defined. Administration has been seen as "the guidance, leadership, and control of the efforts of a group of individuals toward some common goal."[44] One of the major responsibilities of the principal was to introduce and define the nature of the nongraded program to the teachers and the parents of the pupils enrolled in the nongraded classrooms. Also, it was important that all of the teachers in the school had an understanding of this change in the organizational pattern in the school. It was assumed that the success of any administrative change required the understanding and cooperation of the teaching staff and the parents.

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[44]Sister Mary Alice, "Administration of the Nongraded School," The Elementary School Journal (December 1960), p. 148.

The nongraded program. The nongraded program was seen as one of pupil accounting rather than of instruction. It was not the intention of the experiment to depart from the instructional procedures used by good teachers. Rather than a method of teaching, the nongraded program was interpreted as a vertical pattern of organization designed to encourage and to promote a philosophy of continuous mental, social, emotional, and physical growth for the individual child.

The purpose of the nongraded organization was to provide for a child's continuous learning from the time that he entered Crestwood School until he had completed the work that was expected of any third grade pupil in the Chesterfield County elementary schools. When the child completed the three years work, he would advance to the fourth grade. This meant that some children would complete the program in three years, some in two years, and some in four years. The aim of the program was to provide a flexible curriculum that adjusted to the child's growth pattern rather than one that forced the child into a fixed curriculum. This was accomplished by abolishing grade lines and by establishing a series of levels which were geared to the existing instructional program. Thus, as a child progressed vertically through the first three years of school, he would advance from one level to the next when the time was expedient for the welfare of the child.

The graded program. Promotion to the next grade or retention in the same grade was a means for placement of the pupils in the graded

organization at Crestwood School. The classification of the graded students was one of heterogeneity rather than of homogeneity with regard to the grouping of children. Although the graded structure was a vertical pattern of organization, there was horizontal grouping in the classrooms. In the graded and nongraded classrooms, it was the aim of each teacher to determine the progress level of each pupil and to begin his instructional program at this stage of his development.

Grouping in the nongraded classrooms. Within each classroom, the teacher grouped for instruction according to the level of development of each child. One of the difficult problems in the administration of the nongraded program was the timing of the re-grouping of children to their appropriate levels.

When the first year pupils entered Crestwood School, they were assigned by chronological age to a first year classroom. During the first weeks of school, the children were given the Metropolitan Test of Readiness to determine readiness for formal instruction in reading and arithmetic. If the results indicated that the child had been placed in a classroom that was not suitable to his maturity level, he was moved to a more appropriate situation. By grouping the children so that no child was more than one year younger or one year older, chronologically, than the other children in a classroom, it eliminated a mass re-grouping of the children during the year. This provided the opportunity for moving the children up or down in the same classroom.

It was found that it was feasible for teachers in the nongraded

primary to work cooperatively in an attempt to assure the placement of children in an appropriate situation where they could work and grow easily, comfortably, and successfully. Although the teachers were optimistic in their expectations of the worth of the program, it was acknowledged by all that no operational pattern was a panacea for all educational ills.

Although educators had been aware of the interrelation of physical, mental, and emotional aspects of growth, they had grouped children in grades on the basis of academic achievement, thus emphasizing only one aspect of growth. In the nongraded organization, the child was moved to a younger or older age group as the need was identified. The decision to move a child to a better living-learning situation was made at any time during the school year.

By moving the children as the need became apparent, the teacher in the nongraded plan had no grade level expectations against which to pace himself. As a basis for grouping children, differences in learners and subject matter must be considered in timing and pacing the learning process.[45] In essence, the grouping process was one that was flexible and that directed attention to individual needs, abilities, and interests of the pupils.

Level identification. A feature which had become common to most

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[45]Goodlad, op. cit., p. 90.

nongraded programs was the use of levels. This meant that the curriculum had been divided into small blocks of work rather than into broad and designated subject areas which had been required under the traditional primary organization. In Crestwood School, all areas of the curriculum were considered, rather than the one area of reading which was found to be a common practice in many nongraded schools. No time limit was set for the accomplishments of the goals on any level.

Levels one through four were identified as the four stages of growth for the first year. Subsequently, the levels were known as levels five and six in the second year and as levels seven and eight in the third year. A guide for teachers was developed to assist the teacher in evaluating the child on the mental, social, emotional and physical growth that was expected on each level of development. Each child was evaluated on his growth in the mastery of the skills in reading, writing, spelling, numbers, social studies, physical education, health, safety, culture, social, emotional, eye, ear, motor, and work study on each level during his first three years in school. Supplementary materials were used to strengthen each child in his development at the end of each level. In some cases, those children who lacked maturity for the next level were given additional supplementary tasks to aid them in developing the skills necessary for the next step in their sequential growth.

The steps, or levels, provided a means of establishing continuity of instruction and of recording the progress of pupils according to their

abilities and achievements. Each level, conceived as a prescribed set of skills or achievements, was a unit of achievement rather than a unit of time. The academically talented child advanced to the next level without waiting for those pupils who needed more time to meet their educational expectations. Neither was a child required to repeat what he had learned nor was he retained at the end of the year. He began in September where he had left off in June.

Evaluating pupil progress. It had been suggested that each child's success in school should be measured by his capacities, not by the achievements of his classmates or upon predetermined grade standards. Data used in evaluating pupil progress in the graded and nongraded classrooms came from many sources. The cumulative record provided an insight into the child's general pattern of progress. The information regarding the child's pre-school experiences and background was obtained from the registration form that was completed by the parent when the child entered Crestwood School.

The results from the Metropolitan Readiness Tests, the Kuhlmann-Anderson Intelligence Tests, and the Science Research Associates Achievement Series Tests were recorded on the child's appropriate skill and personal growth card. To provide the teacher with additional information on the achievement and growth of the child, reading tests were given at the end of each reading level. These and other techniques were used in the classroom so that the teacher could learn more about children, their capacities, their growth, and their problems.

Additional information on the pupils was obtained through conferences with parents, with the children, and with other teachers who had worked with the children. Foremost in the teacher's mind was the allowance of time for each child to achieve at his pace on the proper level at the right time.

Reporting to parents on pupil progress in the graded classroom was done by the use of the traditional report card. Letter grades were used to indicate the degree of achievement of the pupils in the various subjects in a particular grade. In the nongraded classroom, checks were used on the progress report to designate mental, social, emotional and physical growth of the child. An additional space was provided on the evaluation card to allow the teacher to comment fully on a child's progress.

Through general orientation meetings, an explanation was given to parents on the philosophy of the nongraded program and the methods used in reporting pupil achievement. Conferences with parents on the progress of their children assisted the teacher in maintaining a cooperative attitude between the home and the school.

SELECTION, EXPERIENCE, AND UTILIZATION OF TEACHERS

Factors that have contributed to a child's experience in school have been the philosophy and aims of a school; the rules, regulations and operational procedures that effect these aims; the background and the calibre of the instructional staff and its administrators; the home

environment of the child; and the child's interest and nature.[46] Perhaps the most important person in a child's school life had been his teacher. Therefore, the selection of the teachers who were to effect the instructional program in the nongraded classrooms was crucial to the success of the program.

Selection of teachers. Those teachers who had shown a preference for teaching in a nongraded situation and had been found to be successful in their primary teaching experiences were appointed as teachers in the nongraded primary in Crestwood Elementary School. The same criteria for the selection of teachers for the second and third year classrooms were used. The plan was that the nongraded program would develop into the second year in the 1963-64 session and into the third year during the 1964-65 session. For this reason, all teachers employed in the nongraded primary should have the same qualifications for and belief in the program.

In the graded classrooms, all of the teachers had their bachelor's degree and collegiate professional certificate in elementary education. In the 1962-63 school session, two of the graded classrooms were combination classes which were similar in operation to the nongraded classroom.

In preparation for the nongraded program, the opportunity was presented to those teachers who were to start in the program to visit

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[46] Goodlad, op. cit., pp. 79-101.

several schools where the program was in existence. The remaining teachers were oriented to the nongraded program through in-service study in the school.

Experience of the teachers. During the first school years, a child's experiences in school have been found to affect his attitude toward cooperative behavior and toward learning in school. The administrators who were responsible for the placement of the teachers in the nongraded program carefully selected those teachers who had an understanding of child growth and development. Not only was it important for the teacher to have technical competence, but he must be a stable person in order to qualify as a satisfactory primary teacher. Since the instructional program was to meet the needs of the individual child, the teacher should be skilled in identifying the signs of maturity or immaturity in a child's mental, emotional, physical, and social growth pattern.

The quality of education in a school was found to be a result of the skill and creativity that the teacher had demonstrated in the teaching of children in the classroom. Often, this skill and creativity exhibited by teachers in a classroom had been a result of the experience, attitude, and certification status of the teacher. With the exception of one teacher, who had an elementary certificate, the teachers had a collegiate professional certificate and a bachelor's degree. The experience of the teachers varied from one year to forty-two years of teaching in the public schools. Three of the teachers had taught in either a one-room school or in a two-room school. This was considered to be valuable

experience in the adaptation of these teachers to the nongraded situation.

Utilization of teachers. When the placement of teachers became imminent, teacher preparation and experience played a major role in the assignment of a teacher to a particular level. Those teachers who were adept in experimentation and in challenging pupils were considered for the upper levels in the organizational plan. Those who were known to be more patient in working with individual problems were placed with the less mature or slower achievers. Often the administrator, after consultation with a teacher, placed a teacher on a level where he felt more comfortable or competent. Frequently, if a teacher had taught on a second year level in a graded school, he was assigned to a comparable level in the nongraded structure. Several of the teachers requested that they be allowed to advance with their children into the next higher level in school. These teachers returned to the first year levels as the children progressed into their third year school experiences.

Experienced third grade teachers in the graded school were assigned to third year levels in the nongraded classrooms. However, these teachers needed to have competence in teaching second year material as well as third year subject areas since a few of the children in their third year of continuous growth were achieving on the last level of the second year when they began their third year of school. Also, these teachers needed to be able to challenge those pupils who were achieving beyond the traditional third grade level at the end of their third year.

These pupils were introduced to fourth grade subject areas at the appropriate time in their sequential growth. The opportunity for advancement by the pupils was provided at any stage of their individual development if the need became apparent to the teacher.

In striving to place the teacher in a situation where he would be most productive in his teaching endeavors, the administrator was alert to the problems that the teacher might be facing and was ready to give constant encouragement, help, and praise. In any elementary organization, it was felt that the teacher held the key to effective and efficient learning.

SOCIO-ECONOMIC STATUS OF THE PUPILS

The writer used the information that was found in the pupils' cumulative folders regarding the parents' education to assist her in identifying the socio-economic status of the pupils. It was found that sixty-four children had completed three years in the nongraded program in Crestwood School at the end of its three years in operation. The parents of these pupils were found to have the following educational background:

Education	Mother	Father	Total	Percent
Elementary	5	1	6	4.7
High School	35	20	55	42.9
College	28	39	67	52.4

Fifty-six pupils had completed three years in the graded structure of Crestwood School during their second, third, and fourth years. The

educational background of the parents of these children was found to be:

Education	Mother	Father	Total	Percent
Elementary	1	1	2	1.8
High School	28	21	49	43.7
College	27	34	61	54.7

As a result of this information, the writer had assumed the socio-economic status of the pupils to be average or above average as to opportunities and experiences that were provided in the home environment. Furthermore, through personal contact and conferences, the parents were found to be interested and understanding in the progress and development of their children in the educational program.

SUMMARY

It became evident to the writer that the administrative structure of the school should be consistent with the function of the school which was conceived to be the promotion of the optimal development of each individual in the school.

Both the graded and nongraded plans of organization were interpreted to mean a vertical pattern of organization which moved children upward from a point of admission to a point of departure.

As the programs developed in Crestwood School, it was found essential that the teachers responsible for the progression of pupils should be aware of the gross individual differences among learners. Therefore, an adjusting of the instructional program to the individual

child became a necessary technique in the teaching methods employed by teachers. As in any school program, the form and substance of education was dependent upon the human energy and ingenuity of the teachers responsible for the educational growth of the pupils.

In the administration of the nongraded program, it was considered to be imperative that there be planned flexibility in the grouping of the children so as to assure maximum pupil growth. Consideration for both pupil welfare and optimum teacher effectiveness was believed to be essential to the success of the experimental program. As the pupils progressed from one stage of growth to another, evalnative techniques had to be devised so that each pupil's progress could be identified readily.

Essential to the success of the nongraded plan of organization was increased parental understanding of the school, its organizations, its purposes, and its problems. By providing information to the parents on the intentions of a school to change its organizational plan, the school staff paved the way for acceptance of the plan and strengthened home-school relations.

Frequently, in the graded school, the spread of differences among children was not identified in its attempt to master all of the material prescribed for a specific year. By abolishing grade lines in the nongraded classrooms, teachers placed more emphasis on the identification and provision for individuality in their daily work. By working together on a common school endeavor, teachers developed a sense of

shared accomplishment and united purpose.

As the nongraded program became a reality, it was apparent to the staff of the school that the effectiveness of the program was dependent on the actual progress of the students. When children were organized for learning, the key person in the program was the teacher. The viewpoint of the administrative staff was that a good teacher would find ways of operating effectively in any setting, but that no setting guaranteed good teaching or pupil learning.

CHAPTER IV

THE MATERIALS USED AND GROUPS STUDIED

One of the objectives of this study was to determine whether there was a significant difference in the achievement of the pupils in the nongraded and graded classrooms. To obtain the comparative data on the pupils in the nongraded and graded groups, the test results and the diagnostic information in the cumulative records were used. It was found that sixty-four of the present third year pupils had completed three years in the nongraded primary in Crestwood School. These pupils, who formed the experimental group in this study, were compared with fifty-six fourth grade pupils who had completed their second, third, and fourth years in the graded classroom in Crestwood School.

TEST MATERIALS AND METHODS USED

The majority of the pupils who were members of the comparative study were given the Metropolitan Tests of Readiness, the Kuhlmann-Anderson Test, and the Scott-Foresman Reading Tests. In addition, the California Test of Mental Maturity was administered to the nongraded children at the end of their first and second years. To determine aptitude and mental maturity of the graded children, the Lorge-Thorndike Intelligence Test was given at the beginning of their fourth year. The Science Research Associates Achievement Series scores were available on the achievement of the nongraded children at the end of their third year

in school and on the graded pupils after they had completed their fourth year.

The testing of the pupils was done in the individual classrooms by the classroom teachers in both the graded and nongraded program. All the fourth grade tests were scored by electronic machine at Science Research Associates. The results were returned to the school and were recorded in the pupil's cumulative folder for future use. The tests that were administered to the children during their first three years in school were scored by the classroom teachers. Although this placed an additional burden on the teachers, it proved to be beneficial in that the results were obtained early enough to aid the teachers and principal in the grouping of the children. The principal obtained clerical assistance for these teachers to alleviate the scoring tasks that were involved.

Metropolitan Test of Readiness, Form R.[47] These tests were devised to measure the traits and achievements of pupils to assist one to predict a child's readiness for formal instruction. Given during the first month of school, the scores on reading readiness, number readiness, and total readiness were interpreted in terms of letter ratings and readiness status in five categories:

Letter Rating	Readiness Status
A	Superior
B	High Normal

[47] Harcourt, Brace & World, Inc., New York, Copyright, 1949.

C	Average
D	Low Normal
E	Poor Risk

After the readiness tests were given, the results were used to adjust the initial grouping of the beginning students. Previous schooling and chronological age were factors considered in the initial grouping of the children in the nongraded classrooms.

California Test of Mental Maturity, S Form.[48] The purpose of giving this test to the pupils in the nongraded program during their first and second years in school was to determine the general level of maturity in reference to their mental age. Since the nongraded program was based on the appropriate grouping of pupils for instruction, the consensus of the staff was that this test was more useful than a test that measured a pupil's rate of growth or I.Q.

Since it was not the practice of the Chesterfield Elementary Schools to administer the California Test of Mental Maturity to their pupils below the seventh year level, this test was not given to the pupils in the graded classrooms.

In the grouping of children, factors other than mental ability, such as chronological age, social and emotional maturity, and the extent to which the child fits into a group, were considered to be important. This test was used to assist the teachers and the principal in deter-

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[48]California Test Bureau, Monterey, California, copyright, 1957.

mining whether a child had reached the proper stage of development to begin additional educational tasks. Although a young child might have a very high I.Q., he might not have reached the mental maturity to complete successfully the sequential educational activities required of him on the next level. The verbal, nonverbal, and total scores of the California Test of Mental Maturity are shown in Table V.

Kuhlmann-Anderson Test, Test B.[49] To establish a measure of total I.Q., this test was administered to the graded and nongraded groups in Crestwood School at the beginning of their second year in school.

This test was used as a basis for comparison of the total mean I.Q. of the two groups in the comparative study. In order to develop judgments and conclusions on the achievement of the pupils, it was essential to have reliable data on the intelligence or ability of these pupils.

The Lorge-Thorndike Intelligence Tests, Form A.[50] Administered to the fourth grade pupils at the beginning of their fourth year in school, the results of the Lorge-Thorndike Tests were indicators of pupil aptitude rather than mental ability. High scores on the nonverbal section were considered to predict aptitude for visualizing and for thinking

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[49]Personnel Press, Inc., Princeton, New Jersey, Copyright, 1952.

[50]Houghton Mifflin Company, New York, Copyright 1954.

TABLE V

I.Q. AND MENTAL MATURITY OF NONGRADED PUPILS, AS MEASURED BY THE CALIFORNIA TEST OF MENTAL MATURITY AT THE END OF THEIR SECOND YEAR IN SCHOOL

Group			Mental Maturity			I.Q.		
	N	C.A.	Verbal M.A.	Non-Verbal M.A.	Total M.A.	Verbal	Non-Verbal	Total
Nongraded	64	7-11	9-1	8-1	9-0	115	111	112

in concrete terms; whereas, a high score on the verbal battery was interpreted to mean aptitude in areas in which language and ideas expressed in words were required.

The results of this test indicated the pupil's aptitude in verbal and nonverbal areas. If the test indicated low reading ability, the teacher tried to determine whether it was due to generally low ability or to a definite deficiency in reading. In the case of a retarded reader, it was considered unwise to make a diagnosis of low mental ability on the basis of an intelligence test which required reading such as the verbal battery of this test. The nonverbal battery used pictorial or numerical items that enabled the teacher to make a fair appraisal of the pupil's mental ability when not influenced by his inability to read test items. The results of these tests are shown in Table VI.

Science Research Associates Achievement Series.[51] Form C was selected and given to the third year pupils on the basis of its new content. It was the purpose of this 1964 edition not only to reflect the changes in curriculum and in typical performance of school children, but to apply the new theories of test development and advanced technology as well.

This battery was given to the nongraded pupils at the end of their third year as a means of measuring the educational achievement of the

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[51] Science Research Associates, Inc., Chicago, Illinois, Copyright, 1964.

TABLE VI

I.Q. AND MENTAL MATURITY OF GRADED PUPILS, AS MEASURED BY THE LORGE-THORNDIKE TEST, AT THE BEGINNING OF THEIR FOURTH YEAR IN SCHOOL

Group			Mental Maturity			I.Q.		
	N	C.A.	Verbal M.A.	Non-Verbal M.A.	Total M.A.	Verbal	Non-Verbal	Total
Graded	56	9-7	9-8	10-0	9-9	101	103	102

pupils. The scores were reported in terms of grade equivalents and percentiles. The purpose of the grade equivalent scores was to furnish a description of pupil performance in terms of educational level. The percentile scores indicated a pupil's standing in comparison with that of others in the nation at the same grade level.

The SRA Achievement Series, 4-6, was given to the graded pupils in the spring of 1965 to obtain information on the pupil's ability to acquire factual knowledge and his ability to apply this knowledge.[52] The scores were reported in terms of grade equivalents and percentiles.

In addition, the scores from the SRA Achievement Series assisted the teachers and the principal in their prediction of the expectancy for each pupil. It was felt that the pupil should not be classified a slow learner unless he had received a low I.Q. rating on both batteries. The writer used the results of these tests to compare the performances of the pupils in the nongraded and graded classrooms.

GROUPS USED

The writer selected those pupils who had been enrolled in Crestwood Elementary School for three years in both the graded and nongraded structures of the school. In a comparative study of the achievement of pupils in a specific situation, it was necessary that the nature and population of the groups be determined, that the data on the achieve-

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[52]Science Research Associates, Inc., Chicago, Illinois, Copyright, 1961.

ment of the pupils be compiled, that the extent of pupil turnover and transfer be examined, and that the readiness of the children in each group to perform educational tasks be identified by the writer.

Graded group. The writer found that fifty-six of the one hundred eight pupils who were assigned to fourth grade classrooms in the 1964-65 session had completed three consecutive years in Crestwood School. The pupil turnover and transfer of the graded group was computed to be approximately fifty-two per cent over a period of three years, due to administrative change or parent transfer. These pupils had completed their second, third, and fourth years in this school under a graded plan of organization.

Because of various reasons, only forty-seven of these pupils had readiness scores recorded in their cumulative folders. The writer had access to fifty-one raw scores on the Kuhlmann-Anderson Test which measured the total I.Q. of the pupils. Fifty-six Lorge-Thorndike scores were available to the writer for the graded group, but only fifty-one scores were available from the Science Research Associates Achievement Series which measured the achievement of the pupils at the end of their four years in school. Sixteen of these children had attended kindergarten before entering school.

Nongraded group. There were one hundred thirteen pupils in the four third year classrooms, but only sixty-four had completed the three years in the nongraded program in Crestwood School. In the first year of

operation, Crestwood School had an enrollment of one hundred five pupils in the three nongraded classrooms. Eleven of the sixty-four nongraded pupils had experienced pre-school kindergarten.

Information was obtained on the intellectual maturity level of the nongraded pupils from the results of the California Test of Mental Maturity. An indication of their level of achievement in the basic subject matter areas for three years was revealed from the evidence found in the results of the SRA Achievement Series, Form C.

SUMMARY

The writer found that sufficient test data were available on the achievement and ability of the pupils in the graded and nongraded groups to justify a comparative study of the two groups. The transient nature of the community in which the pupils lived had resulted in approximately the same number of pupils in the graded and nongraded groups having spent three years in Crestwood School.

Since an objective of this study was to determine whether there was a significant difference in the achievement of pupils in a nongraded or graded plan of organization, a quantitative analysis of the achievement data was needed before conclusions could be reached on the efficiency status of the two plans of organization.

CHAPTER V

ANALYSIS OF FINDINGS

The findings of the study on the achievement of pupils in the nongraded and graded plans of organization in Crestwood Elementary School were analyzed in terms of (1) the readiness status of the pupils, (2) the total mean I.Q. of the two groups, (3) the significant differences in achievement in terms of grade equivalent scores as statistically treated using the t-ratio, (4) the significant differences in achievement in terms of percentile scores by the use of the Chi square test, and (5) the level status of the nongraded pupils at the end of the 1962-63, 1963-64, and the 1964-65 school sessions.

TECHNIQUE

The group consisted of fifty-six graded pupils and sixty-four nongraded pupils who had been enrolled in Crestwood Elementary School for three consecutive years.

The readiness status of the pupils was determined by the Metropolitan Tests of Readiness which were administered to the pupils and scored by the classroom teachers in the first month of the pupils' first year in school. The nongraded group was given the readiness tests at Crestwood School. The writer obtained the readiness data on the graded group from their cumulative folders.

The total mean I.Q. was computed from the scores of the Kuhlmann-

Anderson Test which was administered by the classroom teachers to the non-graded group during the first week of the 1963-64 school session. The graded children were given the test during the first week of the 1962-63 session. Both groups were in their second year of school when the test was administered to them.

To determine whether there was a significant difference in the achievement of pupils in the nongraded and graded classrooms, the t-ratio was computed using the one hundred fifteen raw scores on the SRA verbal, nonverbal, and total grade equivalent scores. A further analysis of the SRA Achievement Test results in terms of percentile scores was made through the use of the test of independence, or Chi square test.

The educational status of the children in the nongraded classrooms was determined with reference to classroom performance from the cumulative folders as recorded at the end of the 1962-63, 1963-64, and 1964-65 school sessions.

READINESS STATUS

Arithmetic means[53] were calculated for the verbal, nonverbal, and total readiness as revealed by the Metropolitan Tests of Readiness scores. Each letter readiness score was converted to a numerical equivalent before the mean was computed. Table VII revealed that the forty-seven children in the graded classrooms had a readiness status of B, or a high normal

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[53] The mean formula is $N = \frac{\Sigma X}{N}$

TABLE VII

MEAN READINESS AND MEAN I.Q. FOR
GRADED AND NONGRADED PUPILS

Group	Readiness Status*					I.Q. Status**				
	N	C.A.	Verbal	Non-Verbal	Total	N	C.A.	M.A.	Total I.Q.	Range
Graded	47	6-6	B	B	B	51	7-4	7-11	107	74-129
Nongraded	63	6-5	C	C	C	64	7-5	7-7	102	84-117

*Readiness status was determined by the Metropolitan Tests of Readiness, administered at the beginning of the first year.

**I.Q. status was determined by the Kuhlmann-Anderson Test, administered at the beginning of the second year.

rating; whereas, the sixty-three nongraded children had a mean readiness rating of C, or an average readiness status. This information revealed that the mean readiness was higher for the children in the graded classrooms than for the children in the nongraded situation in all categories.

I.Q. STATUS

Also, Table VII revealed that the total mean I.Q., as measured by the Kuhlmann-Anderson Test, was found to be 107 for the pupils in the graded classrooms and 102 for the children assigned to the nongraded classrooms. The intelligence quotient scores ranged from 74-129 for the graded pupils and from 84-117 for the nongraded children.

ACHIEVEMENT RESULTS

To determine whether there was a significant difference in the mean performance of the two groups at the end of the study on the SRA Achievement Series, the t-ratio was calculated. To test the differences between the two groups, computations were necessary for the arithmetic mean, the standard deviation[54] or the variability among the distribution of scores, the standard error of the mean,[55] the standard error of the differences of the mean,[56] and the t-ratio[57] which tested whether the

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[54]The formula for finding the standard deviation is: $\sigma = \frac{\sum N^2}{\sqrt{N}}$.

[55]The formula for finding the standard error of the mean is: $\sigma_m = \frac{\sigma}{\sqrt{N - 1}}$

differences were significantly different from zero. In Table VIII, it was revealed that the t-ratio was 3.73 for verbal performance, 9.06 for nonverbal achievement, and 6.14 for total performance on the SRA Achievement Series. The t-ratio was significant at the .01 level of confidence for the three categories of achievement. In other words, the graded group scored significantly better than the nongraded group in all instances. The null hypothesis was rejected, and it can be said that differential treatment of the two groups produced significant differences in performance.

The results of the t-scores had indicated that there were significant differences in the achievement of the two groups. At this point, it should be qualified that the mean chronological age of the graded pupils when tested was eleven years, one month; whereas, the mean chronological age of the nongraded group at the time that the SRA Achievement Tests were given was ten years of age. The graded group was more than a year older than the nongraded group.

The results of Chi square, $X^2 = \frac{\sum(O - E)^2}{E}$, were used to determine the significant differences between the achievement of the pupils in the graded and nongraded classrooms in terms of percentile scores. The writer was concerned with the observed frequencies of the two groups

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[56] The formula for finding the standard error of the differences of the mean is: $\sigma_{diff} = \sqrt{\sigma_{m_1}^2 + \sigma_{m_2}^2}$.

[57] The formula for finding the t-ratio is: $t = \frac{M_1 - M_2}{\sigma_{diff}}$.

TABLE VIII

GRADE EQUIVALENT MEAN ACHIEVEMENT OF GRADED AND NONGRADED GROUPS AS DETERMINED BY THE SRA ACHIEVEMENT TESTS

Test	Nongraded Mean	Graded Mean	t*	Signif.
Verbal	4.93 (1.06)	5.83 (1.48)	3.73	S
Nonverbal	4.37 (.71)	5.82 (.953)	9.06	S
Total	4.61 (.917)	5.82 (1.14)	6.14	S

*The data used in the calculation of the t-ratio are:

Nongraded Group		Graded Group
Verbal		Verbal
N = 64		N = 51
M = 4.93		M = 5.83
σ = 1.06	σ_{diff} = .241	σ = 1.48
σ_{m_2} = .133	diff = .90	σ_{m_1} = .209
Nonverbal		Nonverbal
N = 64		N = 51
M = 4.37		M = 5.82
σ = .71	σ_{diff} = .160	σ = .953
σ_{m_2} = .088	diff = 1.45	σ_{m_1} = .135
Total		Total
N = 64		N = 51
M = 4.61	σ_{diff} = .197	M = 5.82
σ = .917	diff = 1.21	σ = 1.14
σ_{m_2} = .114		σ_{m_1} = .161

above the 75th percentile and those below the 75th percentile categories.

On the verbal test, Table IX revealed that twenty-four of the fifty-one pupils in the graded classrooms were above the 75th percentile unit. The other twenty-seven were below the 75th percentile category. Among the nongraded pupils, thirty-nine of the sixty-four pupils ranked above the 75th percentile, and twenty-five were found to be below the 75th percentile. These differences were not significant.

The results of the nonverbal tests shown in Table X revealed that twenty-five of the fifty-one graded pupils ranked above the 75th percentile; whereas, the other twenty-six were below the 75th percentile. In the nongraded group, thirty-four of the sixty-four children were found to be above the 75th percentile, and thirty were below the 75th percentile. These differences were not significant.

In testing for the significance of total differences, Table XI revealed that twenty-five of the fifty-one graded children ranked above the 75th percentile, and the other twenty-six were below the 75th percentile. On this test, thirty-six of the nongraded children ranked above the 75th percentile, and twenty-eight were below the 75th percentile. The differences were not significant.

It was assumed that the instructional methods for the two groups were the same. By combining the two samples, an estimate of the true frequencies was considered to be more reliable than the frequencies from one sample alone. The expected frequencies for the children in the two groups were computed and are shown in Tables IX, X, and XI. The values

TABLE IX

TESTING THE SIGNIFICANCE OF VERBAL DIFFERENCES BETWEEN THE NONGRADED AND GRADED GROUPS BY CHI SQUARE

	Above 75th Percentile	Below 75th Percentile	Total
Graded	24 (27.9)	27 (23.1)	51
Nongraded	39 (35.1)	25 (28.9)	64
Total	63	52	115

O	E	O - E	$(O - E)^2$	$\frac{(O - E)^2}{E}$
24	27.9	3.9	15.21	.545
27	23.1	-3.9	15.21	.658
39	35.1	3.9	15.21	.433
25	28.9	-3.9	15.21	.526
				$X^2 = 2.162$

TABLE X

TESTING THE SIGNIFICANCE OF NONVERBAL DIFFERENCES BETWEEN THE NONGRADED AND GRADED GROUPS BY CHI SQUARE

	Above 75th Percentile	Below 75th Percentile	Total
Graded	25 (26.2)	26 (24.8)	51
Nongraded	34 (32.8)	30 (31.2)	64
Total	59	56	115

O	E	O - E	$(O - E)^2$	$\frac{(O - E)^2}{E}$
25	26.8	1.2	1.44	.058
26	24.8	-1.2	1.44	.055
34	32.8	1.2	1.44	.044
30	31.2	-1.2	1.44	.046
				$\chi^2 = .203$

TABLE XI

TESTING THE SIGNIFICANCE OF TOTAL DIFFERENCES
BETWEEN THE NONGRADED AND GRADED GROUPS
BY CHI SQUARE

	Above 75th Percentile	Below 75th Percentile	Total
Graded	25 (27.05)	26 (23.95)	51
Nongraded	36 (33.95)	28 (30.05)	64
Total	61	54	115

O	E	O - E	$(O - E)^2$	$\frac{(O - E)^2}{E}$
25	27.05	-2.05	4.20	.155
26	23.95	2.05	4.20	.175
36	33.95	2.05	4.20	.124
28	30.05	-2.05	4.20	.139
				$X^2 = .593$

of Chi square were found to be 2.162 for the verbal battery, .203 for the nonverbal tests, and .993 for the total achievement scores. On the basis of this information, it was concluded that the groups did not differ significantly in achievement at the .01 level of confidence.

LEVEL STATUS OF NONGRADED GROUP

Many of the children who entered Crestwood Elementary School in September 1962 had shown signs of immaturity. Only thirty of the sixty-four pupils in the nongraded group had completed the four levels of expected first year curriculum requirements. Twenty-nine of the pupils had completed three levels, and eight had completed two of the four levels. The evidence on the level status of the nongraded pupils is shown in Table XII.

At the end of the 1963-64 school session, thirty-nine of the sixty-four pupils had completed the work that was expected for the first two years of school; whereas, twenty-five had finished the first five levels. It was revealed that nine of the thirty-four children who had not completed the required material for the first year had matured sufficiently to complete all levels of the second year. The eight who had completed two levels during the first year had finished three more levels in their second year. This revealed that these children had completed five levels of the required six in two years although they had shown signs of immaturity in their first year. In a graded school, it was believed that these children would have failed at the end of their first year, and that

TABLE XII

EDUCATIONAL STATUS* OF SIXTY-FOUR NONGRADED CHILDREN IN JUNE 1963, JUNE 1964, AND JUNE 1965

Level	1962-63		1963-64		1964-65	
	N**	%	N	%	N	%
1						
2	8	12.5				
3	26	40.6				
4	30	46.9				
5			25	39.1		
6			39	60.9	1	1.6
7					14	21.8
8					49	76.6
Total	64	100.0	64	100.0	64	100.0

*Educational status has meant the level completed at the end of each school session.

**N has meant the number of children who have completed a specific level.

they would have begun the second year material at the beginning of their third year in school.

Forty-nine of the sixty-four nongraded pupils completed eight levels in three years, fourteen completed seven levels, and one had not mastered the third year material at the end of the 1964-65 session. It was seen that ten of the twenty-five children who had completed five levels at the end of the 1963-64 session had been able to complete all of the levels required in three years. Each year there was evidence of an increased number of children who had matured sufficiently to achieve on a higher level than might have been expected in a graded situation. Thirty of the forty-nine children who had completed eight levels had advanced to fourth grade subject areas. The fourteen pupils who had finished seven levels were achieving on level eight and would be ready to advance to fourth year material at the completion of this level. In reality, only one child of the sixty-four in the nongraded group would need four years to do three years' work.

SUMMARY

The analysis revealed that the mean readiness status was higher for the children in the graded classrooms than for the pupils in the nongraded program when the children entered school. The total mean I.Q. was not found to be significantly different for the two groups since both the nongraded and graded children were found to be in the average range of ability. The t-ratio revealed that achievement test scores were

significantly higher for the children in the graded classrooms (at .01 level). The results of the Chi square test, however, indicated that the proportion of pupils above the 75th percentile did not differ significantly in achievement at the .01 level of confidence. In the analysis of the classroom progress of the nongraded pupils, sixty-three of the sixty-four pupils had progressed to a fourth grade status. The study revealed that the chronological ages of the children in the nongraded and graded classrooms favored the graded group.

CHAPTER VI

THE INQUIRY RESULTS

The writer was interested in learning the number of school divisions in Virginia which were operating a nongraded program in their schools. Also, she was concerned with the observations which the nongraded teachers had made with regard to the nongraded program in action.

TECHNIQUE

In February of 1965, the writer sent a letter and an inquiry sheet to the school divisions in Virginia stating the purpose of the inquiry and how the responses were to be reported. In the questionnaire, the school divisions were asked the number of schools that were nongraded in their system, the grouping procedures that were used, the type of standardized tests that were given, the instructional areas that were nongraded, the methods that were employed in the selection of teachers for the nongraded classrooms, the relative importance and extent of the orientation programs for the teachers and the parents, the methods that were used for reporting pupil progress, and the evalnation of the programs that were used in their school divisions.

The twelve teachers who were currently teaching in the nongraded program were asked to submit an evaluation of the program to the writer.

SCHOOL DIVISION RESPONSES

In response to the question whichasked whether their schoolswere graded or nongraded, sixteen of thesixty respondents reported thatthey were using the nongraded organization. In the sixteen school systems using the nongraded program, there wereninety-six participating schools. The school division which had the greatest number of nongraded schools was Fairfax County. Table XIII gives the distribution of responses which were received from the sixty school divisions.

The divisions were questioned with regard to the areas of instruction which were nongraded. Thirteen school divisions reported that they were nongraded in all areas of instruction, and three replied that they were nongraded in the reading area.

Generally, the school divisions reported that the teachers in the nongraded classrooms were selected in the same way that any other teacher was chosen. Only two school divisions indicated that the selection of the teacher was by request of the teacher. One school system responded that the hiring of teachers for the nongraded program was done on the basis of training, experience, willingness, and philosophy. Several divisions said that the selection was made by the joint efforts of the principal and the supervisor.

In answer to the question on when and howthe pupils were grouped for instruction, the unanimous response was that ittook place at the time that the pupil's progress indicated a need forre-grouping, and that they were grouped in a way that would meet theeducational growth of the pupil. In the majority of the responses,the teachers remained on the same level from year to year. In someinstances, the teachers

TABLE XIII

RESPONSES OF 60 VIRGINIA STATE SCHOOL DIVISIONS TO INQUIRY ON NONGRADED ELEMENTARY SCHOOL PROGRAM

Response	Number	Per cent
Nongraded program in operation one, two, three, or more years	16	26.7
No nongraded program but planning one for 1965-66	2	3.3
No nongraded program but desire help in becoming nongraded	4	6.7
No nongraded programs past, present, or anticipated	35	58.3
Nongraded program discontinued	1	1.7
Respondent confused nongraded program with ungraded program for retarded	2	3.3
Total	60	100.0

advanced to the next higher level with the pupils.

One school division responded that they had experimented with a nongraded program and had discontinued it, but that their philosophy remained the same since it was their practice to take each child at his own pace through the first three years of school.

All school divisions reported that the nongraded program began in the first year and extended through the third year. The responses showed that some children completed the program in two years, some in four years, but that the majority of the children completed the program in the usual three years.

CRESTWOOD TEACHERS' EVALUATIONS

The twelve teachers who were assigned to the twelve nongraded classrooms submitted an evaluation of the program in June of 1965.

Two of the teachers who were assigned to the first year classrooms had taught at Crestwood School during its three years in operation. One of the teachers assigned to a first year classroom for the 1964-65 session was a beginning teacher. The other teacher had taught for eight years and had experienced a similar situation in another division.

One of the teachers who had helped to orient the program in Crestwood School responded:

> The nongraded primary was a lifesaver for me. I believe that children learn best in a happy and relaxed atmosphere which cannot be obtained in a graded system. Nothing succeeds like success. Each child must have a feeling of success for normal growth. In the graded system, I would try to give lots of praise

> and encouragement to the child in class, and then I would put a failing grade on his report card and defeated my whole program. As soon as this happened, I would see a change in the child's and parents' attitude toward school. Then, instead of seeing progress, the child would retrogress. I have enjoyed teaching children and not subject matter.

The other teacher who had been at Crestwood School for three years commented in this way:

> The nongraded primary benefits the child, the parent, and the teacher. All three are relieved of the pressure of pushing the child beyond his readiness to learn. The fact that the child does not fail and does not repeat material unnecessarily are important factors in the growth of a child.

The beginning teacher in the first year classroom responded by saying that "a child should be evaluated in terms of what he can do and not in terms of what a child sitting across from him can accomplish."

The other first year teacher indicated an understanding of the philosophy of the program when she commented:

> The program enabled each child to progress at his own rate without pressures being exerted to complete a given amount of material in a designated block of time. By giving the mature or exceptional pupil the proper guidance and challenge, there is no set limit to his achievement in the nongraded program. Conversely, the immature child, or slow learner, is allowed time to mature without feeling cramped or without having to repeat material already learned.

Several of the teachers in the second year classrooms felt that the nongraded program should not be thought of as unusual or different in terms of instruction. They observed that in every classroom there were children in various stages of learning. One of the teachers commented on the reality "that many children can do three years' work in three years, but that they cannot do the first year's work in one year."

One of the teachers in the second year classrooms was a beginning

teacher, one had taught at Crestwood for two years, and two had been at Crestwood for three years. Two of the teachers had taught in either a one-room or a two-room school. In commenting, one of the teachers who had taught twenty-three years said:

> The old fashion one-room school reminds me of this type of teaching. Each child has some talent. This program gives him an opportunity to develop it and to feel proud that he is a part of the wonderful world around him.

The teacher who had taught forty-two years in the Virginia public schools said:

> Unless a school has a principal who has a thorough understanding of children and their many problems, I do not believe that the nongraded program could possibly be a success on any level.

She felt that the nongraded program should be limited to the first two years, and that grades should be given instead of checks as a means to stimulate competition among the children. It was her feeling that her experience in a graded school had influenced her thinking on the letter or numerical evaluation of the child. The other second year teacher who had taught for two years at Crestwood School believed that the nongraded system had much to offer each child since it inspired the child to learn for self-satisfaction and not for competitive grades.

Two of the teachers in the third year classrooms had been at Crestwood for three years, one had taught for two years in this school, and one was a beginning teacher. These teachers were teaching the children who had spent three years in the nongraded program.

The teacher who had taught in a two-room school in the early twenties found that the nongraded classroom was a very satisfactory

learning situation for pupils. She observed that the pupils were well prepared in all subject areas and were ready for the next step in their educational development. Many of her children completed the third year work before the end of the second semester and were experiencing fourth year instructional areas. Although she liked the relaxed classroom atmosphere, she was in favor of giving letter grades instead of checks to indicate progress.

The teacher who had been at Crestwood for two years made the observation that the pupils were better prepared within their own level of achievement than the children whom she had taught in the graded classroom the previous year. She believed that the children received a deeper understanding of the subject matter before they progressed to a higher level. In reflecting on the nongraded situation, this teacher felt that the children should be grouped in a way that eliminated the possibility of all low achievers being placed in the same classroom. She felt that the lack of leadership in such a group limited the pupil's vision of progress.

The beginning teacher in the third year classroom learned that "the nongraded program provided that second chance that so many children need." Because of the extensive grouping within a classroom to meet the needs of the child in all areas of the curriculum, she believed that "team teaching and the nongraded program should go hand in hand." According to her, this would be one way to provide for the individual needs and differences of pupils and would assist the teacher in the

achievement of an individualized instructional program.

SUMMARY

The writer found that the majority of the school divisions in Virginia had retained their graded status, but that there was a trend toward further nongrading of the schools in the future. Several of the school divisions indicated that they were interested in the nongraded plan of organization and requested the results of this study.

The teachers in the nongraded classrooms in Crestwood School favored the nongraded plan of organization as a means of attaining a more individualized instructional program for the child. The writer believed that the philosophy and sensitivity of the people effecting the instructional program in a school would improve the effectiveness of any plan of organization.

CHAPTER VII

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

It was the purpose of this study to compare the pupils in the graded plan of organization with the pupils in the nongraded plan of organization with reference to their ability and achievement.

SUMMARY

In the comparative study of the pupils in the graded and nongraded classrooms in Crestwood School in Chesterfield County, consideration was given to (1) the pre-school education of the children, (2) the readiness status of the two groups when they entered school, (3) the socio-economic status of the pupils, (4) the organizational structure of Crestwood Elementary School, (5) the methods employed in the selection of the teachers for the graded and nongraded classrooms, (6) the ability status of the pupils, and (7) the achievement test results of the pupils in the graded and nongraded programs at the end of their fourth and third years in school, respectively.

A group of one hundred twenty children, sixty-four in the nongraded classrooms and fifty-six in the graded classrooms in Crestwood Elementary School, constituted the sample. The criteria used were the Metropolitan Tests of Readiness, the Kuhlmann-Anderson Test, and the Science Research Associates Achievement Series.

Data for the study were collected from the children's cumulative folders, inquiry responses from the school divisions, teacher evaluation

responses, and the statistical analysis of the achievement status of the pupils.

Arithmetic means, percentages, t-scores, the Chi square test and recorded pupil progress revealed the results of whether significant differences of achievement occurred when children received differential treatment due to an administrative change in organization.

CONCLUSIONS

The writer found evidence that the socio-economic background and the pre-school education of the pupils were not significantly different for the two groups. Also, the results of the Kuhlmann-Anderson Test were evidence that the intellectual ability of the two groups was average in relation to the national norms. The Metropolitan Tests of Readiness indicated that the readiness status of the pupils in the graded group was higher than the readiness status of the nongraded children. The t-ratio scores revealed that test scores were significantly higher for the children in the graded classrooms at the .01 level of confidence. The results of the Chi square test, however, indicated that the proportion of pupils above the 75th percentile did not differ significantly in achievement at the .01 level of confidence.

There was evidence to show that sixty-three of the sixty-four pupils who had been in the nongraded program for three years had achieved three year's intellectual growth in three years without failing and were ready to begin the fourth grade instructional program in September 1965. This was considered to be significant since it reflected the actual prog-

ress of the children for three years in the nongraded classrooms.

The teacher responses indicated a preference for a plan of organization which provided for the continuous and sequential growth of the pupils in the primary years. The writer did not observe that the teaching methods were significantly different in the nongraded classrooms from those in the graded classrooms. It was observed that the organization of the classrooms was more flexible in the nongraded classrooms than in the graded classrooms.

The findings of this study implied that (1) the effectiveness of any plan of organization was dependent on the people who carried out the program and not on an administrative change in the organizational structure of the school, (2) high pupil achievement was not limited to any one plan of organization, (3) a comparison of test scores did not always indicate whether a particular plan of organization had resulted in real significant differences in the achievement of the pupils since all of the variables affecting the growth of a child were not reflected in a test score, and (4) the trend toward nongrading was, in reality, the recognition that achievement was attained, not by an administrative change, but by an individualized instructional program which met the needs of children.

RECOMMENDATIONS

First, the findings concerning the achievement of the pupils in the graded and nongraded classrooms revealed a need for an additional

analysis of the achievement of the nongraded group at the end of their fourth year. The information found at that time should be compared with the data used in this study on the graded children to determine whether a specific plan of organization had affected the achievement of pupils. When the value of an organizational plan was judged in terms of pupil performance, the writer believed that the achievement data were more reliable and valid when the SRA Achievement Tests were administered to the children of the same chronological age.

Second, it would be recommended to all school divisions interested in such a program that the nongraded program be adapted to the instructional program of the teachers rather than to the operational structures of the school. Also, all school personnel who have the responsibility of administering the nongraded program should be in full agreement as to the purpose and philosophy of this method of organization. Furthermore, the persons associated with the program should be aware that the nongraded program is not a method of teaching, but that it is an administrative device that provides for the continuous growth of the child.

Third, it is recommended to school personnel who are considering the nongraded program that the evaluation of the program not be limited to standardized test results, since these tests are standardized on the basis of grade-by-grade performance of the pupil, but be based on the classroom performance of the pupils.

Fourth, all elementary schools should strive to attain the goals of the nongraded school, whether it be graded or nongraded, so that the

education of a child can be a continuous and sequential experience.

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VITA

Alice Gates Goodman, the oldest child of Ida Mae Heath and Ordway Benjamin Gates, Sr., was born on January 6, 1919, at Chesterfield Courthouse, Virginia.

She graduated from Chester High School, Chester, Virginia, in June 1936. In September 1936, she entered the College of William and Mary in Virginia, Williamsburg, Virginia, where she majored in mathematics and received a B.S. degree in June 1940.

She taught in Prince George County, Virginia, 1940-41; Warwick County, Virginia, 1942-44; Chicago, Illinois, 1948-50; Yonkers, New York, 1953-57; and Chesterfield County, Virginia, 1960-65. Since September 1962, she has been principal of Crestwood Elementary School, Chesterfield, Virginia.

She began her graduate program at the University of Richmond in the summer of 1961. She is a member of the Euclid Club, a mathematics honor society; and Kappa Delta Pi, an education honor society.

On February 7, 1942, she was married to Ralph Bentley Goodman, Sr., a graduate of Virginia Polytechnic Institute, Blacksburg, Virginia. He is Passenger Traffic Manager with the Chesapeake and Ohio Railway in Richmond, Virginia. They have a son, Ralph Bentley Goodman, Jr., who will enter his junior year at the College of William and Mary in Virginia in September 1965.

The writer and her family are members of Stratford Hills Methodist Church, Richmond, Virginia.