

A STUDY COMPARING THE DEVELOPMENT OF  
45-15 YEAR-ROUND SCHOOL PROGRAMS AND ATTENDANT  
CHANGES IN TWO SELECTED SCHOOL DISTRICTS

by

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## DEDICATION

This dissertation is dedicated to my lovely wife, who has contributed the most to my professional graduate education. My wife, Catherine Gardner Phillips, provided encouragement and financial assistance which made it possible to obtain this college degree.

## TABLE OF CONTENTS

	Page
ACKNOWLEDGEMENTS . . . . .	ii
DEDICATION . . . . .	iii
LIST OF TABLES . . . . .	iv
 Chapter	
1. INTRODUCTION . . . . .	1
NEED FOR THE STUDY . . . . .	2
STATEMENT OF THE PROBLEM . . . . .	4
PURPOSE OF THIS STUDY . . . . .	6
PROCEDURES FOR THIS STUDY . . . . .	6
DELIMITATIONS OF THE STUDY . . . . .	7
DEFINITION OF TERMS . . . . .	8
BASIC ASSUMPTIONS . . . . .	9
ORGANIZATION OF THE STUDY . . . . .	10
2. INTRODUCTION . . . . .	12
REVIEW OF THE LITERATURE AND RESEARCH . . . .	12
NATIONAL SEMINARS . . . . .	21
FEASIBILITY STUDIES . . . . .	23
THE 45-15 YEAR-ROUND SCHOOL PLAN AND BACKGROUND DATA OF THE FRANCIS HOWELL AND THE MORA PUBLIC SCHOOL SYSTEM . . . . .	25
FRANCIS HOWELL DISTRICT . . . . .	26
MORA PUBLIC SCHOOLS . . . . .	30
SUMMARY . . . . .	32

	Page
3. RESEARCH PROCEDURES . . . . .	33
SELECTION OF DISTRICTS . . . . .	34
INSTRUMENTATION . . . . .	34
DATA ANALYSIS AND REPORTING . . . . .	36
4. PROGRAM DESIGN AND CURRICULUM ANALYSIS . . . . .	41
INTRODUCTION . . . . .	41
METHOD OF ANALYSIS . . . . .	42
ANALYSIS OF ORGANIZATIONAL STRUCTURE AND PHILOSOPHICAL POSITION - BECKY DAVID ELEMENTARY SCHOOL . . . . .	43
ANALYSIS OF CURRICULUM DESIGN - BECKY DAVID ELEMENTARY SCHOOL . . . . .	44
LANGUAGE ARTS CURRICULUM . . . . .	45
ARITHMETIC CURRICULUM . . . . .	49
PRIMARY ARITHMETIC CURRICULUM . . . . .	50
INTERMEDIATE ARITHMETIC CURRICULUM . . . . .	52
STUDENT'S SCHEDULES - BECKY DAVID ELEMENTARY SCHOOL . . . . .	55
PROCEDURES FOR REPORTING STUDENT PROGRESS - BECKY DAVID ELEMENTARY SCHOOL . . . . .	56
ANALYSIS OF ORGANIZATIONAL STRUCTURE AND PHILOSOPHICAL POSITION - FAIRVIEW ELEMENTARY SCHOOL . . . . .	59
READING CURRICULUM DESIGN . . . . .	60
PRIMARY ARITHMETIC CURRICULUM . . . . .	67
INTERMEDIATE ARITHMETIC CURRICULUM . . . . .	71

	Page
STUDENT'S SCHEDULE - FAIRVIEW ELEMENTARY SCHOOL . . . . .	80
PROCEDURE FOR REPORTING STUDENT PROGRESS - FAIRVIEW ELEMENTARY SCHOOL . . . . .	80
SUMMARY - BECKY DAVID ELEMENTARY SCHOOL . .	83
SUMMARY - FAIRVIEW ELEMENTARY SCHOOL . . . .	85
5. OTHER IMPLICATIONS . . . . .	87
STAFF EXPENDITURES - BECKY DAVID ELEMENTARY SCHOOL . . . . .	87
EXPENDITURES FOR CURRICULUM GUIDES, INSTRUCTIONAL EQUIPMENT AND MATERIALS - BECKY DAVID ELEMENTARY . . . . .	88
DISTRICT BUDGET - FRANCIS HOWELL SCHOOL DISTRICT . . . . .	90
ATTENDANCE - BECKY DAVID ELEMENTARY . . . .	92
ATTITUDES OF PARENTS - BECKY DAVID ELEMENTARY . . . . .	92
TEACHER QUESTIONNAIRE - BECKY DAVID ELEMENTARY SCHOOL . . . . .	97
STAFF EXPENDITURES - FAIRVIEW ELEMENTARY . .	98
EXPENDITURES FOR INSTRUCTIONAL MATERIALS - FAIRVIEW ELEMENTARY. . . . .	99
EXPENDITURES FOR INSTRUCTIONAL EQUIPMENT - FAIRVIEW ELEMENTARY. . . . .	101
DISTRICT BUDGET - MORA PUBLIC SCHOOLS . . .	104
ATTENDANCE - MORA PUBLIC SCHOOLS . . . . .	104
PARENT QUESTIONNAIRE - FAIRVIEW ELEMENTARY SCHOOL . . . . .	108
STUDENT QUESTIONNAIRE - FAIRVIEW ELEMENTARY SCHOOL . . . . .	109

	Page
TEACHER QUESTIONNAIRE - FAIRVIEW ELEMENTARY SCHOOL . . . . .	110
SUMMARY . . . . .	111
6. SUMMARY, FINDINGS, CONCLUSIONS AND IMPLICATIONS . . . . .	112
SUMMARY . . . . .	112
FINDINGS - BECKY DAVID ELEMENTARY . . . . .	113
FINDINGS - FAIRVIEW ELEMENTARY . . . . .	117
DISCUSSION OF FINDINGS . . . . .	121
CONCLUSIONS . . . . .	122
IMPLICATIONS . . . . .	124
REFERENCES . . . . .	125
APPENDIXES	
A. Data Collection Instrument . . . . .	129
B. Data and Material to be Analyzed . . . . .	132
C. Language Arts Reporting Instrument - Becky David Elementary . . . . .	135
D. Arithmetic Reporting Instrument - Becky David Elementary . . . . .	137
E. Primary Reading Report Card - Fairview Elementary School . . . . .	140
F. Primary Arithmetic Report Card - Fairview Elementary School . . . . .	142
G. Intermediate Level Reading Report Card - Fairview Elementary School . . . . .	144
H. Intermediate Arithmetic Report Card - Fairview Elementary School . . . . .	146

	Page
I. Questionnaire For Parents - Becky David Elementary School - September, 1969 . . .	148
J. Second Questionnaire For Parents - Summary - March, 1970 . . . . .	151
K. Third Questionnaire For Parents - Summary - May, 1971 . . . . .	154
L. Questionnaire For Teachers - Summary - October, 1969 . . . . .	157
M. Survey of Parental Attitudes Toward the 45-15 Plan in the Mora Public Schools . .	160
N. Student Questionnaire - Fairview Elementary School . . . . .	163
O. Survey of Teacher Attitudes Toward the 45-15 Plan in the Mora Public Schools . .	165
VITA . . . . .	168



## LIST OF TABLES

Table	Page
1. Purpose of Year-Round Projects as Identified by School Districts . . . . .	19
2. Degree of Curriculum Change Reported by School Districts Operating Year-Round Programs . . .	20
3. National Seminars on Year-Round Education . . .	24
4. Student Increase in the Francis Howell School District (1962-1968) . . . . .	27
5. Assessed Valuation - Francis Howell . . . . .	29
6. Assessed Valuation - Mora Public Schools . . .	31
7. Language Arts and Arithmetic Student's Schedule Becky David Elementary School . . . . .	57
8. Sessions and Units of Work - Fairview Elementary School - First Grade. . . . .	70
9. Sessions and Units of Work - Fairview Elementary School - Second Grade . . . . .	72
10. Sessions and Units of Work - Fairview Elementary School - Third Grade . . . . .	73
11. Summary of the Contents of Arithmetic For Grade Four - Fairview Elementary School . . .	75
12. Summary of the Contents of Arithmetic For Grade Five - Fairview Elementary School . . .	77
13. Summary of the Contents of Arithmetic For Grade Six - Fairview Elementary School. . . .	79
14. Reading and Arithmetic Schedule - Fairview Elementary School . . . . .	81
15. Positions Included in Determining Pupil Teacher Ratio at Becky David Elementary School. . . .	89
16. School Budget of the Francis Howell School District three Years Prior to the Implementation of the Year-Round Schedule and One Year	

Table	Page
Preceding the Implementation of the Year-Round Schedule . . . . .	91
17. Student Attendance - Becky David Elementary School . . . . .	93
18. Positions Included in Determining Pupil Teacher Ratio at Fairview Elementary School . . . . .	100
19. Expenditures For Instructional Materials For Fairview Elementary . . . . .	102
20. Expenditures For Instructional Equipment - Fairview Elementary School. . . . .	103
21. Financial Expenditures For Curriculum Development - Fairview Elementary School. . . . .	105
22. School Budget of the Mora Public Schools Prior to the Implementation of the Year-Round Schedule and One Year Preceding The Implementation of the Year-Round Schedule . . . . .	106
23. Student Attendance - Fairview Elementary school	107

## Chapter 1

### INTRODUCTION

The demand for relevance of education for pupils accompanied by increasing pressures for accountability on the part of educators has moved many school districts to study the concept of a year-round school. The most popular contemporary calendar of year-round school enthusiasts and promoters is the 45-15 scheduling plan. Administrators view a year-round schedule as a means to restructure the curriculum; taxpayers see it as better utilization of tax supported buildings, and teachers look to it as providing potential for extended employment opportunity and continuous learning for students. The 45-15 year-round plan offers students opportunity for enrichment, remediation, and acceleration as well as providing opportunities for more effective utilization of professional staff.

Year-round education programs in America can be traced to the first half of the nineteenth century. Since then, many school districts have undertaken feasibility studies to determine whether it would be practical or desirable for them to schedule some form of a year-round school program. Since 1965, approximately two hundred feasibility studies had been completed, while only a few school districts have actually inaugurated a year-round schedule (Leffel and Parks, 1972). Obviously, there is great need for accurate research which could be of value to school districts considering

year-round scheduling possibilities.

### NEED FOR THE STUDY

Recent technological and societal trends in the United States have changed drastically the demands which are being placed upon local school districts. The great knowledge explosion, the spiraling costs of education, overcrowded classrooms, the accountability movement, increased population mobility, the emergence of urban educational problems and more leisure time for travel and recreation have forced major changes in our educational system. Dr. Ernest H. Mueller, Assistant to the Superintendent for Administration in Prince William County, Virginia believes the overriding issue of change will produce a flexible educational organization with sufficient vitality to meet the present needs of society and with the capacity for perception and alterability necessary to accommodate society's future needs (Mueller, 1972).

In writing about change, Matthew B. Miles stated

. . . it is time for us to recognize that successful efforts at planned change must take as a primary target the improvement of organization health -- the school system's ability not only to function effectively but to develop and grow into a more fully functioning system (Miles, 1965:11).

In order to address the problem identified by Miles, a year-round educational program must consider both the societal and educational implications of child growth and development. Both of these factors should be a part of the planned change of all year-round school programs. When both of these factors are considered, a year-round school has the potential to produce the flexible educational

organization with sufficient vitality to meet the present (and future) needs of society, spoken of by Dr. Mueller.

In order for the public schools to meet the responsibilities which they have been assigned, each phase of the school's program must be under constant review and reevaluation. As this review and reevaluation occurs, there is predictable impact upon curriculum development, as well as other components included in the total operation of the public schools. The specific types of change will differ in each of the eighteen thousand school districts in existence today in the United States. Educators attribute this need for review and reevaluation to several factors. According to Dr. George I. Thomas, Educational Consultant and former staff member of the New York State Department of Education,

. . . the total body of knowledge accumulated since the dawn of recorded history until 1759 had doubled by 1900. Between 1900 and 1950 it redoubled. It doubled again between 1950 and 1960, and since 1960 has doubled once more (Utica Community School District, 1970:7).

How then can the public schools meet the overwhelming demands brought about by change? Many educators, school administrators, taxpayers and business leaders believe that one response is the use of a year-round school program accompanied by significant modification of program and curriculum design.

The ". . . proponents of year-round school view the longer school year as a national educational imperative and ask whether our nation can afford the luxury of long idle summers" (Utica Community School District, 1970:7). George Jensen, Chairman of the National School Calendar Study committee and President of the National Council

on Year-Round Education, referred to the long summer vacation as a fantastic coffee break (U. S. House of Representatives, 1972). When the average school year in the United States was compared to the average school year of eighteen major countries, it was discovered that the length of the school year of the United States was comparatively short. Given comparative data regarding the length of the school year in other countries; the shift from a rural to an urban society; the tremendous increase in basic knowledge; the decrease in support of capital expenditures for construction and other financial resources available for education; there appears to be reasonable evidence to support the establishment of year-round school programs in the United States as a partial solution to some of these problems.

Previous studies have reported a variety of research endeavors conducted in the area of year-round education including: Planning (Leffel, 1973), Achievement (Craigmile and Humes, 1970), Evaluation (Smith, 1971) and Implications (Glinke, 1973). A review of literature did not however, produce any longitudinal studies focused on multiple aspects of programs in schools which had successfully operated year-round programs. Given the increasing variety and volume of concerns, such a study focusing on various dimensions of successfully operating programs appeared to be appropriate.

#### STATEMENT OF THE PROBLEM

The problem was to identify and describe the changes in reading and arithmetic design, staffing patterns, financing, student attend-

ance, scheduling, reporting methods, and attitudes of parents, teachers and students which occurred in two selected elementary schools as a result of their implementation of a 45-15 year-round educational program. The investigation was undertaken to determine:

- (1) What changes, if any, occurred in reading and arithmetic program and curriculum design following the decision to place schools on a 45-15 year-round calendar.
- (2) What changes, if any, were noted in staffing patterns when the school calendar was changed.
- (3) What changes, if any, were noted in expenditures for staffing, in-service, curriculum development, instructional equipment, instructional materials, total budget and per pupil costs.
- (4) What modifications, if any, were noted in teacher/pupil ratios, following the change in school calendar.
- (5) What changes, if any, occurred in the financing of operational programs following implementation of the 45-15 calendar.
- (6) How scheduling within the school day was modified for reading and arithmetic as a result of the 45-15 calendar.
- (7) How attendance of students changed as a result of implementation of the 45-15 calendar.
- (8) How reporting methods to parents changed as a result of the implementation of the 45-15 calendar.
- (9) How parent, student and teacher attitudes changed as a result of implementation of the 45-15 calendar.

## PURPOSE OF THIS STUDY

School personnel are typically concerned about the impact of any type of change in school programming on all facets of the educational system. Several studies have been conducted relative to the financial impact, program design and scheduling practices in year-round school operations. Very little effort has been devoted to the analysis of curriculum change within these schools and related factors such as staffing, attendance, reporting methods and parent/student attitudes. The purpose of this study then, was to investigate the impact of change due to 45-15 year-round scheduling upon these variables.

## PROCEDURES FOR THIS STUDY

The study was conducted using two schools which had operated a year-round program using 45-15 scheduling for more than two years. At the time this investigation was undertaken, only four schools in the United States could be identified which met these criteria. They were: Becky David Elementary School, St. Charles County, Missouri; Fairview Elementary School, Mora, Minnesota; Valley View Elementary School, Romeoville, Illinois and three schools located in Prince William County, Virginia. After contacting representatives of the four school districts, it was determined that only two schools, Fairview and Becky David, could provide the information necessary to complete the study as outlined.

After receiving commitments from representatives of the two



school districts, an instrument was developed for the gathering of data which would permit the investigator to complete the study as outlined. The data collection instrument is included as Appendix A, and was designed in such a way as to permit the reporting and analysis of the components indicated below in the two schools studied:

- (1) Curriculum design of reading and arithmetic.
- (2) Staffing patterns utilized in the schools.
- (3) Students' schedules in reading and arithmetic.
- (4) Expenditures for staff, in-service, curriculum development, instructional equipment, instructional materials, personnel, total budget and per pupil costs.
- (5) Average daily attendance of students in the two schools.
- (6) Attitudes of parents, students and teachers in the communities served by the two schools.

#### DELIMITATIONS OF THIS STUDY

This study was limited to:

- (1) Becky David Elementary School located in St. Charles County, Missouri and Fairview Elementary School located in Mora, Minnesota.
- (2) Grades one through six of the Becky David and Fairview Elementary Schools.
- (3) Data for three years preceding initial implementation of the year-round schedule and continued one year following implementation.
- (4) The curriculum content areas of reading and arithmetic.

- (5) No comparisons between the two districts were attempted.

#### DEFINITION OF TERMS

The following definitions were provided for this study:

- (1) 45-15. A schedule which calls for each student to attend school 45 school days followed by a 15 school day vacation. By staggering the entrance dates for about one-fourth of the students every 15 school days, the first group to enter begins its' vacation the day the fourth group enrolls. Fifteen school days later, when the first group returns, the second group commences its' vacation, and so on throughout the year.
- (2) Achievement. Achievement referred to how well a child had mastered reading and arithmetic based upon those standardized achievement tests used by the Becky David and Fairview Elementary Schools at the time of the study.
- (3) Becky David Elementary School. An elementary school located in St. Charles County, Missouri which operates on a 45-15 year-round schedule.
- (4) Continuous Progress. A curriculum design philosophy which eliminates grade level as a program factor in which the curriculum is organized so that individual students may develop their academic and creative talents as rapidly or as slowly as their abilities permit.
- (5) Francis Howell School District. A school district

located in St. Charles County, Missouri which operates a 45-15 year-round elementary program at Becky David Elementary School.

- (6) Mora Public School System. A school district located in Mora, Minnesota. The system operates Fairview Elementary School on a 45-15 year-round schedule.
- (7) Skills Sheets. Materials developed to provide the teacher with a specific outline of skills to be mastered by children at a particular level or in a particular sequence.

#### BASIC ASSUMPTIONS

The following basic assumptions were made for the purpose of this study:

- (1) That each school included reading and arithmetic as a part of its elementary curriculum and that guides were available to direct teaching and/or learning experiences.
- (2) That the guidelines for instruction in arithmetic and reading could be analyzed using some systematic method for identifying content emphasis, format, supplementary materials utilization and other appropriate components.
- (3) That each school would allot or suggest time blocks or scheduling for the subjects under study.
- (4) That some instrument or mechanism would be utilized for reporting student progress to parents.
- (5) That the participating districts would provide adequate and appropriate information related to staffing, budget-

ing, attendance and achievement over a three year period so that appropriate analysis could be conducted.

- (6) That the two districts would provide information and evaluation data on student, parent and teacher attitudes which could be analyzed to determine the level of support by these groups for the program.

### ORGANIZATION OF THE STUDY

Chapter 1 included an introduction, the need for the study, the problem which was the focus for this study, the purpose, procedures, delimitations, basic assumptions and definition of terms. The results of the investigation were reported in five subsequent chapters.

Chapter 2 includes a review of the literature and research.

Chapter 3 includes a description of the research design, selection of districts and time table for the study.

Chapter 4 includes an analysis of program designs, curriculum designs, organizational structures, philosophical positions, curriculum development description, students' schedules, and analysis of reporting methods used in the schools.

Chapter 5 includes financial information, attendance data and information relating to attitudes of parents, teachers and students in the two schools under study.

Chapter 6 contains the summary, conclusions, discussion, and implications for educational practice and research.

The appendixes contain the following information:

Appendix A -- Data collection instrument.

- Appendix B -- Data and Material to be Analyzed
- Appendix C -- Language Arts Reporting Instrument - Becky David  
Elementary
- Appendix D -- Arithmetic Reporting Instrument - Becky David  
Elementary
- Appendix E -- Primary Reading Report Card - Fairview Elementary  
School
- Appendix F -- Primary Arithmetic Report Card - Fairview  
Elementary School
- Appendix G -- Intermediate Level Reading Report Card - Fairview  
Elementary School
- Appendix H -- Intermediate Arithmetic Report Card - Fairview  
Elementary School
- Appendix I -- Questionnaire For Parents - Becky David Elementary  
September, 1969
- Appendix J -- Second Questionnaire For Parents - Summary -  
March, 1970
- Appendix K -- Third Questionnaire For Parents - Summary -  
May, 1971
- Appendix L -- Questionnaire For Teachers - Summary - October,  
1969
- Appendix M -- Survey of Parental Attitudes Toward the 45-15  
Plan in the Mora Public Schools
- Appendix N -- Student Questionnaire - Fairview Elementary School
- Appendix O -- Survey of Teacher Attitudes Toward the 45-15 Plan  
in the Mora Public Schools

## Chapter 2

### INTRODUCTION

Chapter 2 includes a review of literature and research of year-round education in the United States. The review begins with districts which operated year-round programs prior to 1840 and extends through 1973. The review also includes reports of National Seminars, feasibility studies and background information related to the development of year round programs in St. Charles County, Missouri, and Mora, Minnesota.

### REVIEW OF THE LITERATURE AND RESEARCH

Year-round schools have been in operation in the United States for over a century and a half. Various reports have indicated that several cities operated schools year round as early as 1840. The city of Buffalo, New York, operated its schools on a twelve month schedule, while Baltimore, and Cincinnati operated their schools on an eleven month schedule during the first half of the nineteenth century. New York City also operated its schools on a forty-nine week schedule while the City of Chicago operated its schools on a forty-eight week schedule during the same period. The primary objective of these early year-round schools was to accommodate the numerous non-English speaking immigrants who were moving into the cities.

After 1840 many cities began to shorten their school year. While the cities were doing this, many rural areas were establishing

a longer school year. This procedure continued until the majority of cities and rural areas were operating their schools on virtually the same schedule. During this time, several school districts began to organize summer school programs. Some writers have viewed these summer schools as an early forerunner of the year-round school. The first summer school to be established in the United States was that of The First Church of Boston, Massachusetts in 1865 (Thomas, 1968). These early summer schools were supported mainly by churches and philanthropic societies. The major objective of the early summer schools was to counteract the effects of idleness and the negative influence of the city streets on children of school age (Utica Community School District, 1970). The major subjects which were offered in these summer programs were: basketry, shoemaking, chair-caning, embroidering, millinery, and nursing (Perry, 1910). The curriculum of summer schools changed gradually as programs were taken over by local school boards.

From 1904-1950 there were fourteen year-round programs established in the United States, all of which would later be discontinued (Utica Community School District, 1970). The major reason given for discontinuing these year-round programs was a financial problem. School districts soon discovered that a year-round program would cost more than the traditional one hundred eighty day school year, even after full utilization of the school plant was computed. Several of these school districts were forced to undergo a building program after the decision was made to discontinue their year-round program.

The year-round educational program of Newark, New Jersey, was probably one of the best known programs to be established in

the first half of the twentieth century. The Newark School Board was faced with a tremendous increase in immigrant student enrollment. In an attempt to deal with serious educational deficiencies of these students, the Newark School Board decided to place two schools on a year-round schedule. By 1922, all of Newark's schools were operating on such a schedule. The school year was divided into four equal quarters and all students were required to attend the first three quarters. It was the School Board's opinion that the fourth quarter should be used as a remedial time period and that the immigrants should attend school during this extra quarter also. By attending this extra quarter, the School Board believed that the immigrants would be better able to adjust to their new life in America and acquire the skills necessary to "catch up" with local students. In 1931, the year-round program was terminated by the School Board since, in the Board's opinion, the year-round program did not meet the needs of the immigrant students.

During this same period, year-round schools were reported in operation in Ardmore, Oklahoma; Chattanooga, Tennessee; El Paso, Texas; Eveleth, Minnesota; Gary, Indiana; Mason City, Iowa; Minot, North Dakota; Omaha, Nebraska and Tulsa, Oklahoma (Utica Community School District, 1970). According to reports describing these early programs, there was one weakness common to all districts reporting their operations. This weakness was that educators had designed the schools' curricula so that a child was expected to accomplish one year of academic work between September and May. During the fourth quarter the child was expected to complete an



additional one-third of the next year's work.

In 1928, the City of Aliquippa, Pennsylvania, implemented a year-round plan to help alleviate the serious over-crowded conditions existing in its schools. In order to do this, Aliquippa divided the students into four equal groups. The students were required to attend school for three quarters and then be on vacation for one quarter. By using this type of schedule, the capacity of the buildings were increased by thirty-three percent. The teachers were also allowed to select between a three or a four quarter contract. The Aliquippa Four Quarter Program was terminated in 1938 because of financial reasons. This was the first serious effort and plan which used a modified calendar to reduce overcrowding and avoid building as an alternative to that problem.

Just before World War II, very few districts operated year-round programs, but, as America's involvement in the war became clear, a renewed interest in year-round schools occurred. This interest in year-round schools was particularly evident in large cities, where many school systems were facing serious overcrowded conditions. The four-quarter year-round plan was put into use in many of these cities (Utica Community School District, 1970). It was felt that this plan would best meet the demands of a growing and expanding city in a time when construction was not a viable option.

There was little activity in year-round school program development from 1950-1964. At least eight school districts projected possible utilization of the four quarter plan during this time period. There is, however, no evidence that any of these eight plans

materialized (Utica Community School District, 1970).

Beginning in 1964, a revived interest in year-round schools was gaining momentum. In 1965, the Atlanta, Georgia, School Board decided to conduct a feasibility study and devoted a period of two years to studying the possibility of a year-round program. In 1968, the Atlanta School Board recommended a four-quarter program be established. That four-quarter program is still in operation.

In 1971, the National Educational Association reported over six hundred school districts in the United States were interested in the idea of year-round education (Leffel and Parks, 1972). During the 1972-73 school year there were at least fifty year-round programs in operation. Also, according to Leffel and Parks, approximately two hundred articles concerning year-round education had appeared within the preceding five year period in major publications in the United States.

Thus it is obvious, the year-round educational movement has been gaining momentum over the past decade. A National Council on Year-Round Education was established at the National Seminar on Year-Round Education meeting in San Diego in 1972.

In the spring of 1973, the National Council on Year-Round Education designated Virginia Polytechnic Institute and State University as its national headquarters. This council's main responsibility has been to coordinate the efforts of all educators and school districts which have expressed an interest in year-round education.

School boards continue to seek new and different types of

year-round scheduling possibilities. A vast amount of material has been collected and research conducted on several types and phases of year-round programs throughout the United States. Most of that research has, however, dealt with the specific topics or limited problems related to year-round programs such as:

- . Providing time to teach an increased body of knowledge.
- . Attracting qualified people to the teaching profession.
- . Increasing needed classroom space.
- . Making full utilization of all library materials, audio-visual equipment, textbooks and school buses.
- . Utilizing all school facilities on a year-round schedule.
- . Providing administrators with student scheduling flexibility.
- . Providing the teachers with a higher income.
- . Providing a wider range of vacation possibilities to all involved.
- . Saving money or expending available money more efficiently.

It would appear that year-round schools could have a profound influence upon meeting the needs of local communities because of its unique contributions of activities and interest. The popularity of year-round schools will probably continue to increase due to declining support of education by many local communities and the continued defeat of local bond issues. A Gallup Poll report indicated fifty-nine percent of the citizens of the United States supported the idea of year-round schools. The report also indicated forty-one percent of the population still opposed to the idea were often opposed for vague reasons (Newsweek, July 2, 1973).

In a survey of one hundred forty-seven year-round educational projects, Bruce Campbell (1973) discovered that sixty-eight operating projects listed their main objective as being the improvement of curriculum. In this same study, fifty-eight projects reported their main objective to be a more effective utilization of space. Table 1 illustrates the purposes of year-round educational projects as identified by Campbell in April, 1973. School districts were also asked to indicate in the survey the extent of any curriculum change. Forty-nine projects indicated that there had been a major change in their curriculum as a result of implementation of a year-round schedule. Forty-nine projects did not indicate a degree of change in curriculum as a result of year-round scheduling (Campbell, 1973). Table 2 illustrates the projects and the extent of curriculum change reported by Campbell in his study.

In addition to curriculum revision, a great amount of material has been published in all areas of year-round education. In a review of current literature, dissertation topics and local, state and federal studies, many areas of interest were identified. These areas included curriculum and/or instruction revision, equipment and/or facilities utilization and staff utilization.

The need for accountability has also influenced many school divisions to study the idea of year-round schools. Community leaders have indicated a desire to determine if it would be cost effective for their schools to operate on a longer schedule. The people who are concerned with the accountability movement also want to know what impact such a decision would have upon the academic achievement

Table 1

PURPOSE OF YEAR-ROUND PROJECTS  
AS IDENTIFIED BY SCHOOL DISTRICTS

Purpose	Number	Percent
Space utilization	58	39.46
Curriculum improvement	68	46.26
Reduction in capital outlay	4	02.72
Staff utilization and productivity	2	01.36
Not indicated	15	10.20
Total	147	100.00

(Campbell, 1973)

Table 2

DEGREE OF CURRICULUM CHANGE REPORTED BY SCHOOL DISTRICTS  
OPERATING YEAR-ROUND SCHOOL PROGRAMS

Degree of Change	Number	Percent
Under study	4	03.60
Little or no change	5	04.50
Moderate change	4	03.60
Major change	49	44.15
Not indicated	49	44.15
Total	111	100.00

(Campbell, 1973)

of students. These problems have not yet been sufficiently researched to provide a clear cut answer to the questions.

### NATIONAL SEMINARS

In 1969, the First National Seminar on Year-Round Education was held in Fayetteville, Arkansas. There were approximately seventy-five people in attendance at the First National Seminar. It was decided at that seminar, that there should be an annual seminar held each year. The Second National Seminar on Year-Round Education was held in the Penn Harris Hotel, Harrisburg, Pennsylvania, in April of 1970. There were two hundred fifty people in attendance at this seminar. The seminar was sponsored jointly by the Pennsylvania Department of Education and Clarion State College. In his opening address to the participants, Dr. B. Anton Hess, Deputy Secretary and Commissioner for Basic Education, Pennsylvania Department of Education, pointed out that educational structures are constantly changing. During this changing process, it was Dr. Hess' suggestion that all school divisions should study the concept of the year-round school. Dr. Hess informed those attending the seminar that in President Nixon's address to the members of the United States Congress, in 1969, the President had indicated his belief that the American educational system is in urgent need of reform. This reform, according to many of the speakers at the Second National Seminar, could be achieved through the establishment of year-round schools.

Speakers at the Second National Seminar also emphasized that schools must be accountable to the communities they serve.

It was also pointed out that there were two very important questions which should be considered when studying the feasibility of implementing a year-round schedule. The two points identified were: (1) What will be the sociological effect of this plan upon the local community and, (2) How much will the implementation of this particular plan cost the community? Over the three year period since that meeting, substantial research has been conducted on both of these questions with several school divisions having made arrangements with professional agencies to help determine answers to those two questions.

The Third National Seminar on Year-Round Education was held in March, 1971 at Cocoa Beach, Florida. The Seminar was sponsored by the Florida Department of Education, the Florida Technological University and the Brevard County School System. At this seminar, it was stressed that there were many new educational innovations being introduced in conjunction with year-round school programs. Innovations identified included new teaching methods, school organization, curriculum development, finance, and community relations related to year-round school plans. It was the purpose of the Third National Seminar to inform the American public of many of these new developments in education.

That seminar also revealed the growing interest in year-round education in the United States. The attendance of 360 participants from thirty states provided additional evidence of expanding interest and concern throughout the country. In addition to the participants, there were forty-eight consultants who participated in the seminar, with varying backgrounds including superintendents, teachers, students, parents, and political leaders.



The Fourth National Seminar on Year-Round Education was held at San Diego, California, in February, 1972. The Seminar was sponsored by the Superintendent of Schools of San Diego, California. The growing interest of year-round education was also evident at this seminar.

Over nine hundred consultants, participants and committee members were present during the Fourth National Seminar. A major outcome of the San Diego conference was the organization of a National Council on Year-Round Education.

A fifth National Seminar was held in Virginia Beach, Virginia, on May 8-12, 1973. The seminar was sponsored by the Virginia State Department of Education. Specific emphasis was placed upon community interest at the Fifth National Seminar on Year-Round Education. Table 3 provides summary data on the seminars since their beginning in 1969.

A sixth National Seminar was held recently in Chicago, Illinois, and featured national leaders from government and industry in addition to school people from throughout the United States.

#### FEASIBILITY STUDIES

Several school districts have undertaken major feasibility studies to test year-round schooling as a possible solution to local problems. According to research previously cited, approximately two hundred feasibility studies have been undertaken by local school systems (Leffel and Parks, 1972). Also, thirty-four state departments of education have conducted feasibility studies. According

Table 3

NATIONAL SEMINARS ON  
YEAR-ROUND EDUCATION

SEMINAR	YEAR	LOCATION	ATTENDANCE
First	1969	Fayetteville, Arkansas	75
Second	1970	Harrisburg, Pennsylvania	250
Third	1971	Cocoa Beach, Florida	360
Fourth	1972	San Diego, California	900
Fifth	1973	Virginia Beach, Virginia	700

to a recent survey conducted by Bruce Campbell, Director of Extended School Year Programs for the New Jersey Department of Education, there are over one hundred year-round school programs in feasibility, planning and operation today in the United States (Campbell, 1973). Many school districts which conducted feasibility studies did so at the request of the local governing body. After these feasibility studies were completed, relatively few districts actually implemented a year-round program. One writer has said, ". . . if every district that conducted a feasibility study actually began a pilot program, the entire state of Michigan would probably be operating on a year-round basis by now" (United States Department of Health, Education and Welfare, 1972:341). Interestingly, several school districts did, as a result of their feasibility studies, expand their summer school program, but usually on a voluntary enrollment basis.

#### THE 45-15 YEAR-ROUND SCHOOL PLAN AND BACKGROUND DATA OF THE FRANCIS HOWELL SCHOOL DISTRICT AND THE MORA PUBLIC SCHOOL SYSTEM

The 45-15 year-round program can open new and exciting roads to learning. This schedule will provide a broadened, or enriched concept where the student gains additional experience, wider background, new self-confidence; one which will enable the student to develop broader perspectives in his role in a new emerging urbanized society (Utica Community School District, 1972:9).

Beginning in 1968, a new type of year-round schedule was developed by the Francis Howell School District of St. Charles County, Missouri. The Francis Howell School District was the first school system in the United States to adopt the 45-15 year-round scheduling plan. Under the 45-15 year-round school plan, a student attends

school 45 school days and then has a 15 school day vacation. By staggering the entrance dates for one-fourth of the students every 15 school days, the first group to enter begins its' vacation the day the fourth group enrolls. Fifteen school days later, when the first group returns, the second group commences its vacation, and so on throughout the year. At present, the 45-15 calendar design is the most popular plan in operation with over 75 percent of the districts which operate year-round schools using that schedule design.

#### FRANCIS HOWELL DISTRICT

The Francis Howell Public School District of St. Charles County, Missouri, was facing a rapid growth in school enrollment, just as many other school systems in the United States during the late 1960's. The total student enrollment of the Francis Howell School District was 4,802 in 1968, as compared to a total enrollment of 1516 in 1962.

This would indicate an increase of 3,286 students or over 200 percent growth in a six year period. One of the factors then, which contributed to the need to consider new alternatives, including year-round schools, was the rapid increase in school enrollment in a very short period of time. Table 4 illustrates the increase in student enrollment of the Francis Howell School District over the six year period.

The tax base or the value of property per student in the Francis Howell School District was over six thousand dollars in 1968.

Table 4

STUDENT INCREASE IN  
THE FRANCIS HOWELL SCHOOL DISTRICT  
(1962-1968)

Year	Number of Students
1962	1,516
1968	4,802

This figure represented only sixty percent of the state average for Missouri. The assessed valuation of the district in 1968 was \$29,917,500.00.

The total school budget of the district in 1968 was \$4,825,410.00. The total staff payroll of the Francis Howell School District amounted to \$2,609,274.00. The distribution of the staff in 1968 included 241 teachers, 24 secretaries and 100 maintenance men, bus drivers, food service and health service personnel.

Missouri law limits bonding for construction to ten percent of the assessed valuation of the district. Since the Francis Howell School District was facing an enormous increase in school enrollment, it became apparent in 1968, that the district could not build the necessary buildings due to the relatively low assessed valuation of the property. Table 5 illustrates the assessed valuation of the Francis Howell School District. The Francis Howell School District faced the possibility of using double or split shifts if the school district was to remain on the traditional nine month or one hundred eighty day school year.

The Francis Howell Board of Education members had discussed the possibility of establishing a year-round program on several occasions. The members of the Board of Education had always rejected all year-round school proposals because the members were thinking in terms of a four-quarter plan. In 1968, the School Board finally decided to conduct a parent questionnaire concerning the idea of year-round schools. The questionnaire asked if the parents would support the year-round school program. Responses to the questionnaire

Table 5

ASSESSED VALUATION  
FRANCIS HOWELL  
(1970)

	Francis Howell
Assessed Valuation	\$29,917,500.00
Assessed Valuation per Student	\$ 6,230.00

(Francis Howell School District Records, 1966-1971)

revealed that 61 percent of the parents supported the idea; 38 percent did not and one percent were undecided (Francis Howell School District, 1972). The Francis Howell School Board members, acting on the information gained from the questionnaire, gave their final approval on November 19, 1968, to implement a 45-15 year-round school beginning at Becky-David Elementary School on July 1, 1969.

#### MORA PUBLIC SCHOOLS

The Mora Public School District, Mora, Minnesota, was experiencing, in the fall of 1970, a need for additional classroom space to accommodate increasing student enrollment. In order to solve a space shortage, the Mora Public Schools presented to the voters of the district a proposed school bond issue to finance construction of new school facilities. The voters defeated the bond issue by a large majority. This particular bond issue was needed because of the wealth of the Mora School District. The tax value of the district was \$10,535,057.00 or a per student value of \$5,775.80. Table 6 illustrates the assessed valuation of the Mora Public School District. With the bond issue defeat, the School Board could not construct the needed classrooms. This left the Mora Public School Board with two alternatives; first, the public schools of Mora could continue to absorb the increased enrollments in existing facilities with the hope that pressure from the overcrowding would convince the general public of a need for additional classroom space; or, look at other ways to solve the space problem. The School Board, determined to reduce overcrowding of classrooms, investigated the use of



Table 6

ASSESSED VALUATION  
MORA PUBLIC SCHOOLS  
(1971)

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	Mora
Assessed Valuation	\$10,535,057.00
Assessed Valuation per Student	5,775.80

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(Mora Public School District Records, 1968-1973)

temporary units, renting vacant auxiliary spaces, and the establishment of a split shift schedule. While the School Board was studying these alternatives, a new option was presented. Having heard of the success experienced by the Francis Howell School District and the Valley View School District of Lockport, Illinois, with the 45-15 year-round school plan, the Mora Public School Board devoted serious attention to this topic as a possible solution to their space needs. The School Board quickly began a study of the 45-15 year-round plan. Mr. Richard Smith, Director of the Mora Project, reported:

. . . that the 45-15 plan could increase the student capacity of a school by as much as 33 percent. It was also estimated that the cost for such a program would be less than other alternatives under consideration (Smith, 1971:1).

His study further predicted that ". . . the 45-15 plan would not decrease the quality of education" (Smith, 1971:1). As a result of this study, a decision was made by the school board to initiate the 45-15 year-round school program on July 5, 1971. To assist in the evaluation of the project, application was made for a Title III grant under ESEA. This application was approved in June, 1971, and a first year evaluation design was funded for the school year 1971-72.

#### SUMMARY

Chapter 2 has included a review of the literature and research of year-round education in the United States. Included in this review were reports of National Seminars, feasibility studies and background information relating to the development and implementation of the 45-15 year-round school programs of Becky-David and Fairview Elementary Schools.

## Chapter 3

### RESEARCH PROCEDURES

The initial investigative procedures leading to the design of this study included a review of then currently available literature on all phases of year-round education including feasibility studies, proceedings of the five national seminars on year-round education, review of technical reports and journal articles, and discussions with members of the Board of the National Council on Year-Round Education. During this search and review of literature, which occurred in the Fall of 1972 and Winter and early Spring of 1973, the writer was attempting to identify year-round programs being utilized in a sufficient number of schools throughout the United States to suggest the potential for subsequent utilization and applicability of research findings. The 45-15 schedule met this requirement. In order to provide some credibility to the research, it was determined that schools participating in the study should have been operating extended school year programs for a minimum of two years on the 45-15 year-round calendar. A review of programs revealed that only seven school districts in the United States were, at that time, employing the 45-15 year-round schedule and that several others were scheduled to begin programming in the summer of 1973. Only four of the schools, however, had been operating for two or more years as of July 1, 1973, when the gathering of data was scheduled to begin.

## SELECTION OF DISTRICTS

The districts identified for possible participation in the study were the Francis Howell School District, St. Charles County, Missouri; Mora Public School District, Mora, Minnesota; Prince William County School District, Manassas, Virginia; and the Valley View Public School District, Romeoville, Illinois. After personal contact with representatives of the four districts, it was determined that only two of the districts had available sufficient data to be included in the study. Representatives of the two districts, Francis Howell and Mora, were then questioned as to their willingness to participate in the study and provide data for analysis. Positive and enthusiastic support for the study was obtained and the two districts were identified as the appropriate sample for the study.

## INSTRUMENTATION

After discussion with several experts in the field including: Gene Henderson, Superintendent, Francis Howell School District; Richard Smith, Title III Director, Mora Public Schools; Alan O'Dell, Coordinator of Elementary Education, Francis Howell School District; Stuart Beville, former Superintendent, Prince William County, Virginia; Wayne Worner, Virginia Polytechnic Institute and State University; David Parks, Virginia Polytechnic Institute and State University and other members of the writer's advisory committee, an instrument was designed to elicit data on several dimensions of school operation which might be affected by the implementation of

45-15 year-round programs.

The data and material to be collected and analyzed were identified with the assistance of the doctoral advisory committee. (See Appendix B.) Data were solicited for the period of time three years preceding operation of the selected schools and the two years of initial program operation. Copies of the data collection instrument are included in Appendix A.

Since no direct comparison between districts would be undertaken, the system for analysis of material was not designed to contrast or compare school district data. Several major components were identified for investigation and analysis. They included: curriculum design, staff organization, student's schedules, expenditures, student attendance and attitudes. The system of analysis of the curriculum guide was also discussed with and approved by the doctoral advisory committee as well as the method of presenting staffing and scheduling patterns, expenditure data, attendance data and attitudinal profiles.

Having identified the scope of this study and the several areas to be investigated, the following time table was established for completing the research:

	<u>Time</u>
Review of literature	September, 1972 May, 1972
Presentation and approval of proposal to doctoral committee	May, 1973
Presentation of instrument for gathering data to doctoral committee	June, 1973
Contact of districts to request participation	June, 1973

	<u>Time</u>
Data gathering instrument mailed	June, 1973
Telephone contact to verify district receipt of instrument and clarification of items	June, 1973
Follow-up telephone contact with school district personnel to encourage early return and clarify and/or respond to additional questions	July, 1973
Data gathering instrument returned	August, 1973
Analysis of data begun	February, 1974
Analysis of data completed	April, 1974

#### DATA ANALYSIS AND REPORTING

After receiving the completed Data Collection Instrument from the two cooperating school districts, the material was separated into component parts, i. e., curriculum design, attendance data, expenditure reports, questionnaires, etc. and reviewed for completeness and any obvious errors which might have been made in interpreting the request for information.

When it was determined that the information was complete and in usable form, the analysis and reporting activities were begun. Using the form developed for analysis of curriculum and instruction materials, the curriculum guides were reviewed with special consideration as to: philosophical basis, procedures used in development, existence of supplementary materials and equipment, organization into units, levels, sessions or other sub-groupings, manner in which sub-groups were linked, the curriculum components of units, levels and sessions

and the scope and/or sequence of the curriculum material for the curriculum areas identified for study in chapter one.

Data concerning financial activities of the district, staffing, student attendance, attitudes and other appropriate quantitative information was isolated and extracted for inclusion in appropriate tables. No attempt was made to compare or contrast information from the two programs. Available information was organized and presented on a longitudinal (five year) basis in an attempt to provide a description of what changes took place within the district during the period of time each district was planning and implementing the program. The descriptions were limited to the variables identified for study in chapter one.

Documentation was presented in chapter four pertaining to curriculum development and design for reading and arithmetic, organizational structures, philosophical positions, students' schedules and student reporting procedures for Becky David Elementary School followed by information from Fairview Elementary School. Additional information was presented regarding changes which occurred in reading and arithmetic programs following the decision to place schools on a 45-15 year-round schedule. Summary information regarding these changes was gathered from the Data Collection Instrument; an analysis by the author of curriculum guides for reading and arithmetic; an analysis of evaluation reports and an analysis of information received from personal correspondence and telephone conversations with representatives of Becky David and Fairview Elementary Schools. This information was presented in a narrative style with a detailed

description of the above noted areas. Several tables were presented which contained summaries of the narrative description of the curriculum organization, philosophical positions, students' schedules and reporting procedures.

A report was developed using a narrative format which described school staffing modifications which occurred when the school calendar was changed. Two staffing patterns were reported for this study. They included the staffing pattern utilized with the continuous progress classrooms of Becky David Elementary School and the staffing pattern utilized with the self-contained classrooms of Fairview Elementary School. The primary sources of information regarding changes in school staffing patterns were reported from the Data Collection Instrument, personal conversations with representatives of both schools, individual school evaluation reports and written reports and feedback from the two elementary schools involved in this study.

Additional information was presented in narrative style describing how student scheduling within the school day was modified for reading and arithmetic as a result of the 45-15 year-round scheduling. Tables were used to describe student scheduling patterns for both curriculum areas. Data were also presented in terms of the length of time scheduled for reading and arithmetic.

Descriptions were presented on how reporting procedures to parents were changed for reading and arithmetic in conjunction with the 45-15 year-round scheduling. A detailed narrative report was developed to describe the reporting procedures for both schools.



Appendixes were developed which supplemented the narrative description of the reporting procedures for reading and arithmetic.

Data were presented in chapter five relating to financial expenditures, student attendance, and modifications in attitudes of parents, students and teachers accompanying the 45-15 year-round programming. Information was gathered from the Data Collection Instrument which was mailed to representatives of Becky David and Fairview Elementary, supplementary school records provided by representatives of Becky David and Fairview Elementary and from conversations with representatives of both elementary schools.

The reporting procedures for finance consisted of a narrative description relating to financial information taken from the Data Collection Instrument, district records and conversations with representatives from Becky David and Fairview Elementary Schools for three years preceding initial implementation and one year following implementation of the 45-15 year-round schedule. Financial implications were discussed in narrative descriptive style relating to expenditures for staff, personnel and the total school district budget for Becky David Elementary School. Financial data were also displayed in two tables. Financial data regarding expenditures for curriculum development, curriculum and instructional materials and curriculum and instructional equipment for Becky David were not presented in chapter five because information regarding these expenditures, if any, were not available. Modifications and alterations in financing of operational programs which accompanied implementation of the 45-15

year-round program were also noted. This information was presented in narrative style accompanied by tables. Information on expenditures for staff, in-service, curriculum development, instructional materials, and total school budget for Fairview Elementary School was analyzed, discussed and presented in tabulary format. The pupil/teacher ratio was discussed in narrative style and accompanied by a table.

Data regarding student attendance were gathered for three years preceding initial implementation and one year following implementation of the 45-15 year-round schedule by the Data Collection Instrument. Student attendance was reported by a narrative description and was accompanied by tables. These data included the number of students enrolled and the percent of student attendance for both schools.

Data relating to attitudes of students, parents and teachers prior to and following the advent of 45-15 year-round scheduling were reported in chapter five. Data concerning these attitudes were collected from questionnaires which were distributed to families who had children in attendance in the 45-15 year-round schools of Becky David and Fairview Elementary School. Data relating to the attitudes of students and parents were reported by a narrative description of a summary of the student and parent questionnaires. Data relating to teacher attitudes were reported in narrative style from the teachers' questionnaire which was conducted regarding their attitudes toward 45-15 year-round scheduling.

## Chapter 4

### PROGRAM DESIGN AND CURRICULUM ANALYSIS

#### INTRODUCTION

In chapter four several variables directly related to the year-round curriculum of Becky David and Fairview Elementary Schools will be discussed and analyzed. Both of the above elementary schools utilize different curriculum designs and make use of curriculum guides in various ways. This difference in curriculum design is due, in part, to the different philosophies of the two elementary schools. The curriculum design of Becky David Elementary School was based upon classroom instruction in a continuous progress program, while that of Fairview Elementary School was based upon classroom instruction in a self-contained situation. The curriculum guides for both elementary schools were developed according to the philosophy of each school.

The professional staff of both the Fairview and Becky David Elementary Schools have a designated amount of time scheduled for each subject or subject area. The amount of time for each subject or subject area varies according to the curriculum design and philosophy of each elementary school. A block scheduling pattern was selected by the faculty for implementation of the continuous progress curriculum at Becky David Elementary School, while the faculty of Fairview Elementary School had worked within a specific time schedule for each subject. Becky David Elementary School's block scheduling pattern

referred to time blocks for language arts, math and other content areas. The time blocks were planned so as to be flexible and changeable in order to meet the needs of the students on their various levels (Francis Howell School District, 1972). The specific time schedule used by Fairview Elementary School had a designated (specified) period of time for each subject period.

A method for reporting student progress for each curriculum area and/or subject was developed for use by the faculties of Becky David and Fairview Elementary Schools based upon each districts' year-round program. These reporting procedures allow each parent to receive a summary of each child's academic achievement four times each school year.

#### Method of Analysis

The curriculum guide utilized by the faculty of Becky David Elementary School was analyzed with special emphasis placed on the language arts and arithmetic areas. Material included in the guide was verified by telephone conversations with representatives of the school district. The method of analysis for these curriculum areas included a description of the classroom instructional procedures utilized, a description of structural content and a description of data contained in the structural content. Outline formats were developed to assist in the analysis of curriculum material. Student schedules were reported and analyzed in terms of the specific amount of time (minutes) scheduled for language arts and arithmetic. Appropriate tables accompanied the analysis of student schedules. The reporting

procedure was reviewed and discussed. Included in this analysis was the instrument used for reporting student progress for language arts and arithmetic, and the grading procedure utilized for both curriculum areas. Appropriate appendixes including actual reporting instruments for language arts and arithmetic.

An analysis was made of the curriculum guides used for the primary and intermediate grades for instruction in reading and arithmetic for Fairview Elementary School. The method of analysis of the curriculum guides for Fairview Elementary School followed the same procedure as that of Becky David Elementary School. Student schedules were reported and analyzed in terms of the specific amount of time (minutes) scheduled for reading and arithmetic. Appropriate tables accompanied the analysis of student schedules of reading and arithmetic for Fairview Elementary School. The reporting procedure was given and analyzed for reading and arithmetic. Included in this was an analysis of the instrument used and the grading procedure utilized for both curriculum areas. Appropriate information and appendixes were included of the reporting instrument for reading and arithmetic.

ANALYSIS OF ORGANIZATIONAL STRUCTURE  
AND PHILOSOPHICAL POSITION  
BECKY DAVID ELEMENTARY SCHOOL

The curriculum guides of Becky David Elementary School were designed around a philosophy of continuous progress education. The curriculum was organized around the idea that a child's progress throughout both the primary and intermediate levels should be both continuous and progressive. The major philosophy of the continuous

progress plan of Becky David Elementary School was based on the idea of valuing the uniqueness and differences of each child. The curriculum as developed and utilized by the faculty provides: (1) increased opportunities for children to develop their individual differences and, (2) increased opportunities for teachers to use their individual talents in meeting student needs. The concept of a continuous progress curriculum provides for continuous growth and learning at each child's own rate. By using this type of curriculum at Becky David it was hoped that each child would be accepted on his immediate level of achievement. The concept behind this idea was that each student would progress from that point forward at his own rate.

The six grade levels were replaced with fourteen levels of achievement by which to group or classify students. These levels provide, for teachers, more opportunities for specialization and freedom in adjusting students' work. For the students, the continuous progress curriculum of Becky David provided the potential for identification of individual differences, abolition of promotion by grade, better means of identification of pupil needs and a means for progression at optimum rates. To assist in this process, curriculum guides were developed by the administration, teachers, curriculum specialists and central office personnel to be used by the faculty of Becky David Elementary School.

ANALYSIS OF CURRICULUM DESIGN  
BECKY DAVID ELEMENTARY SCHOOL

The curriculum guide developed for the students of Becky David

Elementary School did not prescribe activities in which children were required to participate. Instead of using a specific set of prescribed activities, the curriculum guides identified skills which should be mastered at each level. Classroom activities were suggested to assist each child in the development and mastery of skills stated. A variety of classroom and outside activities and exercises were suggested for each of the fourteen levels. In some instances, depending upon the level, all children were expected to work on the same activity or exercise. This was rare though, based upon a continuous progress concept and the school's philosophy that each student was expected to work at his own level of achievement and rate.

Activities were also provided to broaden each student's understanding of the world in which he lives. The faculty of Becky David Elementary School was very concerned that the activities used at each level should not mold every child into one pattern, but would help each child reach the highest level of attainment for which he was capable. In order to achieve this goal, activities were designed which attempted to meet the capacities, interests and needs of each child.

#### Language Arts Curriculum

Each of the activities in language arts, of which reading is the main element, was introduced through a vocabulary section. Three elements comprised the activities which were used in the vocabulary section. Classroom activities and exercises were designed to aid each child in the development of word meaning, word analysis and word

recognition. Activities were provided through word analysis to enable each child to understand the meaning of a word by both phonetic and structural analysis. Classroom exercises were included to help each child recognize all words used in reading levels - one through fourteen.

The comprehension portion of the language arts curriculum was a second major area for which classroom activities and exercises were developed. There were three main elements identified in the comprehension portion of the language arts curriculum. These elements included main idea, facts and sequence. The main idea element dealt with each child's ability to interpret the main idea read; the ability to recall principal events and figurative language. The element of facts related to each child's ability to note and remember the details of an oral and/or written story and the ability to distinguish between fact and fiction. The sequence element of the language arts curriculum was designed to assist each child in drawing together the main idea of the story and related facts. In sequence, too, a child was made aware of those skills which will permit him to recall the sequential happenings and to draw conclusions from the story.

The communication element of the language arts curriculum was divided into six units. Included in the six units were activities designed to develop skills for speaking, creative writing, penmanship, spelling, applying spelling skills and grammar and punctuation. Classroom activities in speaking were designed to develop those skills which would allow children to use complete sentences, correct grammar and to speak clearly and distinctly. The speaking activities were extended



into and/or integrated with those for writing. In writing, a child was expected to use creative expression and to develop creative writing skills as he proceeded through each of the levels of difficulty of the continuous progress curriculum. Instructional activities were suggested to assist the child in developing the skills.

Each child was expected to develop those skills essential for good penmanship as he progressed through each level. Activities in penmanship dealt with orderliness, formation and slant. Children were also provided, in the communication phase of the language arts curriculum, with activities designed to help them spell assigned words. Activities in this phase included using spelling rules acquired from classroom experiences for daily work and the ability to spell words correctly in all subject areas. Children were also expected to use correct grammar and punctuation in their daily classroom activities. They were given activities in which they could apply grammatical rules in speaking and writing. Children were made aware of the need to use capital letters in the proper places such as holidays, names of months and days, parts of a letter and titles. They were also expected to apply all rules of punctuation according to the skill sheets developed for that particular level of the language arts curriculum.

In level nine, grammar was introduced formally for the first time into the continuous progress curriculum. The grammar section of the continuous progress curriculum consisted of two main elements: syntax and phonology. Syntax, as used in the language arts guide, pertains to word analysis and usage. Considerable emphasis, from level nine to level fourteen, was directed toward study and activities

dealing with parts of speech. The phonology portion of the curriculum guide dealt with different word forms such as vowel sounds, consonant sounds, synonyms, antonyms, homonyms, morphemes, suffixes and prefixes.

Reference activities included the use of dictionary-related skills, encyclopedia-related skills and library skills. In the library related skills, children were introduced to the Dewey Decimal System. Students were expected to acquire skills such as location of materials through the use of the card catalogue. Children were also provided with activities designed to assist them in locating information through the use of supplementary reference books. An outline of the content included in the language arts curriculum is presented below:

#### I. Vocabulary

- A. Word meaning
- B. Phonetic analysis
- C. Word recognition

#### II. Comprehension

- A. Main idea
- B. Facts
- C. Sequence

#### III. Communication

- A. Speaks well
- B. Writes creatively
- C. Penmanship
- D. Spelling - accuracy
- E. Spelling - rules

F. Grammar usage

IV. Reference

V. Attitudes

A. Work

B. Social

VI. Number of book reports

### Arithmetic Curriculum

The arithmetic curriculum of Becky David Elementary School was developed around a continuous progress approach to education. Instead of having the normal six grades identified specifically, the Becky David faculty developed fourteen levels of arithmetic skill development. Children were placed in homogeneous groups for arithmetic instruction with prior achievement, age, intelligence quotient (as determined by the Otis Intelligence Test), emotional stability, previous records, teacher judgments and teacher-student relationship serving as criteria for placement.

Record sheets were developed for use in each level for recording student achievement in arithmetic. These record sheets contained the student's name, the level on which he was working and the textbook being used. The record forms also contained a key to describe the pacing and ability of each child in each of the fourteen levels of the arithmetic curriculum. Large letters (F, A, S) were used on the record sheets to classify children as being fast, average, or strong in pacing while small letters (s, a, w) were used to classify children as being strong, average or weak according to ability. Each child was allowed

as much or as little time as needed to complete a level in arithmetic and could be moved into another level anytime during the school year. In the continuous progress plan, it was conceivable that a child could complete the arithmetic curriculum in more or less time than the normal six years. Levels one through eight were equated roughly with the primary levels of a standard arithmetic curriculum. Level nine served as a transition level and levels ten through fourteen served as the intermediate level of the arithmetic curriculum. The nine sections of the primary arithmetic curriculum are indicated below:

- I. Vocabulary
- II. Numeration system
- III. Basic facts
- IV. Principles of operations
- V. Measurement
- VI. Story problems
- VII. Geometry
- VIII. Work habits
- IX. Attitudes

Primary Arithmetic Curriculum. The vocabulary sections of the arithmetic guide contained mathematical words such as sets, subsets and shapes which were used in the arithmetic curriculum. Also included under the vocabulary section were number names, symbols, variables and ordinal numbers. The second section of the guide dealt with the numeration systems. Five main topics were presented to students under

numeration. Students were first presented with activities in numeration using the text, Modern Math Through Discovery. This text was used by students to develop the skills necessary to recognize certain numbers. By the time the students reached level nine, they were expected to be able to recognize cardinal, ordinal and Roman Numbers. Students were then given classroom activities designed to develop a pattern of sequence geared to the level at which the child was working. Students were expected to master skills used in reading the number sequence to one thousand, the ability to read and write numerals by tens through nine hundred and the ability to identify missing numerals in a number sequence. Following the acquisition of these skills, students were introduced to patterns on a numeral chart. Study of place values, including the use of ones, tens, hundreds and thousands included classroom activities designed to help students understand expanded notation of place values. Finally, students were provided with classroom activities designed to help them understand fractions. Those included were one-half of a whole number, one-fourth of a whole number and numbers in a particular set of numbers.

The basic facts section contained activities which pertained to addition, subtraction, multiplication and division of whole numbers. Student activities in these four processes encompassed the student's understanding of the interrelationship of each process to the other. The principles of operation of the arithmetic curriculum pertained to the basic laws of arithmetic. The laws used in the primary curriculum included commutative law of addition, associative law of addition and the commutative law of multiplication.

The measurement section of the primary arithmetic curriculum involved activities designed to develop the skills necessary for students to understand a calendar, time, money and linear and liquid measurement. Students were also presented with problems relating to stories. The story problems related to the use of addition and subtraction sentences. Activities were listed which required students to solve number sentences with variables in various positions.

Geometric figures were taught in the form of understanding diagonals of geometric figures and the understanding symmetry in certain geometric figures. In relation to geometry, students were expected to understand matching figures or shapes and line segments.

One special section of the arithmetic curriculum was titled work habits. Several points were stressed in the development of student work habits. Work habits included the following: listening, following directions, completion of assigned work and doing neat and orderly work.

The final area listed in the primary arithmetic curriculum was attitudes. Students were expected to practice self discipline. By practicing self discipline students hopefully developed positive attitudes toward their work.

Intermediate Arithmetic Curriculum. The intermediate arithmetic curriculum began with level nine which served as a transition between the primary and intermediate levels. The curriculum consisted of nine major sections, distributed across levels nine through fourteen. The first section pertained to the use of sets and subsets.

Included in this was each student's ability to distinguish between sets, subsets and elements. Students were expected, by the time they completed level fourteen (which usually took six years), to list the elements in the union and also the intersection of sets.

The second section dealt with the use of decimals in levels nine through fourteen. By the time students reached level fourteen they were expected to be able to identify the decimal point to a fractional number. Students were to have mastered the necessary skills which would enable them to compare place values of whole numbers with those of decimal numbers. Students were expected to be capable of converting decimal numbers to common fractions and/or mixed numbers. After the students had acquired the skills necessary to write decimal numbers as fractions, they were expected to be able to round decimal numbers to the nearest tenth, hundredth and thousandth. The curriculum also contained a section on the metric system. Using the metric system, students were taught the skills which would enable them to compare the metric measuring system with that of decimal numbers. Skills and activities were included which pertained to the addition and subtraction of numbers with up to six decimal places. The multiplication phase of the decimal section considered the multiplication of three decimal place numbers by another three decimal place number. The division of numbers in the decimal section considered division using a three decimal place divisor.

The third section of the arithmetic curriculum dealt with the use of ratio. The section contained the definition for ratio and how a ratio could be applied in everyday practical use. The utilization

of fractions and proportions was also presented. Activities of fractions and proportions consisted of the idea of studying two ratios equal to each other and a differentiation between the means and the extremes of a proportion.

The fourth section was the use of percent. Children were expected to acquire the ability to recognize that the percent sign means one-hundredth by the time they complete level fourteen. It was further expected that several other skills would be attained, such as the ability to write a decimal as a percent, the ability to compute what the percent one number is of another number and the ability to identify and compute the base, rate or percent of a number.

The fifth area of the curriculum concerned problem solving. Skills related to this specific area dealt with the student's ability to translate verbal sentences into mathematical statements. Students were expected to be able to estimate the answer to a problem and to acquire the ability to solve many types of mathematical problems by the time they complete level fourteen.

The sixth area pertained to geometry. Several types of geometric figures were included in the intermediate level guides. Students were to acquire skills needed to distinguish between a line segment and a ray and be able to draw a line between the line segment and the ray. Another type of geometric figure presented was the polygon with three, four and five sides. The student was expected to be able to recognize and draw this geometric figure. The use of angles and arcs was included and students were expected to draw these with the use of a



protractor and a ruler. Students were to have achieved the necessary skills to permit them to contrast plane figures with space figures in the curriculum. Since drawing was an integral part of the arithmetic curriculum, students were also expected to identify and to draw parallel and perpendicular lines.

The seventh section of the guide concerned the use of directed numbers which applied to the use of integers. Students were to be able to contrast directed numbers with whole numbers before they completed the arithmetic curriculum. Students were also expected to recognize that each positive whole number had a corresponding negative number. An additional skill was developed which pertained to the student's ability to add and subtract directed numbers.

The eighth section applied to the use of equations and inequalities. The only skill which was developed involved each student's ability to read and solve inequalities and equations with one unknown.

The final section consisted of the use of graphs. Students were given classroom exercises and experiences which would enable them to read and interpret bar, picto and line graphs. Students were assigned classroom activities which would enable them to write and graph ordered pairs of whole numbers.

#### STUDENT'S SCHEDULE BECKY DAVID ELEMENTARY SCHOOL

The student's schedule at Becky David Elementary School was divided into a primary and an intermediate schedule for language arts. A child followed the primary schedule through level nine. On the

primary level, two hundred and twenty-five minutes were devoted each day for language arts. On the intermediate level, which consisted of levels ten through fourteen, one hundred and eighty-five minutes were set aside for language arts. In the primary schedule, the time period for language arts was forty minutes longer than the time period for the intermediate level. Table 7 illustrates the time set aside for language arts for both the primary and the intermediate levels.

The student's schedule for arithmetic was also divided into a primary and an intermediate schedule. The primary schedule consisted of ninety-five minutes and the intermediate schedule had seventy minutes scheduled for instruction and activities in arithmetic. Table 7 also illustrates the time scheduled for instruction for both the primary and the intermediate periods for classroom instruction in arithmetic.

#### PROCEDURE FOR REPORTING STUDENT PROGRESS BECKY DAVID ELEMENTARY SCHOOL

Becky David Elementary School had organized its reporting procedure to parents around the continuous progress curriculum. There were four formal reporting periods each school year. The first report was in the form of a conference at school between each parent and student's language arts teacher. In addition to the first conference, the staff encouraged each parent to have more than the one scheduled conference at school with each student's teachers during the school year. Provisions were made for additional parent conferences whenever the parents or teachers requested such a conference.

Table 7  
LANGUAGE ARTS AND ARITHMETIC STUDENT'S SCHEDULE  
BECKY DAVID ELEMENTARY SCHOOL

Levels	Subject	Time	Minutes
1-9 (Primary)	Language Arts	9:00-12:45	225
10-14 (Intermediate)	Language Arts	9:05-12:10	185
1-9 (Primary)	Arithmetic	12:45- 2:20	95
10-14 (Intermediate)	Arithmetic	1:50- 3:00	70

After the first reporting period, each succeeding student report contained information on language arts, math, social studies and other curricular areas. Each student's progress was indicated by a W (weak), A (average) and S (strong).

Whenever a student successfully completed one of the fourteen levels of the curriculum guide, a progress report was sent home for that particular subject area and level. Appendix C illustrates the contents of the reporting device utilized in language arts. Appendix D outlines the contents of the arithmetic reporting procedure.

ANALYSIS OF ORGANIZATIONAL STRUCTURE  
AND PHILOSOPHICAL POSITION  
FAIRVIEW ELEMENTARY SCHOOL

The staff organization for Fairview Elementary School was based upon the concept of a self-contained classroom. There were many definitions of a self-contained classroom being used by school districts across the United States in the 1960's. In 1960, in her book, The Self-Contained Classroom, Clara R. Chiara identified a self-contained classroom as a plan that allowed one group of students and one teacher to be together for a major portion of the school day (Chiara, 1960). This definition deviated from earlier definitions in that it allowed a student to be with more than a single teacher. It assumed that a single teacher could not be a specialist in all curriculum areas. The definition of a self-contained classroom used here, permitted the utilization of curriculum specialists and resource people within the regular classroom.

At Fairview Elementary School, a teacher was assigned to a

group of students using a pupil-teacher ratio of 25.5 to 1. Each teacher had the responsibility for planning all daily classroom curriculum activities and guiding the overall intellectual, social and physical development of each child. Resource personnel and curriculum specialists were employed to assist the regular classroom teachers in performing these duties. The work of these resource personnel and curriculum specialists varied. In most instances, the resource personnel worked with the regular classroom teacher in the planning of classroom activities, in order that the child's total educational program be considered.

#### ANALYSIS OF CURRICULUM DEVELOPMENT AND DESIGN FAIRVIEW ELEMENTARY SCHOOL

The curriculum guides of Fairview Elementary School were developed by the teachers of the Mora Public Schools with the help of Dr. James Anderson from St. Cloud State College, St. Cloud, Minnesota, who served as a consultant. Two teams were selected for the writing of the curriculum guides. Writing team one, composed of teachers and Dr. Anderson, consisted of five staff members from the intermediate grades of four, five and six. All the teachers of writing team one and two were paid full salary while writing the curriculum guides. Team one completed the first draft of the intermediate curriculum guide during the first three weeks of September, 1971. Writing team two was also made up of five teachers from grades one, two and three along with Dr. Anderson. The second team completed writing the first draft of their curriculum guide during the first three weeks of

December, 1971.

After the initial writing of the first draft of the curriculum guides, all staff members were provided copies. The staff members were asked to examine the guides, suggest changes and make corrections while they were using the guides during the remainder of the school year. Following the use of the curriculum guides for one-half of the school year, a third writing team was selected. The third writing team was composed of the five staff members from the primary and the intermediate levels. This team had the responsibility for rewriting the first draft for the final copy of the curriculum guides which would later be printed. As the third writing team completed their work, necessary changes and corrections were made in the curriculum guides based on the Fairview Elementary School needs and teachers experience with the materials.

#### Reading Curriculum Guides

The curriculum guides for the reading program were divided into two sections. The first volume of the reading curriculum contained classroom activities and skills sheets for reading in grades one, two and three. The second volume contained classroom activities and skills sheets for grades four, five and six. The reading curriculum guides were divided into levels, which contain units of work. Each of the levels had from twelve to twenty-six units of work. Each unit of work had been organized into four steps. The first two of the four steps of each unit had been developed and organized for one reading period.

The second reading period (third step), dealt with teaching reading and was designed to take one day for that particular unit. The fourth step dealt with meeting the individual needs of all children. The skills for this section had been organized to take either three or four days to complete. In some instances, depending upon factors such as recognizing individual differences of students and teachers, a shorter or longer period of time might have been spent in each unit of the reading curriculum although each unit had been designed to take from five to six days to complete. This time was adjusted according to the individual needs of the children and teachers involved in each level. The following is an outline of the reading curriculum of Fairview Elementary School:

Step 1. Preparing for reading

- A. Review of previously taught skills and stories.
- B. Relate material to child's personal experiences.
- C. Insert special information that pupils may need in decoding new words they will meet.

Step 2. Reading and discussing

- A. Talk about the illustrations.
- B. Silent reading assignments.
- C. Oral reading and comprehension checks
- D. Story discussion
  - 1. Literal comprehension
  - 2. Interpretive thinking
  - 3. Evaluative and creative thinking

### Step 3. Teaching reading skills

- A. Recognition of newly introduced basal words.
- B. Linguistic development.
- C. Decoding practice.
- D. Comprehension practice.
- E. Supplementary skills dealing with each level.
- F. Workbook exercises.

### Step 4. Meeting individual needs

- A. Meet the needs of those children who have not gained sufficient mastery of one or more of previously taught skills.
- B. Meet the needs with supplementary materials for those children with mastery.

The objectives of the primary reading program were divided into two sections. These two sections included each child's ability to read independently and at the same time to develop an increased interest in reading. The objectives of the primary reading program are outlined below.

#### I. Independence in reading

- A. In order to demonstrate his ability, when reading silently, to convert printed language into oral language it represents, the pupil reads aloud material of an appropriate difficulty level with acceptable pronunciation and expression with reasonable fluency. This involves the use of all decoding skill for each level.
- B. The pupil correctly answers questions on material he has read and appropriate difficulty level questions that test not only his literal comprehension but also his ability to go beyond what has actually been stated in the text. This involves the use of all comprehension skills for each level.
- C. The pupil demonstrates good study procedures. This involves



the use of all reference and study skills for each level.

1. Making efficient use of reference aids.
2. Appraising the relevance and reliability of such information.
3. Organizing information in outline form.

## II. Interest in reading

- A. The pupil discusses, at an appropriate maturity level, the literary nature and merit of material he has read. This involves the use of all literary appreciation skills for each level. (Independent School District No. 332, 1926:197).

The intent of the program design was that the objectives of the reading program would be changed whenever the need occurred. The objectives included each child's ability to read both silently and orally. While reading silently, it was an objective that each child should be able to convert printed language into oral language. As each child developed the ability to read orally, he would be able to pronounce and express each word with reasonable fluency. The student's ability to do this involved the development of decoding skills for all levels of the reading curriculum.

Another objective of the primary reading program was for each pupil to correctly answer questions on the material with which he was working. The questions concerned not only the literal comprehension, but also the child's ability to go beyond what had actually been stated in textbooks. In order to achieve this, it involved use of multiple comprehension skills which were to have been acquired in each of the primary units of the first seven levels. It was an objective to introduce new studying techniques which utilized reference aids,

forced appraisal of relevance and reliability of such information and required organization of information in outline form.

The objective of the reading program of the intermediate grades was to provide for continuous instruction in various reading skills from level one of the primary curriculum guide through grade six of the intermediate curriculum guide. It was assumed that continuous instruction in reading would provide for total integration of all reading skills with that of other common reading skills introduced in writing, speaking and listening. Realizing that all students were not capable of working on the same levels, the reading materials were adjusted for slow, average and superior students. An additional objective was to increase the emphasis on the uses of reading as a source of information, as an aid to personal and social development, and as a means of recreation. Students who were unable to keep pace with other children of comparable ability were to be given corrective or remedial instruction. The curriculum guide provided information and suggestions as to recommendations for the correction of specific reading deficiencies.

The prescribed activities of the reading curriculum guides were provided in each unit of the seven levels of the primary reading curriculum guide (grades 1-3). Activities for the intermediate grades (4-6) were adjusted for all students according to student classification as slow, average and superior. The activities of the primary reading program outlined the progression of skills for each of the seven levels. Built into each of the seven levels were smaller steps called units. Each unit contained basic skills which a child was expected to master.

The prescribed activities of the intermediate curriculum guides (grades 4, 5, 6) followed the 1971 edition of the Houghton Mifflin Reading Program. Specific activities included the continuation of skills already developed through the primary activities. Classroom activities were suggested which would build auditory, visual and motor skills. Activities were provided to help each child develop word identification skills, structural analysis skills, context skills, comprehension skills, and study skills. Activities were also included in both silent and oral reading. Use of the school library by students was incorporated into the curriculum. Proposed library activities included student's use of the card catalogue, vertical files, dictionaries, encyclopedias, atlas, Reader's guides, maps, graphs and diagrams.

The primary reading curriculum guide did not refer specifically to suggested activities to be utilized by the teachers in their respective classrooms. Instead of using suggested activities, skills were given for each unit of the seven levels. A student in each of the units, beginning in unit one of level one, was required to master a unit before being permitted to move on to the next unit. The skills introduced in the next level follows the prescribed pattern as those given earlier. From this writer's analysis of the literature available and personal contact with personnel from Fairview Elementary School, it would appear that each of the skills were presented in a natural and orderly pattern. Again, it would appear from the analysis of all seven levels of the primary reading curriculum and the levels of the intermediate reading curriculum that those skills inserted in the previous unit were essential elements in the reading program.

Skills as given in an earlier unit or level would appear to have to be mastered if a child were to be prepared for the activities which were provided in the higher unit.

Students were expected to acquire and master the skills in both the primary and intermediate units, levels and grades of the reading curriculum. This mastery, which each pupil was expected to acquire, was represented by the attainment of behavioral objectives that were established for each unit and grade. All pupils were continuously tested to determine specific reading weaknesses. This testing provided the necessary information for teachers to determine which of the previously introduced skills needed to be taught again. The information enabled the teachers to place each pupil in a level in which he would most likely progress comfortably.

The primary reading curriculum guide did not utilize specific resource materials for students and teachers to refer to in the selection of curriculum materials. However, the intermediate curriculum guide listed obtainable curriculum materials. These resource materials were in the form of tests, equipment and reading curriculum materials. The tests available for the reading program were selected by the faculty. The reading tests, available for use by each teacher, included those from the Houghton Mifflin Company, Ginn Company and the Macmillan Company. The faculty had other curriculum resource materials to select from such as overhead transparencies, pilot library, SRA Laboratory kits, library books, teachers' manuals, encyclopedias and dictionaries. A wide range of resource material was also available from the reading center which was available to the Fairview Elementary

School faculty.

### Primary Arithmetic Curriculum

The arithmetic curriculum was based upon instruction in a self-contained classroom situation. The arithmetic curriculum was contained in two curriculum guides. The first guide included the arithmetic skills and activities necessary for instruction in grades one, two and three, while the second curriculum guide consisted of those skills and classroom activities necessary for grades four, five and six.

The purposes of arithmetic in the primary grades were to develop concepts of quantity and relationship and to develop mathematical skills needed in simple computation. Another purpose was to prepare the student for the next steps in mathematical learning needed for his educational requirement. In the development of these necessary skills, it was very important that the skills be realistic in terms of each child's potential.

The evaluation of each child's progress was an integral part of the curriculum guide. The arithmetic curriculum guide suggested that written expression, oral expression and class discussion be considered in the evaluation process. Each child's growth in mathematical skills was measured from the beginning of one nine weeks to the end of the next nine weeks. The curriculum guide also suggested that tests and quizzes in arithmetic be a part of the evaluation process for each child.

The arithmetic curriculum guides were developed along grade

lines. The primary arithmetic curriculum guide was divided into sessions. These sessions were broken down further into units of work. These units of work, which corresponds to each session, were in the form of traditional arithmetic workbooks.

The primary arithmetic curriculum guide introduced arithmetic through the use of four instruments. First, each session of the arithmetic curriculum had a mathematical concept expressed by the means of an objective. The objective given in each session was also carried over into each unit. An illustration of this idea was the mathematical objective found in session one of grade one. This objective pertained to the child's ability to distinguish between the values of more or less. The classroom teacher illustrated this objective of more and less in the classroom. After the illustration, children were given activities to do in unit one of session one. Unit one had simple activities in the form of pictorial illustrations to help each child to distinguish between more and less. As the child progressed, the activities related to previously learned skills.

The second idea in the arithmetic curriculum guide was that of concepts. Correlated mathematical concepts were used to help each student conceive mathematical operations in his mind. As stated earlier, one of the objectives of session one, unit one, was for each child to develop an idea of more or less. The child began to think about the idea of more or less and greater or less through the use of sets and quantitative concepts. All other objectives of each session and each unit were correlated in the same manner.

The third instrument was that of vocabulary. The vocabulary

of session one, unit one, was correlated with the objectives and concepts of session one, unit one in that the words contained in the vocabulary pertained to more or less and greater or less. The vocabulary of session one which correlated with the objectives and concepts were more, fewer, less, greater, one more, first, second and third.

The fourth idea related to activities to be used in relationship to objectives, concepts and vocabulary. The activities of session one, unit one, such as matching one to one on a flannel board and working with a pegboard, correlated with the objectives, concepts and vocabulary by relating to more or less and greater or less.

There were four sessions for grade one. Session one contained four units of work, session two was made up of two units of work, session three had two units of work and session four consisted of four units of work. All four sessions of work were correlated with the twelve units through the objectives, concepts, vocabulary and activities. Table 8 illustrates the units of work for each session of the arithmetic curriculum guide for the first grade of Fairview Elementary School.

The same type of curricular organization was continued for the second grade. First, objectives for each session were listed. Units of work were developed for each session. Second, concepts were outlined based upon the mathematical criteria of the objectives stated. Third, the vocabulary was developed for each session based upon the objectives and concepts of each session. Fourth, activities were planned based upon the objectives, concepts and vocabulary of each session. There were four sessions of the arithmetic curriculum guide for the second grade. Session one contained three units, session two

Table 8  
SESSIONS AND UNITS OF WORK  
FAIRVIEW ELEMENTARY SCHOOL  
FIRST GRADE

Sessions	Units	Name of units
1	4	(1) Primary number concepts (2) Cardinal numbers and numerals 0 to 9 (3) Numbers and numerals 0-9 (4) Introduction to addition equation: combination through 5
2	2	(1) Introduction to subtraction equations: combination through 5 (2) Addition and subtraction equat- ions: combination through 9
3	2	(1) Place value and inequalities (2) Addition and subtraction through 10
4	4	(1) Basic principles (2) Three addends in vertical notation (3) Money, fractions and measurement (4) Geometric shapes



was made up of two units, session three had two units and session four consisted of four units. Table 9 illustrates the sessions and units of work of the second grade arithmetic curriculum guide of Fairview Elementary School.

The third grade arithmetic curriculum guide followed the same type of organizational pattern as that of the first and second grades. There were four sessions designed for use in the third grade. There were two units in session one, two units in session two, three units in session three and four units in session four. Table 10 illustrates the sessions and the units of work contained in the arithmetic curriculum guide of Fairview Elementary School for the third grade.

#### Intermediate Arithmetic Curriculum

The intermediate arithmetic curriculum of Fairview Elementary School contained a general purpose for each grade level. The general purpose given for the fourth grade was to present basic addition, subtraction, multiplication and division facts, to extend the meaning of place value, introduce some work in fractions and also some basic ideas in geometry. Following the primary level pattern, the intermediate arithmetic curriculum was organized around sessions. These sessions were broken down further into units of work. The intermediate curriculum guide utilized objectives, concepts and vocabulary as used by the primary level. The fourth topic, that of activities, was not included in the intermediate sessions, but at the end of each grade level.

In session one of grade four, three main topics were pro-

Table 9  
SESSIONS AND UNITS OF WORK  
FAIRVIEW ELEMENTARY SCHOOL  
SECOND GRADE

Session	Units	Name of units
1	3	(1) Cardinal numbers (2) Place value and inequalities (3) Addition and subtraction concepts
2	2	(1) Addition combinations up through eighteen (2) Application of math principles
3	2	(1) Addition and subtraction combinations through eighteen (2) Two-digit addition and subtraction
4	4	(1) Addition and subtraction combinations through eighteen (2) Number theory (3) Adding and subtracting larger numbers (4) Geometry

Table 10  
SESSIONS AND UNITS OF WORK  
FAIRVIEW ELEMENTARY SCHOOL  
THIRD GRADE

Session	Units	Name of units
1	2	(1) Number and place value (2) Roman numerals
2	2	(1) Addition and subtraction (2) Money concepts
3	1	(1) Extend word in addition and subtraction
4	4	(1) Geometry (2) Measurement (3) Reading a thermometer (4) Addition and subtraction

vided. First, session one reviewed the basic operations of addition and subtraction of whole numbers. The second topic discussed was that of place values while measurement was the third topic. As stated earlier, and as a carry over from the primary arithmetic curriculum guide, each of the three main topics were complete with objectives, concepts and vocabulary for each session.

Session two of the curriculum guide consisted of three main topics, which were multiplication and division, special products and quotients and geometry. Session three included the three main topics of estimation, multiplication and geometry. Division, number theory and geometry completed the main topics for session four. Table 11 illustrates the sessions and topics of the arithmetic curriculum guide of grade four.

A list of suggested activities were included at the end of the guide for grade four. Curriculum resources to be used with all four sessions of grade four was also provided at the end of the curriculum guide for grade four.

The general purpose of the arithmetic curriculum of grade five was to present basic addition, subtraction, multiplication and division facts and to introduce the student to fractions, rational numbers, decimals and geometry. As in previous grade levels, the fifth grade utilized objectives, concepts and vocabulary. There were suggested activities and arithmetic resources listed at the end of chapter five.

There were four sessions to the grade five arithmetic curriculum guide. Session one covered four main mathematical areas.

Table 11  
SUMMARY OF THE CONTENTS OF ARITHMETIC FOR GRADE FOUR  
FAIRVIEW ELEMENTARY SCHOOL

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Session	Topics
1	(1) Addition and subtraction of whole numbers (2) Place values (3) Measurement
2	(1) Multiplication and division (2) Products and quotients (3) Geometry
3	(1) Estimation (2) Multiplication (3) Geometry
4	(1) Division (2) Number theory (3) Geometry

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These areas were as follows: a review of the four basic operations of whole numbers, place values and inequalities, equations and operations, reasoning and estimation.

Computing and geometry made up the areas covered in session two of grade five. Only one unit of work, geometry, was developed for use with session two. Session three consisted of four main headings -- number theory, fractions, rational numbers, and the addition and subtraction of rational numbers. There were four units of work developed for session three. The four units of work related to number theory, fractions, rational numbers and addition and subtraction of rational numbers.

Session four consisted of four main topics. The four principal areas were decimals, geometry and measurement, coordinate geometry and a new mathematical system. Three units of work were developed for use with the four main areas. All four sessions had objectives, concepts and a vocabulary study for each area. Table 12 illustrates the sessions and topics of the arithmetic curriculum of grade five of Fairview Elementary School.

The general purpose of the arithmetic curriculum of grade six was to present basic addition, subtraction, multiplication and division facts and to provide more work with fractions, rational numbers, place value decimals and geometry. As in previous grade levels, the sixth grade curriculum guide utilized objectives, concepts and vocabulary in each session. There were suggested activities and arithmetic resource materials listed at the end of chapter six.

There were four sessions to the grade six arithmetic

Table 12  
SUMMARY OF THE CONTENTS OF ARITHMETIC FOR GRADE FIVE  
FAIRVIEW ELEMENTARY SCHOOL

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Session	Topics
1	(1) Review (2) Place value and inequalities (3) Equations and operations (4) Reasoning
2	(1) Computing (2) Geometry
3	(1) Number theory (2) Fractions (3) Rational numbers (4) Addition and subtraction
4	(1) Decimals (2) Geometry and measurement (3) Coordinate geometry (4) New mathematical system

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curriculum guide. Session one had the following three main areas: place value and number bases, working with whole numbers and computing. One unit of work was developed for use with each topic of session one. Session two made use of four areas. The first area was that of number theory with a second area including fractions and rational numbers. The third area consisted of addition and subtraction of rational numbers while the fourth area was multiplication and division of rational numbers. Four units of work were developed for use with session two. Four areas made up session three. The areas were as follows: ratio, the use of decimals, working with percents and the use of integers. Four units of work were developed for use with session three. Session four had four main areas of work. The four main areas were graphing, probability, two areas of geometry and measurement. Three units of work were developed for use with session four. Table 13 illustrates the sessions and topics of the arithmetic curriculum of grade six from Fairview Elementary School.

All students who attended Fairview Elementary School had a daily one hour period scheduled for arithmetic. Classroom instruction for arithmetic was based upon total departmentalization for the intermediate grades. Classroom instruction for the primary grades in arithmetic and language arts was based upon partial departmentalization in these two curriculum areas. Table 14 also illustrates the time period which has been scheduled for arithmetic for students who attend Fairview Elementary School.



Table 13  
SUMMARY OF THE CONTENTS OF ARITHMETIC FOR GRADE SIX  
FAIRVIEW ELEMENTARY SCHOOL

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Session	Topics
1	(1) Place values and number bases (2) Whole numbers (3) Computing
2	(1) Number theory (2) Fractions and rational numbers (3) Addition and subtraction of rational numbers (4) Multiplication and division of rational numbers
3	(1) Ratio (2) Decimal (3) Percent (4) Integers
4	(1) Graphing (2) Probability (3) Geometry and measurement (4) Geometry and measurement

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STUDENT'S SCHEDULE  
FAIRVIEW ELEMENTARY SCHOOL

A student's schedule in Fairview Elementary School was broken down into subject areas. Table 14 illustrates the time scheduled for each student on a daily basis in reading and arithmetic.

PROCEDURE FOR REPORTING STUDENT PROGRESS  
FAIRVIEW ELEMENTARY SCHOOL

The reporting method of Fairview Elementary School utilized two types of report cards. One report card was developed for use in the primary (grades 1-3) and another report card was designed for the intermediate (grades 4-6). Students received their report cards four times each year on the primary level. By using a forty-five day reporting period, a child was able to receive his report card before beginning the fifteen day vacation. At the end of the fourth reporting period, a final grade was given to each student. In the primary grades, students were assigned letter grades to reflect their progress in the program. In addition to the conventional letter grade reporting system, a key-order progress report was utilized. A display of the elements of the key-order reporting system is included here for classification:

- . Pr - Pre-reading
- . pp<sup>1</sup> - 1st pre-primer
- . pp<sup>2</sup> - 2nd pre-primer
- . pp<sup>3</sup> - 3rd pre-primer

Table 14  
 READING AND ARITHMETIC SCHEDULE  
 FAIRVIEW ELEMENTARY SCHOOL

Grades	Subject	Time	Minutes
1-6	Reading	8:30-9:45	75
1-6	Arithmetic	11:00-12:00	60

- .  $1^1$  - 1st reader, 1st book
- .  $1^2$  - 1st reader, 2nd book
- .  $2^1$  - 2nd reader, 1st book
- .  $2^2$  - 2nd reader, 2nd book
- .  $3^1$  - 3rd reader, 1st book
- .  $3^2$  - 3rd reader, 2nd book
- . 4 - 4th reader
- . 5 - 5th reader
- . 6 - 6th reader

In addition to the letter grades assigned and the reading level designation, other information was included within the reading section of the report card. This additional information pertained to a student's knowledge of simple sight words, basic vocabulary, the ability to read and to understand what he has read, ability to apply phonic skills and the ability of each child to complete seat work. Appendix E illustrates the contents of the primary reporting device utilized in reading. The arithmetic section of the primary report card also provided for designation of a letter grade. In addition there was an opportunity for teachers to indicate performance competency of students on a limited number of items. Faculty-parent conferences were encouraged as needed, but not as a planned integral part of the formal reporting procedure. Appendix F contains material representing the contents of the report card for arithmetic.

The intermediate report card was developed along the same guidelines as that of the primary report card. The marking system and

the key-order of reading for the intermediate report card was the same as that on the primary report card.

The information contained under the reading and arithmetic sections of the intermediate report card is different from that of the primary report card. In reading, on the intermediate report card, there was a place for the assignment of a letter grade and the reading level (four times a year) and also a place for recording a final grade. There was other information contained such as the student's knowledge of vocabulary, the student's ability to read orally, the student's ability to understand what he has read, the ability to apply phonics skills and the student's ability to understand and complete seat work. Appendix G illustrates the contents of the intermediate reading report card.

The information contained on the arithmetic report card deals with each child's ability to work accurately, to apply reasoning when solving problems and the student's knowledge of number facts. There was also a place for an arithmetic letter grade. The reporting method adopted for arithmetic at Fairview Elementary School represented one attempt to insure a continuous development of fundamental mathematical processes and concepts.

#### SUMMARY BECKY DAVID ELEMENTARY SCHOOL

A curriculum committee was appointed in 1968 to develop curriculum material which could be utilized in a 45-15 year-round school setting. After an intensive and detailed review of curriculum materials available to the committee, two alternatives were recommended

for the year-round program. The curriculum committee recommended that a curriculum guide be developed which could be (1) utilized with a 45-15 year-round school calendar and (2) based upon a philosophy of continuous progress education. Following this recommendation, a curriculum guide was developed by the committee which could be used with a 45-15 year-round schedule and was based upon a continuous progress concept. This curriculum guide deviated from the material and curriculum structure utilized before implementation of year-round scheduling. The curriculum guide was developed around fourteen levels of achievement, instead of the traditional graded classroom situation which was used before implementation of year-round scheduling.

Chapter four contained an analysis and discussion of the following six elements of the language arts curriculum: vocabulary, comprehension, communication, reference, attitudes and the number of book reports. Also, chapter four included an analysis and discussion of nine elements of the arithmetic curriculum guide. These nine elements were: vocabulary, numeration system, basic facts, principles of operation, measurement, story problems, geometry, work habits and attitudes.

The year-round student reporting procedure for language arts and arithmetic was discussed and analyzed in terms of content, duration of time, and the assignment of a grade and/or rating scale. Also, the amount of time in minutes was discussed and analyzed for language arts and arithmetic for each of the fourteen levels in chapter four.

SUMMARY  
FAIRVIEW ELEMENTARY SCHOOL

In 1971, a committee was selected to develop and write curriculum guides which could be used in a 45-15 year-round school setting. The curriculum committee, along with their consultant, developed curriculum guides which were designed to be used in a graded, self-contained classroom situation. An objective was developed and written by the committee for each of the six (grades 1-6) self-contained grades based upon the individual needs of each child and the school's philosophy.

In chapter four, an analysis and discussion was made of the curriculum guides utilized by the faculty for reading and the curriculum guides for arithmetic. This analysis and discussion of curriculum guides also included written information secured from correspondence with representatives of the Mora Public School District, the Data Collection Instrument, and telephone conversations with Mr. Richard Smith, Title III Director. The two curriculum guides developed for reading were analyzed and discussed according to the basic classroom organizational structure and the amount of time suggested for each level and unit(s) of work developed for each level. Curriculum guides utilized for arithmetic were also discussed and analyzed in relation to the classroom organizational structure. The two arithmetic curriculum guides were analyzed and discussed along grade lines, which included small segments of work called sessions. These sessions were broken down further into units of work.

The student reporting procedure was discussed and analyzed for reading and arithmetic in relation to content, duration of time and the method(s) for indicating student progress. The amount of time scheduled for students in reading and arithmetic was discussed and analyzed in terms of minutes scheduled for both curriculum areas.



## Chapter 5 OTHER IMPLICATIONS

### INTRODUCTION

In addition to significant changes in curriculum design and programming, several other dimensions of the school districts operations were influenced by a decision to change from conventional scheduling to year-round school scheduling. Among these were staffing patterns, pupil teacher ratio, student attendance and a number of expenditure items. Also, the attitudes and responses of various constituent populations; parents, teachers and students were deemed to be important in a comprehensive analysis of the impact of such a change upon a school district. These influences and attendance changes are presented in this chapter.

### STAFF EXPENDITURES BECKY DAVID ELEMENTARY SCHOOL

The staff of Becky David Elementary School increased from 30 in the school year 1966-67 to 65 during the school year 1970-71. This was an increase of 35 teachers over a five year period. This increase in staff numbers was also reflected in increased expenditures for staff. During the school year 1966-67, the staffing cost at Becky David Elementary School was \$172,724.00. During the school year 1970-71, the total staffing cost was \$531,495.00. This was an increase of \$358,771.00 over the five year period. The pupil-teacher ratio at Becky David Elementary School during the 1966-67 school year was

28.06 students to 1 teacher. After the year-round schedule was implemented, the pupil-teacher ratio at Becky David Elementary School showed a steady decrease. Table 15 illustrates the positions included in determining the pupil-teacher ratio at Becky David Elementary School. By the school year 1970-71, the pupil-teacher ratio was 23.35 students to 1 teacher. This figure represents a 4.71 student decrease per teacher over a five year period. Table 15 also illustrates the continuous yearly increase in student enrollment at Becky David Elementary School. Naturally, with the continuous increase in student enrollment, an expanded faculty was necessary. With the increase in student enrollment, which reflected a need for additional teachers, the cost of staff for Becky David continued to increase over the five year period of this study. Table 15 also illustrates the number of students, number of teachers, and the cost of staff at Becky David Elementary School.

EXPENDITURES FOR  
CURRICULUM GUIDES, MATERIALS AND INSTRUCTIONAL EQUIPMENT  
BECKY DAVID ELEMENTARY SCHOOL

It was reported earlier that the faculty of Becky David Elementary School was engaged in the development of curriculum guides for use with their year-round educational program. Mr. Alan O'Dell, Administrative Assistant, Elementary Education, reported that expenditures for curriculum development and materials for the year-round school program were not isolated as a separate part of that district's budget. There was also no record kept or accurate information available

Table 15  
POSITIONS INCLUDED IN DETERMINING PUPIL TEACHER  
RATIO AT BECKY DAVID ELEMENTARY SCHOOL

School year	1966-67	1967-68	1968-69	1969-70	1970-71
Regular class- room teachers	28	41	53	55	62
Principals	1	1	2	2	2
Assistant princi- pals	0	1	0	0	0
Librarians	0	0	0	0	0
Specialists	1	1	1	1	1
Total	30	44	56	58	65
Pupil-teacher ratio	28.06	24.92	24.90	25.48	23.35
Number of students	814	1047	1345	1427	1473
Cost of staff	172,724	\$272,724	\$368,010	\$409,920	\$531,495

(Francis Howell School District Records, 1966-1971)

concerning the district's expenditures for in-service education of faculty assigned to the Becky David Elementary School. Financial records regarding expenditures for instructional equipment were also not available from Becky David Elementary School.

DISTRICT BUDGET  
FRANCIS HOWELL SCHOOL DISTRICT

Although reports of total district expenditures do not necessarily reflect the impact of programs conducted in any of the district's schools, it is interesting to note the expenditure patterns in a school district to provide a perspective relating to the district's growth and financing.

The total district budget of the Francis Howell School District illustrates the substantial increase in districts' expenditures for education. The Francis Howell School District recorded a total district budget of \$1,153,845. during the 1966-67 school year. By the 1970-71 school year the annual budget had increased to \$2,653,187. This represents an increase of \$1,499,342. over the five year period. Table 16 outlines the total district expenditures for the Francis Howell School District for three years prior to the implementation of the 45-15 year-round schedule and one year preceding the implementation of the year-round schedule. Mr. Alan O'Dell has attributed the increase in recorded budget to; a continuous increase in student enrollment, additional faculty and personnel which were required to staff expanding classrooms and facilities, additional instructional equipment and supplies and to inflation.

Table 16  
 SCHOOL BUDGET OF THE FRANCIS HOWELL SCHOOL DISTRICT  
 THREE YEARS PRIOR TO THE IMPLEMENTATION OF THE  
 YEAR-ROUND SCHEDULE AND ONE YEAR PRECEDING THE  
 IMPLEMENTATION OF THE YEAR-ROUND SCHEDULE

Year	1966-67	1967-68	1968-69	1969-70	1970-71
Expenditures Dollars	1,153,845	1,458,752	1,741,127	2,104,220	2,653,187

STUDENT ATTENDANCE  
BECKY DAVID ELEMENTARY SCHOOL

School attendance officials, parents, local community and civic groups of the Francis Howell School District, as in other districts, were concerned about the impact of the program on student attendance. Table 17 illustrates the attendance record of students from Becky David Elementary School over the period studied. Table 17 also shows the constant increase in student enrollment over the five year period of this study. There was a decrease of 2.26 percent in the attendance of students at Becky David Elementary School during the first year of the year-round school operation. And an increase in student attendance of .56 percent during the second year of year-round operation. Although some fluctuation in percentage of attendance is noted, it does not appear that the new scheduling patterns had any significant influence on school attendance.

ATTITUDES OF PARENTS  
BECKY DAVID ELEMENTARY SCHOOL

A questionnaire concerning the attitudes of parents toward a year-round school schedule for Becky David Elementary School of St. Charles County, Missouri was distributed in September, 1969. This questionnaire was sent to parents of students enrolled in Becky David Elementary School representing seven hundred ninety-three homes. Of this number, five hundred seventy-five questionnaires were returned for a seventy-two and one-half percent return of questionnaires. Appendix I contains a summary of the questionnaire for parents which

Table 17  
STUDENT ATTENDANCE  
BECKY DAVID ELEMENTARY SCHOOL

	1966-67	1967-68	1968-69	1969-70	1970-71
Average daily attendance	769.00	1005.60	1291.60	1338.10	1389.10
Number of students	814	1047	1345	1427	1473
Percentage of attendance	94.47	96.03	96.03	93.77	94.33

was distributed in September, 1969 (Francis Howell School District, 1972:19).

Parents were asked to respond to the following question: "Do you feel that your child's attitude toward school in general"

"has improved"  
 "has remained unchanged"  
 "has become worse"  
 "uncertain"

A majority 64.43 percent of parents responded that their child's attitude toward school in general, has remained unchanged. The other responses to this question included 17.45 percent who felt that the child's attitude had improved, 13.2 percent felt that their child's attitude had become worse, while 4.89 percent of the parents were uncertain about their child's attitude toward school.

Another question asked: "Because of the year-round plan, our vacation plans"

"were eliminated"  
 "were changed to the point were disappointed"  
 "were altered, but everything worked out fine"  
 "did not have to changed at all"  
 "uncertain"

Responses to this question as expressed by parents concerning vacation plans were that 8.71 percent of the vacations were eliminated; 12.99 percent were changed to the point of being disappointed; 25.12 percent were altered, but everything worked out; 58.08 percent of parents did not have to change their vacation plans; and 3.07 percent of the parents were uncertain about change, if any, in their vacation plans.

A second questionnaire dealing with parental attitudes was distributed on March 2, 1970. At this time, eight hundred seventy-



eight copies of the questionnaire were sent home with five hundred-ninety being returned to school. The percentage of return for March, 1970 was sixty-seven and one-tenth. Appendix I contains a summary of the questionnaire for parents which was distributed in March, 1970.

The second parent questionnaire again asked the question:  
 "Do you feel that your child's attitude toward school in general"

"has improved"  
 "remained unchanged"  
 "become worse"  
 "no opinion"

The majority of parents, 55.50 percent expressed the opinion that their child's attitude had remained unchanged. Further response to the questionnaire revealed that 23.2 percent felt that their child's attitude had improved, 12.70 percent believed the child's attitude toward school had become worse, and 6.70 percent of the parents expressed a no opinion attitude (Francis Howell School District, 1972).

Parents were asked in the questionnaire of March, 1970 if  
 "after experiencing the year-round plan would you"

"prefer to remain on the year-round plan"  
 "prefer to go on split sessions at the junior/senior high campus"  
 "prefer to increase property taxes to a level which provided enough building for nine months school throughout the entire district"  
 "other"  
 "no opinion"

The response to this question was that 61.0 percent of the parents preferred to remain on the year-round plan, 5.0 percent preferred to go on split sessions at the junior/senior high campus, 16.0 percent preferred to increase property taxes to a level which provided enough

building for the nine month school year, 5.0 percent expressed some other alternative and 5.5 percent did not express an opinion (Francis Howell School District, 1972).

A third parent questionnaire was distributed in May, 1971. There were nine hundred-one questionnaires distributed and of this number, four hundred seventy-eight were returned for a fifty-three percent return. Appendix K contains a summary of the questionnaire for parents which was distributed in May, 1971.

The third questionnaire asked the parents: "In your opinion, has the year-round plan functioned better in 1970-71 than in 1969-70."

"yes"

"no"

"no opinion"

Responses to this question were that 40.9 percent of the parents stated that the year-round plan had functioned better in 1970-71 than in 1969-70, 9.9 percent stated that it did not function better, while 49.1 percent stated that they had no opinion (Francis Howell School District, 1972).

The third parent questionnaire also asked, "if the money were available to build the necessary buildings, would you desire to return to the nine month schedule." Parent response to this question was that 35 percent of the parents preferred to return to the nine month schedule, 55.2 percent did not want to return to the traditional nine month schedule and 9.6 percent of the parents did not express an opinion (Francis Howell School District, 1972).

TEACHER QUESTIONNAIRE  
BECKY DAVID ELEMENTARY SCHOOL

A questionnaire was also distributed to the teachers of Becky David Elementary School in October, 1969. A total of forty-eight questionnaires were distributed to the faculty with forty-seven questionnaires being returned. The questionnaire revealed that the majority of teachers felt that the classroom attitude of students toward school remained unchanged after the year-round program was begun. The teachers reported that many of the students, during the first year of the year-round school operation of Becky David Elementary School, had difficulty adjusting to different teachers. Most of the students, when they returned from their fifteen school day vacation, were scheduled with a new teacher and this condition apparently caused some confusion. When the teachers returned from their vacations if they chose a nine month teaching contract, they, too, had a hard time adjusting to different classrooms and student groups.

Many of the teachers, according to the questionnaire, did experience a hardship with the year-round school plan. One of the most frequent hardships encountered by the teachers was the problem of being required to return during their vacations for teachers' meetings. Several of the teachers had also experienced difficulty in going to school for in-service classes. Teachers also experienced difficulties with overcrowded classrooms, especially during the first year of the year-round school operation. The administration indicated difficulty with balancing enrollment. The major problem noted with grouping was that too many levels were being placed in each individual classroom.

The teachers did feel that there were many advantages to the year-round school program as identified from the teacher questionnaire conducted in October, 1969. Some of the advantages noted by teachers in their response to the questionnaire included:

- . Pupils forget less during the shorter vacation periods.
- . From a teacher's point of view, the plan is splendid.
- . After a break, students and teachers come back with a refreshed feeling to get in and work harder.
- . For the teacher, the three weeks gives them a chance to catch up on work, renew lesson plans, get fresh ideas, and for a new teacher, a chance to make bulletin boards.
- . Three week vacations cut down on review.
- . This plan seems to be built to meet each child's physical, emotional, social and academic needs. It is flexible and allows constant evaluation.
- . Gives teachers full employment year-round, if desired.
- . Makes use of school buildings year-round.

Appendix L contains the teacher questionnaire and summary which was administered to the faculty of Becky David Elementary School in October, 1969.

#### STAFF EXPENDITURES FAIRVIEW ELEMENTARY

The size of the staff at Fairview Elementary School in Mora, Minnesota has remained constant over the five year period beginning in 1968-69 to 1972-73 with thirty-one teachers being employed each school year. The pupil-teacher ratio at Fairview Elementary has increased from 16.90 during the school year of 1968-69 to 21.50 during

the 1972-73 school year. This represents an increase in students per teacher of 4.60 over a five year period. Even though the number of staff has remained constant over the five year period, the expenditures have increased from \$280,000.00 during the 1968-69 school year to \$341,700.00 during the school year of 1972-73. This represents an increase of \$61,700.00 over the five year period. Table 18 illustrates the number of positions used by Fairview Elementary School in determining their pupil-teacher ratio. It is interesting to note that in determining pupil-teacher ratio, the Fairview Elementary School includes aides in calculating their pupil-teacher ratio. Table 18 also illustrates the number of students, number of teachers and the cost of the staff for Fairview Elementary School.

#### EXPENDITURES FOR INSTRUCTIONAL MATERIALS FAIRVIEW ELEMENTARY

Mr. Richard Smith, Project Director of the Mora Public Year-Round Schools, reported data concerning expenditures for curriculum development and instructional materials. During the 1968-69 school year, the Mora Public School District spent a total of \$9,000.00 for instructional materials. During the 1972-73 school year, a total of \$12,000.00 was spent for instructional materials. This represents an increase of \$3,000.00 spent for instructional materials over a five year period. Table 19 illustrates the amount of money spent by Fairview Elementary School for instructional materials over a five year period. Even with this increase in total expenditures for instructional materials each year, the expenditures for each student

Table 18  
POSITIONS INCLUDED IN DETERMINING PUPIL TEACHER  
RATIO AT FAIRVIEW ELEMENTARY SCHOOL

School year	1968-69	1969-70	1970-71	1971-72	1972-73
Regular class-room teachers	30	30	30	30	30
Principals	1	1	1	1	1
Special class-room teachers	1	1	1	1	1
Librarians	1	1	1	1	1
Specialists	1	2	2.5	3.5	3.5
Aides	0	0	1	1	1.5
Vocal and instrumental music	1.5	1.5	1.5	1.5	1.5
Totals	35.50	36.50	38	39	39.50
Pupil teacher ratio	16.90	17.90	22.10	21.40	21.50
Number of students	599	653	840	833	851
Cost of staff	\$280,000	\$291,700	\$306,400	\$325,400	\$341,700

(Mora Public School District Records, 1968-1973)

were not constant. The expenditures for instructional materials, as illustrated by Table 19, ranged from a high of \$15.02 during the 1968-69 school year to a low of \$11.30 during the 1970-71 school year.

EXPENDITURES FOR INSTRUCTIONAL EQUIPMENT  
FAIRVIEW ELEMENTARY SCHOOL

Financial records of the expenditures of Fairview Elementary School of Mora, Minnesota for instructional equipment were available. Table 20 illustrates the expenditures of Fairview Elementary School for this equipment. Financial figures in this table illustrates that the administration of Fairview Elementary School has increased their expenditures for instructional equipment each year since their year-round school program has been in operation. Data in this table illustrates that Fairview Elementary School spent \$1.34 for instructional equipment for each student during the 1968-69 school year. The amount continued to increase during each year to a high of \$2.35 during the 1972-73 school year.

Financial records regarding the expenditures for curriculum development were also provided for Fairview Elementary School. These records revealed that the district spent a total of \$5,000.00 for curriculum development during the 1970-71 school year (before the year-round schedule was begun at Fairview Elementary School). This represented an expenditure of \$5.95 for each child enrolled. During the first year of the year-round school operation at Fairview Elementary School a total of \$15,800.00 was spent for curriculum development. This figure, \$15,800.00 represented an expenditure of \$18.96 for each

Table 19  
EXPENDITURES FOR INSTRUCTIONAL  
MATERIALS FOR FAIRVIEW ELEMENTARY  
(1968-1973)

Year	1968-69	1969-70	1970-71	1971-72	1972-73
Expenditure	\$9,000.00	\$9,300.00	\$9,500.00	\$10,000.00	\$12,000.00
Number of students	599	653	840	833	851
Expenditures per student	\$15.02	\$14.24	\$11.30	\$12.00	\$14.10

(Mora Public School District Records, 1968-1973)



Table 20  
EXPENDITURES FOR INSTRUCTIONAL EQUIPMENT  
FAIRVIEW ELEMENTARY SCHOOL  
(1968-1973)

	1968-69	1969-70	1970-71	1971-72	1972-73
Expenditure	\$800.00	\$1,200.00	\$1,700.00	\$1,800.00	\$2,000.00
Number of students	599	653	840	833	851
Expenditure per student	\$1.34	\$1.84	\$2.02	\$2.16	\$2.35

(Mora Public School District Records, 1968-1973)

child enrolled. Table 21 illustrates the financial expenditures for curriculum development at Fairview Elementary School

Although financial records of the total school district expenditures for education do not reflect the impact of programs conducted in the district's schools, it is interesting to look at the expenditure patterns in a school district to provide a perspective relating to districts growth and financing.

#### DISTRICT BUDGET MORA PUBLIC SCHOOLS

The total district budget of the Mora Public Schools illustrates the substantial increase in the districts' expenditures for education. During the 1968-69 school year, the Mora Public Schools had a total school district budget of \$960,525.00. This figure had increased by the 1972-73 school year to \$1,804,835.00. This was an increase of \$844,310.00 over a five year period. Table 22 illustrates the school budget of the Mora Public Schools for three years prior to the implementation of the year-round schedule.

#### STUDENT ATTENDANCE MORA PUBLIC SCHOOLS

School officials were concerned about student attendance, especially in the year-round program at Fairview Elementary School. Student attendance decreased (.30) percent during the first year (1971-72) of their year-round school operation. During the second year of operation (1972-73), there was an increase of (1.30) percent in student attendance. Table 23 illustrates the average daily attend-

Table 21  
FINANCIAL EXPENDITURES FOR CURRICULUM DEVELOPMENT  
FAIRVIEW ELEMENTARY SCHOOL  
(1968-1973)

Year	1968-69	1969-70	1970-71	1971-72	1972-73
Expenditure	0	0	\$5,000.00	\$15,800.00	\$15,000.00
Number of students	599	653	840	833	851
Expenditure per student	0	0	\$5.95	\$18.96	\$17.62

(Mora Public School District Records, 1968-1973)

Table 22  
 SCHOOL BUDGET OF THE MORA PUBLIC SCHOOLS  
 PRIOR TO THE IMPLEMENTATION OF THE YEAR-  
 ROUND SCHEDULE AND ONE YEAR PRECEDING THE  
 IMPLEMENTATION OF THE YEAR-ROUND SCHEDULE

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Year	1968-69	1969-70	1970-71	1971-72	1972-73
Expenditure	\$960,525	\$1,011,525	\$1,011,525	\$1,309,400	\$1,804,835

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(Mora Public School District Records, 1968-1973)

Table 23  
STUDENT ATTENDANCE  
FAIRVIEW ELEMENTARY SCHOOL

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	1968-69	1969-70	1970-71	1971-72	1972-73
Average daily attendance	574	626	805	796	824
Number of students	599	653	840	833	851
Percentage of attendance	95.80	95.90	95.80	95.50	96.80

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(Mora Public School District Records, 1968-1973)

ance, the number of students and the percentage of student attendance from Fairview Elementary School.

PARENT QUESTIONNAIRE  
FAIRVIEW ELEMENTARY SCHOOL

The Mora Public School District was concerned about the publicity which their year-round school program was receiving. The district was especially concerned with their effort to inform the public about the year-round school program which was in operation at Fairview Elementary School.

The Mora Public Schools conducted a parent questionnaire in December, 1971. The purpose of the questionnaire was to determine the attitude of parents toward the 45-15 year-round program. There were five hundred-nine questionnaires distributed and three hundred thirty-one were returned. This figure represented a sixty-five percent return of questionnaires. It would appear, from the parent questionnaire, that many of the parents expressed a favorable attitude toward the concept of year-round schools. Parents were asked: "In general, what is your attitude toward the 45-15 plan as it is currently operating in Mora" (Independent School District No. 332, Mora, Minnesota 1972a:483). The majority of parents surveyed answered this question as either being favorable or very favorable toward the 45-15 plan of Fairview Elementary School. The results as expressed by parents included (21) percent of the parents being very favorable, (46) percent of the parents being favorable, while (16) percent were unfavorable, (11) percent as having a very unfavorable attitude toward the year-

round school program, with (5) percent as having no opinion. There was (1) percent of the parents who did not respond to this question (Independent School District No. 332, Mora, Minnesota, 1972a).

In another attempt to discover the predisposition of parents support for the program, the following question was asked: "From the time you first heard about the 45-15 year-round plan, has your attitude toward the plan: Become more favorable, remained about the same or become less favorable" (Independent School District No. 332, Mora, Minnesota, 1972a:483). The parent response to this question was that (31) percent of the attitudes of parents had become more favorable, (53) percent remained about the same and (15) percent of the parents expressed a less favorable attitude toward the year-round school plan. (Independent School District No. 332, Mora, Minnesota, 1972a). Appendix M contains a summary of the survey of parental attitudes as expressed toward the 45-15 year-round school program of Fairview Elementary School.

#### STUDENT QUESTIONNAIRE FAIRVIEW ELEMENTARY SCHOOL

A student questionnaire of the Mora 45-15 year-round school program was conducted in December, 1971 with groups two, three and four and in January, 1972 with group one. The student questionnaire was given to four hundred-fifty third, fourth, fifth and sixth grade students at Fairview Elementary School. Several of the questions contained in the student questionnaire did not concern the Mora 45-15 year-round plan directly. The students' response to the

questionnaire was very favorable toward the Mora year-round school program. Fifty-seven percent of the students stated that they preferred the year-round school plan to the traditional nine month school year. A majority of the students said they preferred having vacations in the fall, winter and spring as well as the summer. When the students were asked if they preferred having school the way it used to be, (20) percent of the students stated they did, (60) percent stated that they did not want to return to the nine month school year and (19) percent of the students were uncertain (Independent School District No. 332, Mora, Minnesota, 1972a). Appendix N contains a summary of the survey of student questionnaires conducted in December, 1971 and January, 1972.

TEACHER QUESTIONNAIRE  
FAIRVIEW ELEMENTARY SCHOOL

The Board of Education of Mora, Minnesota made a survey of teachers attitudes concerning the year-round program which was in operation in their district. The survey revealed that over eighty percent of the teachers liked the year-round program and were happy working in this situation. The majority of teachers felt that there was not a loss of instructional time due to the start of a new 45-15 cycle. The majority of the teachers expressed the opinion that students' retention was less over the long summer of the traditional nine month school year than under the 45-15 year-round school year.

The survey of teachers also revealed that the majority believed that children preferred the year-round schedule to that of the



traditional nine month school year. The teachers and administrators did feel that special education services such as band, vocal music and the reading center were affected negatively by the year-round program. Appendix O contains a summary of the survey of teacher attitudes toward the 45-15 plan in the Mora Public Schools.

#### SUMMARY

In chapter five, data related to the five year study of two schools were presented and discussed. An attempt was made to relate the changes in financial expenditures in such areas as staff costs, curriculum development, expenditures for instructional materials and equipment, and total district expenditures including cost per pupil, to the advent of year-round school scheduling in the districts. In addition to changes in staffing ratios, student attendance and attitudes of teachers, parents and students were presented and discussed where complete and appropriate data were available.

## Chapter 6

### SUMMARY, FINDINGS, CONCLUSIONS AND IMPLICATIONS

#### SUMMARY

The public schools of the United States have been given many responsibilities in providing for the education of the youth and other members of the local community. With the increased pressure for accountability, the knowledge explosion, inflation, technological and societal trends, the shift in population, these responsibilities of public schools will continue to grow and expand. This growth and expansion will vary with each of the public schools in existence today. It is the responsibility of school personnel to develop new educational programs, curriculum materials and school scheduling patterns which will meet the identifiable needs of the local community. New educational programs, curriculum materials and alternate school scheduling patterns have been developed and will continue to be developed by school personnel. The 45-15 year-round scheduling pattern is one of the most popular year-round scheduling patterns being utilized by school districts today. The problem of this study was to identify and describe changes, if any, in the curriculum of reading and/or language arts and arithmetic, staffing patterns, expenditure patterns, financing, attendance, scheduling, reporting methods and attitudes of parents, students and teachers which occurred at Becky David and Fairview Elementary Schools with the implementation of 45-15 year-round scheduling.

The techniques for reporting results of this study consisted of a narrative description of data followed by tables and appropriate appendixes for three years preceding initial implementation and one year following implementation of 45-15 year-round scheduling at the two selected schools. This study should be helpful to school personnel who plan to move to 45-15 year-round scheduling in predicting variables and/or problems with expenditure patterns, budgets, staffing patterns, attendance, curriculum changes and parent, student and teacher attitudes identified in Chapter 1 for study.

#### FINDINGS BECKY DAVID ELEMENTARY

This study has attempted to identify changes in the curriculum areas of language arts and arithmetic, staffing, financing, expenditure patterns, attendance, student scheduling, reporting methods and attitudes of parents, students and teachers which occurred at Becky David Elementary School, St. Charles County, Missouri following implementation of 45-15 year-round scheduling.

The following findings are presented:

- (1) A major change occurred in the placement of students in language arts and arithmetic following the implementation of 45-15 year-round scheduling. The six traditional grades were replaced with fourteen levels of achievement. To assist with the fourteen levels of achievement, a curriculum guide was developed by the administration, teachers, curriculum specialists and central office personnel.

- (2) The staffing pattern of Becky David Elementary School was modified upon the establishment of 45-15 year-round programming. This modification in staffing, was due partially to the development and inauguration of the continuous progress curriculum. Teachers were assigned to teach one or more levels instead of a grade assignment. In some levels and/or subject areas, team teaching occurred. The staffing pattern was also modified due to the type of calendar which was initiated. Before the Francis Howell School District adopted the 45-15 year-round schedule, the district was operating on a traditional one hundred eighty day school year. After the 45-15 year-round schedule was adopted, teachers were allowed to select between the traditional teaching contract or a two hundred twenty-five teaching day contract. The increase in students also caused a modification in the staffing pattern of Becky David Elementary School. With this modification in the staffing pattern of Becky David Elementary, teachers were assigned fewer levels to teach. An additional principal was employed during the 1968-69 school year, which permitted both the primary (levels 1-9) and the intermediate (levels 9-14) to have principals.
- (3) As anticipated, with the increase in student enrollment, salary increases for staff, inflation and the expanded forty-five school day operation, the expenditures for staff

at Becky David Elementary School increased. Expenditures for curriculum development, instructional materials and equipment, if any, could not be determined from the district's school budget. Also, the expenditures, if any, could not be determined for in-service education for teachers in the 45-15 year-round school setting.

- (4) The pupil/teacher ratio at Becky David Elementary School decreased after 45-15 year-round scheduling was begun. With this decrease in pupil/teacher ratio, additional expenditures were necessary to cover the cost of additional teachers, which were required to reduce the pupil/teacher ratio. Additional expenditures were also necessary to cover the salary of a second principal.
- (5) One major discernable change occurred in the financing of operational programs as a result of the 45-15 year-round schedule. This change pertained to the full utilization of available space. With the complete use of available space on a year-round basis, the Francis Howell School District was not required to construct auxiliary classrooms.
- (6) Scheduling was transformed as an outcome of 45-15 year-round programming for both the primary and intermediate levels of language arts. A block scheduling pattern was developed for the language arts curriculum. A three hour forty-five minute time period was devoted each day in the

primary levels for language arts. In the intermediate levels, a time period of three hours five minutes was scheduled for language arts. The scheduling pattern for arithmetic was not altered after implementation of 45-15 year-round scheduling.

- (7) The percent of attendance of students from Becky David Elementary School remained stable over the five year period of this study. The percentage of student attendance ranged from a high of 96.03% during a two year period of 1967-69 to a low of 93.77% during the school year 1969-70. It would appear that family vacation plans were scheduled around the 45-15 year-round program and did not alter attendance. It would also appear that family activities could be scheduled around the year-round program and did not vastly influence student attendance.
- (8) The reporting method used by the elementary faculty to report student progress changed after 45-15 year-round scheduling was put into effect. The reporting procedure was organized around the continuous progress curriculum and the four 45-15 attendance cycles. There were four formal student reporting periods. The first reporting period consisted of a parent conference with each student's language arts teacher. Provisions were made for additional parent conferences whenever a parent or teacher requested a conference. After the initial reporting period, a report

card was sent home which contained data about the student's progress in language arts, math, social studies and other curriculum areas.

- (9) Three questionnaires were distributed to the parents of Becky David Elementary School. A questionnaire was also distributed to the teachers of Becky David Elementary School. The majority of parents, students and teachers expressed a favorable attitude toward the 45-15 year-round schedule. It appeared that parent and student support of the 45-15 year-round schedule increased each year of the year-round operation. Support also increased for the fifteen school day vacation over the traditional long summer vacation. It would also appear that parents, students, and teachers believed the year-round school program functioned better each year the district continued to operate on this schedule.

#### FINDINGS FAIRVIEW ELEMENTARY

This study has focused upon changes in the curriculum of reading and arithmetic, financing, expenditures patterns, reporting methods, staffing and attitudes of parents, students and teachers which occurred at Fairview Elementary School, Mora, Minnesota.

The following findings are presented:

- (1) Curriculum changes in reading and arithmetic followed the decision to place Fairview Elementary School on a 45-15 year-round schedule. Curriculum guides were developed

for reading and arithmetic by teachers, working with a curriculum consultant for Fairview Elementary School.

Three writing teams were selected to write the curriculum guides based upon a graded self contained classroom situation. Detailed curriculum guides were written and developed for all curriculum areas.

- (2) The basic staffing pattern of Fairview Elementary School was not altered after the 45-15 year-round schedule was begun. The faculty and administration continued to utilize a self-contained classroom situation. Even though there was an increase of two hundred fifty-two students over the five year period of this study, the number of classroom teachers remained constant. There was an increase in the use of specialists and aides after the year-round schedule was inaugurated. This resulted in the employment of four additional professional personnel.
- (3) Since the number of classroom teachers remained constant and there was an increase of two hundred fifty-two students from the 1968-69 school year to 1972-73 school year, Fairview Elementary School experienced an increase in its pupil/teacher ratio. There was an increase of 4.60 students per teacher during the five year period of this study. The pupil/teacher ratio increased each year that the district operated on a year-round school schedule. It would appear that moving to a year-round school schedule has changed the



pupil/teacher ratio of Fairview Elementary School.

- (4) Due to the increase in student enrollment at Fairview Elementary School, inflation, salary increases and the additional forty-five school day operation, the expenditure for staff increased. The total expenditures for instructional materials, instructional equipment, curriculum development and total school budget increased each year of the year-round school operation for the five year period of this study. Although there was an overall increase in expenditures in these areas, the expenditures per pupil did not necessarily reflect an increase each year. The increase in student enrollment in some instances decreased the per pupil expenditures in the above areas.
- (5) One major discernible change occurred in the financing of operational programs as a result of implementation of the 45-15 year-round schedule. This change in school financing related to the full utilization of available space on a year-round basis. The public was not required to finance the building of additional elementary classrooms as a result of 45-15 year-round programming.
- (6) Student scheduling was not modified as a result of the 45-15 year-round schedule, other than being placed on four forty-five day attendance periods. Students were scheduled to attend school for one hundred eighty school days.
- (7) Student attendance at Fairview Elementary School remained

stable for three years preceding initial implementation and one year following the implementation of the 45-15 year-round schedule. The percentage of student attendance ranged from a high of 96.80 during the 1972-73 school year to a low of 95.50 during the 1971-72 school year. It would also appear, that in relationship to attendance, that the year-round schedule did not hinder the vacation schedules of families who had children enrolled in the 45-15 year-round program of Fairview Elementary School.

- (8) Several changes occurred in the student reporting procedure used by the faculty of Fairview Elementary School. One major change was in the number of reporting periods. After the year-round schedule was implemented, students received their report cards four times each year. The student report cards were also changed to correspond to the curriculum guides which were developed for each subject area. The report card of the 45-15 year-round school schedule was changed to include the marking system, the key-order of reading and a place for recording additional information of the year-round curriculum.
- (9) A questionnaire was distributed to the Fairview Elementary School parents in December, 1971. A questionnaire was also distributed to the teachers of Fairview Elementary School. It would appear from the parent questionnaire, that many of the parents expressed a favorable attitude toward the

concept of year-round schools. It would also appear that parents' and teachers' support of the 45-15 year-round school operation increased with each year of the year-round school program. According to the teachers' questionnaire, the majority expressed a favorable attitude toward the year-round school schedule of Fairview Elementary School.

#### DISCUSSION OF FINDINGS

The proponents of year-round education in the United States have expressed many positive benefits which could be derived from implementation of year-round schools. Given the study of two elementary schools which have operated on a 45-15 year-round schedule over a period of time, the original positive benefits, as stated in the review of the literature, did not always hold true in this study.

It would appear that additional time was not provided in the 45-15 year-round school settings of Fairview or Becky David Elementary Schools to teach the constant increase in the total body of knowledge. The 45-15 year-round school calendar as utilized by Fairview and Becky David Elementary Schools did not provide for additional days for classroom instruction. The two elementary schools continued to utilize a one hundred eighty day school attendance calendar after implementation of 45-15 year-round scheduling.

It would appear that better qualified teachers were not attracted to teach at Becky David or Fairview Elementary Schools after 45-15 year-

round scheduling was begun. The year-round schedule did provide for teachers, who chose to teach an extra forty-five school days, an increased salary.

After Becky David and Fairview Elementary Schools adopted the 45-15 year-round schedule, additional classroom space became available. This additional classroom space was made available because of the utilization of all school facilities on a year-round basis. By moving to a year-round schedule, both elementary schools were able to utilize all library materials, audio visual equipment, textbooks and school buses on a year-round basis. Additional expenditures were not required for the construction of additional classrooms because of the full utilization of available space on a year-round basis.

It would appear that the 45-15 year-round schedule did not provide administrators and school personnel with more scheduling flexibility.

#### CONCLUSIONS

The following conclusions are presented:

- (1) It is probable that curriculum changes will occur in schools which move to 45-15 year-round scheduling.
- (2) Staffing patterns will be modified either through changes brought about by curriculum revision or changed contractual agreements in most schools which implement 45-15 year-round schools.
- (3) Changes in expenditure patterns including: staffing,

in-service for teachers, curriculum development, instructional materials and equipment costs are a predictable outcome of a districts decision to implement 45-15 year-round scheduling.

- (4) Although changes in pupil/teacher ratios are predictable - the direction of the change is more likely a function of changing enrollments and other factors than the decision to implement a 45-15 year-round school plan.
- (5) Changes will occur in the financing of operational programs due to modifications in staffing, use of buildings and other related factors.
- (6) Scheduling changes are predicted as a function of related curriculum changes and calendar changes associated with the implementation of 45-15 year-round scheduling.
- (7) It is likely that reporting methods to parents will change due to new curriculum and the elimination of same day school ending or irregular days of enrollment for the various groups of students.
- (8) There is no evidence that student daily attendance is affected by a decision to implement 45-15 year-round scheduling.
- (9) It appears that student, teacher, and parent attitudes will remain in a constant state of change through implementation of a program of 45-15 year-round schools.
- (10) School facilities will accommodate increased numbers of

students with the implementation of a 45-15 year-round schedule.

### IMPLICATIONS

The conclusions drawn and discussion of these conclusions have certain implications for research.

This study has implications for school districts which plan to implement year-round school programming in the future. It is recognized that this study contained limitations of size and other factors. However, on the basis of data presented, the implications shown below concerning 45-15 year-round education appear to be valid.

- (1) Further research is needed concerning expenditures for staffing.
- (2) Further research is needed concerning expenditures for curriculum development, in-service education, instructional materials and equipment.
- (3) Further research is needed concerning a more efficient method for accounting for financial expenditures.
- (4) Further research is needed concerning staffing alternatives for Fairview Elementary School.

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## APPENDIX A

# DATA COLLECTION INSTRUMENT

## EXPENDITURES

School		Year				
Becky David	1966-67	1967-68	1968-69	1969-70	1970-71	
Fairview	1968-69	1969-70	1970-71	1971-72	1972-73	
Enrollment	_____	_____	_____	_____	_____	_____
Budgeted for in-service	_____	_____	_____	_____	_____	_____
Expenditure per student	_____	_____	_____	_____	_____	_____
Expenditure for curriculum and in- structional materials	_____	_____	_____	_____	_____	_____
Expenditure for curriculum and in- structional equipment	_____	_____	_____	_____	_____	_____
Expenditure Personnel	_____	_____	_____	_____	_____	_____
Expenditure curriculum develop- ment	_____	_____	_____	_____	_____	_____
Budget	_____	_____	_____	_____	_____	_____

## POSITIONS INCLUDED IN DETERMINING PUPIL TEACHER RATIO

Regular classroom teachers	_____	_____	_____	_____	_____
Special classroom teachers	_____	_____	_____	_____	_____

<u>School</u>		<u>Year</u>				
Becky David		1966-67	1967-68	1968-69	1969-70	1970-71
Fairview		1968-69	1969-70	1970-71	1971-72	1972-73
Principal(s)		_____	_____	_____	_____	_____
Assistant Principal(s)		_____	_____	_____	_____	_____
Librarian(s)		_____	_____	_____	_____	_____
Specialist		_____	_____	_____	_____	_____
Central Office personnel		_____	_____	_____	_____	_____
Aides		_____	_____	_____	_____	_____
Other(s)		_____	_____	_____	_____	_____

PUPIL TEACHER RATIO AND COST OF STAFF

Pupil teacher ratio	_____	_____	_____	_____	_____
Number of students	_____	_____	_____	_____	_____
Number of teachers	_____	_____	_____	_____	_____
Cost of staff	_____	_____	_____	_____	_____

AVERAGE DAILY ATTENDANCE

Average daily attendance	_____	_____	_____	_____	_____
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## APPENDIX B

## DATA AND MATERIAL TO BE ANALYZED

### I. Curriculum Design

#### A. Reading

1. Skills
2. Objectives
3. Prescribed activities
4. Resource material
5. Suggested activities
6. Comprehension
7. Reporting methods
  - a. Data contained
  - b. Time element

#### B. Arithmetic

1. Basic skills
2. Objectives
3. Concepts
4. Prescribed activities
5. References
6. Enrichment activities
7. Supplementary materials
8. Comprehension
9. Reporting methods
10. Vocabulary
11. Work habits

## II. Organizational Structure

- A. Continuous progress
- B. Self contained

## III. Schedule

- A. Arithmetic
- B. Reading

## IV. Expenditures

- A. Staffing
- B. In-service
- C. Curriculum development
- D. Curriculum and instructional equipment
- E. Curriculum and instructional materials

## V. Student Attendance

## VI. Attitudes

- A. Parents
- B. Students
- C. Teachers



## APPENDIX C

LANGUAGE ARTS REPORTING INSTRUMENT  
BECKY DAVID ELEMENTARY

	1	2	3	4	5
I. Vocabulary	_____	_____	_____	_____	_____
A. Word meaning	_____	_____	_____	_____	_____
B. Word analysis	_____	_____	_____	_____	_____
C. Word recognition	_____	_____	_____	_____	_____
II. Comprehension	_____	_____	_____	_____	_____
A. Main idea	_____	_____	_____	_____	_____
B. Facts	_____	_____	_____	_____	_____
C. Sequence	_____	_____	_____	_____	_____
III. Communication	_____	_____	_____	_____	_____
A. Speaks well	_____	_____	_____	_____	_____
B. Writes creatively	_____	_____	_____	_____	_____
C. Penmanship	_____	_____	_____	_____	_____
D. Spells assigned words	_____	_____	_____	_____	_____
E. Applies spelling skills	_____	_____	_____	_____	_____
F. Grammar and punctuation	_____	_____	_____	_____	_____
IV. Reference	_____	_____	_____	_____	_____
V. Attitudes	_____	_____	_____	_____	_____
A. Work	_____	_____	_____	_____	_____
B. Social	_____	_____	_____	_____	_____
VI. Number of book reports	_____	_____	_____	_____	_____

## APPENDIX D

ARITHMETIC REPORTING INSTRUMENT  
BECKY DAVID ELEMENTARY SCHOOL

	1	2	3	4	5
I. Vocabulary	_____	_____	_____	_____	_____
II. Numeration system	_____	_____	_____	_____	_____
A. Recognition	_____	_____	_____	_____	_____
B. Sequence	_____	_____	_____	_____	_____
C. Patterns	_____	_____	_____	_____	_____
D. Place value	_____	_____	_____	_____	_____
E. Fractions	_____	_____	_____	_____	_____
III. Basic facts	_____	_____	_____	_____	_____
A. Addition	_____	_____	_____	_____	_____
B. Subtraction	_____	_____	_____	_____	_____
C. Multiplication	_____	_____	_____	_____	_____
D. Division	_____	_____	_____	_____	_____
IV. Principles of operations	_____	_____	_____	_____	_____
A. Commutative law of addition	_____	_____	_____	_____	_____
B. Associative law of addition	_____	_____	_____	_____	_____
C. Commutative law of multiplication	_____	_____	_____	_____	_____
D. Associative law of multiplication	_____	_____	_____	_____	_____
E. Distributive law of multiplication	_____	_____	_____	_____	_____

	1	2	3	4	5
V. Measurement	_____	_____	_____	_____	_____
A. Calendar	_____	_____	_____	_____	_____
VI. Work habits	_____	_____	_____	_____	_____
A. Listens	_____	_____	_____	_____	_____
B. Follows directions	_____	_____	_____	_____	_____
C. Completes work	_____	_____	_____	_____	_____
D. Neatness	_____	_____	_____	_____	_____
E. Uses time wisely	_____	_____	_____	_____	_____
F. Participates in group discussion	_____	_____	_____	_____	_____
G. Reads for enjoyment	_____	_____	_____	_____	_____

## APPENDIX E

PRIMARY READING REPORT CARD  
FAIRVIEW ELEMENTARY SCHOOL

Periods	1	2	3	4	Final
Letter grade	_____	_____	_____	_____	_____
Quick recognition of simple sight words	_____	_____	_____	_____	_____
Knows other basic vocabulary	_____	_____	_____	_____	_____
Reads well orally	_____	_____	_____	_____	_____
Understands what he reads	_____	_____	_____	_____	_____
Knows and applies phonics skills	_____	_____	_____	_____	_____
Understands and completes seat work	_____	_____	_____	_____	_____

## APPENDIX F



PRIMARY ARITHMETIC REPORT CARD  
FAIRVIEW ELEMENTARY SCHOOL

Period	1	2	3	4	Final
Letter grade	_____	_____	_____	_____	_____
Knows numbers	_____	_____	_____	_____	_____
Applies arithmetic skills to problem solving	_____	_____	_____	_____	_____
Knows addition and subtraction combinations	_____	_____	_____	_____	_____

## APPENDIX G

INTERMEDIATE LEVEL READING REPORT  
FAIRVIEW ELEMENTARY SCHOOL

Period	1	2	3	4	Final
Reading level	_____	_____	_____	_____	_____
Knows basic vocabulary	_____	_____	_____	_____	_____
Reads well orally	_____	_____	_____	_____	_____
Understands what he reads	_____	_____	_____	_____	_____
Knows and applies phonics skills	_____	_____	_____	_____	_____
Understands and completes seat work	_____	_____	_____	_____	_____

## APPENDIX H

INTERMEDIATE ARITHMETIC REPORT CARD  
FAIRVIEW ELEMENTARY SCHOOL

Period	1	2	3	4	Final
Knows fundamental process and concepts	_____	_____	_____	_____	_____
Works with accuracy	_____	_____	_____	_____	_____
Reasons well in solving problems	_____	_____	_____	_____	_____
Knows number facts	_____	_____	_____	_____	_____

## APPENDIX I

QUESTIONNAIRE FOR PARENTS  
SEPTEMBER, 1969

1. Concerning the children's attitude toward the year-round school: Our child has preferred the 9 week - 3 week plan over the traditional nine month year, 23.96%. He/She has expressed that either way is fine with them, 13.14%. He/She has expressed little or no opinion either for or against the year-round plan, 28.61%. He/She has stated that he/she would prefer the nine month year, 29.45% Uncertain, 4.82%.
2. Do you feel that your child's attitude toward school in general: Has improved, 17.45%; has remained unchanged, 64.43%; has become worse, 13.2%; uncertain, 4.89%.
3. Do you believe that the year-round plan has hindered or helped learning? This question is stated poorly and was misunderstood by many parents.
4. What has been the relationship between your elementary youngsters and the junior and senior high youngsters? Elementary children are envious of junior-senior high students, 21.21%; junior-senior high students seem envious of elementary children, 5.05%; uncertain, 73.73%.
5. Because of the year-round plan, our vacation plans: Were eliminated, 8.71%; were changed to the point we were disappointed, 12.99%; were altered, but everything worked out fine, 25.12%; did not have to be changed at all, 58.08%; uncertain, 3.07%.
6. Because of the year-round plan our usual summer activities (baseball, swimming, camping, etc); Were hindered severely, 11.92%; were hindered moderately, 28.96%; were hindered very little, 56.38%; uncertain, 2.72%.
7. What, in your opinion, has been the attitude of school officials toward vacations and other summer activities? Very accommodating, 11.92%; cooperative, 37.90%; begrudging cooperative, 1.97%; uncooperative, 1.04%; antagonistic, 0.71%; uncertain, 46.44%.
8. What, in your opinion, has been the attitude of teachers toward vacations and other summer activities? Very accommodating, 13.28%, cooperative, 34.96%; begrudgingly cooperative, 1.57%; uncooperative, 0.96%; antagonistic, 1.39%; uncertain, 48.07%.
9. Do you believe that the weather has hindered your child's ability to learn satisfactorily? Yes, 30.96%; no, 59.38%; uncertain, 8.03%.

10. Do you feel that hot weather has been the main difficulty of the year-round plan? Yes, 49.40%; no, 42.56%; uncertain, 8.03%.
11. Do you feel that the year-round plan should continue if air conditioning is not provided? Yes, 48.12%; no, 41.83%; uncertain, 10.03%.
12. Would you be willing to vote for a bond issue which provided air conditioning for Becky David School? Yes, 60.17%; no, 26.31%; uncertain, 13.50%.
13. Has your opinion of the year-round school changed since the questionnaire in the Spring? No, I'm still against it, 23.91%; no, I still think it's a good idea, 42.11%; Yes, I thought it was a good idea and now I'm against it, 3.46%; yes, I was against it, now I think it's a good plan, 12.65%; uncertain, 17.85%.



## APPENDIX J

SECOND QUESTIONNAIRE FOR PARENTS  
SUMMARY  
MARCH, 1970

1. Children's attitude toward year-round school: Our child has preferred the 9 week - 3 week plan over the traditional 9 month year, 33.3%; he/she has expressed that either way is fine with them, 14.2%; he/she has stated that he/she would prefer the 9 month year, 31.5%; he/she has expressed little or no opinion for or against the year-round plan, 22.3%; no opinion, 2.7%.
2. Do you feel that your child's attitude toward school in general? Has improved, 23.2%; remained unchanged, 55.5%; become worse, 12.7%; no opinion, 6.7%.
3. Generally, how do you feel the year-round school has effected your child's learning? Hindered, 14.9%; helped, 25.5%; no noticeable effect, 51.2%; no opinion, 6.2%.
4. What has been the relationship between your elementary children and junior and senior high youngsters: Elementary children seem envious of junior/senior highers, 11.5%; junior/senior highers seem envious of elementary children, 5.9%; no opinion, 19.4%.
5. How do you feel about the shorter 3 week vacation instead of the 3 months summer vacation? Seems desirable, 39.4%; no strong feelings, 23%; undesirable, 32.8%; no opinion, 2.0%.
6. Do you feel that the year-round plan should continue if air conditioning is not provided? Yes, 37.2%; no, 48.4%; no strong feelings, 23%; undesirable, 32.8%; no opinion, 2.0%.
7. In your opinion, changing of teachers each nine weeks has been: Educationally desirable, 22.0%; of no consequence, 19.8%; educationally undesirable, 25.4%; no opinion, 7.6%.
8. Would you be willing to vote for a bond issue for air conditioning Becky David: Yes, 50.0%; no, 29.3%; no opinion, 8.8%; no answer, 11.9%.
9. In your opinion has the change of bus drivers each 9 weeks been: Satisfactory, 32.2%; of no consequence, 32.3%; unsatisfactory, 17.1%; no opinion, 14.0%.
10. After experiencing the year-round plan would you: Prefer to remain on the year-round plan, 61.0%; prefer to go on split sessions at

the junior/senior high campus, 5.0%; prefer to increase property taxes to a level which provide enough building for 9 month school throughout the entire district, 16.0%; other, 5.0%; no opinion, 5.5%.

11. Has your opinion toward the year-round school changed since the last questionnaire in August/September, 1969? No, I's still against it; 21.1%; No, I still think it's a good idea, 44.2%; yes, I thought it was a good idea and now I'm against it, 6.6%; yes, I was against it but now I think it's a good plan, 5.2%; I did not receive an earlier questionnaire but I think the year-round plan is a good idea, 6.2%; I did not receive an earlier questionnaire but I think the year-round plan is a poor plan, 3.0%; no opinion, 6.9%.

## APPENDIX K

THIRD QUESTIONNAIRE FOR PARENTS  
SUMMARY  
MAY, 1971

1. Children's attitude toward year-round school: Our child has preferred the 9 week - 3 week plan over the traditional 9 month year - 40.5%. He/She has expressed that either way is fine with him/her - 10.2%. He/She has stated that he/she preferred the 9 month year - 22.6%. He/She has expressed little or no opinion either for or against the year-round plan - 20.1%. No opinion - 6.3%.
2. Generally how do you feel the year-round plan has affected your child's learning: Hindered, 7.5%. Helped, 37.4%. No noticeable effect 41.9%. No opinion, 13.1%.
3. Do you have youngsters in Junior or Senior High as well as at Becky David: Yes - 40.4%. No - 59.5%.
4. Would you be in favor of extending year-round school to the junior and senior high school? (Answer only if you checked "Yes" on #3.): No - 38.9%. Yes as rapidly as possible - 28.8%. Yes, as need for space dictates - 32.1%.
5. How do you feel about the shorter 3 weeks vacation instead of the 3 months summer vacation: Desirable - 54.3%. No strong feelings - 24.4%. Undesirable - 16.6%. No opinion - 4.5%.
6. Do you feel that it was wise to provide air conditioning for Becky David: Yes - 87.9%. No - 7.1%. No opinion - 4.9%.
7. In your opinion, has the year-round plan functioned better in 1970-71 than in 1969-70: Yes - 40.9%. No - 9.9%. No opinion - 49.1%.
8. After experiencing the year-round plan, would you: Prefer to remain on the year-round plan - 83.9%. Prefer to go split sessions at the junior-senior high campus - 1.6%. Prefer to increase property taxes to a level which you could provide enough buildings for 9 months school throughout the entire district - 10.5%. Other - 3.8%.
9. If the money were available to build the necessary buildings, would you desire to return to the 9 month schedule: Yes - 35%. No - 55.2%. No opinion - 9.6%.

10. Has your opinion toward the year-round plan changed since the last questionnaire in April, 1970: No, I'm still against it - 12.2%. No, I still think it's a good idea - 48.8%. Yes, I thought it was a good idea and now I'M against it - 2.1%. Yes, I was against it, now I think it's a good plan - 4.5%. I did not receive an earlier questionnaire but I think the year-round plan is a good idea - 19.1%. I did not receive an earlier questionnaire but I think the year-round plan is a poor idea - 0.6%. No opinion - 12.4%.

## APPENDIX L

QUESTIONNAIRE FOR TEACHERS  
SUMMARY  
OCTOBER, 1969

1. Do you feel that your classes' attitude toward year-round school in general has: a) Improved - 36.2%; b) Remained unchanged - 59.6%; c) Become worse - 4.2%.
2. How do you believe the year-round plan has affected learning: a) Hindered - 10.6%; b) Helped - 44.7%; c) No change - 26.5%; d) No answer - 17.1%.
3. Do you believe summer heat adversely affected learning: a) Yes - 21.3%; b) - No - 42.5%; c) Uncertain - 21.3%; d) I did not teach in summer - 14.9%.
4. Does it appear to you that students have progressed more rapidly since September 1st than during July and August: a) Yes - 21.3%; b) Uncertain - 21.3%; c) No - 25.5%; d) I did not teach during July and August - 21.3%; e) No answer - 10.6%.
5. Do you believe that the year-round plan has hindered the ungraded school plan? a) Yes - 36.2%; b) No - 36.2%; c) Uncertain - 25.5%; d) No answer - 2.1%.
6. Are you satisfied with your teaching schedule? a) Yes - 74.5%; b) No - 14.9%; c) No answer - 10.6%.
7. Has changing groups of students each nine weeks been educationally: a) advantageous - 21.3%; b) disadvantageous - 14.9%; c) No answer - 63.8%.
8. Would you like to see the year-round plan continue: a) Yes - 74.5%; b) No - 2.1%; c) Uncertain - 19.1%; d) No answer - 4.3%.
9. List the main problems with the year-round plan:
  - a. Returning during teachers' vacations for meetings.
  - b. Difficulty in going to summer school.
  - c. Some cycles overcrowded.
  - d. Difficulty in grouping.
  - e. Too many levels in one classroom.
  - f. Heat.
  - g. Some children have difficult time in adjusting to different teachers.
  - h. Teachers changing to different rooms.



10. List some ways in which the plan might be improved.
  - a. More intensive co-operation among faculty members.
  - b. Conferences twice a year.
  - c. More parent education on the subject.
  - d. Applied district-wide so that Junior-Senior High children won't have different schedules.
  - e. Air conditioning.
  - f. All teachers teach on the 9 week - 3 week method.
  - g. Instead of changing teachers each 9 weeks, keep the same teacher with 9-3 for slower students.
  - h. More information circulated and public relations improved as to information for parents.
  
11. In your opinion, what are the main advantages of the year-round plan?
  - a. Pupils forget less during the shorter vacation periods.
  - b. From a teacher's point of view the plan is splendid. More and different experiences, challenges, and findings.
  - c. After a break, students and teachers come back with a refreshed feeling to get in and work harder.
  - d. For the teacher, the three weeks gives a chance to catch up on work, renew lesson plans, get fresh ideas, and for a new teacher a chance to make bulletin boards.
  - e. Three week vacation cuts down on review.
  - f. This plan seems to be built to meet each child's physical, emotional, social and academic needs. It is flexible and allows constant evaluation.
  - g. Gives teachers full employment year-round.
  - h. Makes use of school buildings year-round.

## APPENDIX M

SURVEY OF PARENTAL ATTITUDES TOWARD THE  
45-15 PLAN IN THE MORA PUBLIC SCHOOLS

1. Please check the grade(s) in which you have children. Kindergarten, First, Second, Third, Fourth, Fifth, Sixth, Junior High, Senior High.
2. In general, what is your attitude toward the 45-15 plan as it is currently operating in Mora? Very favorable, 21%. Favorable, 46%. Unfavorable, 16%. Very unfavorable, 11%. I have no opinion, 5%. 1% did not respond.
3. From the time you first heard about the 45-15 plan, has your attitude toward the plan: Become more favorable, 31%. Remained about the same, 53%. Become less favorable, 15%.
4. Have you discussed the 45-15 plan with any teachers in the Mora Public Schools? Yes, 46%. No, 53%. 1% did not respond.
5. (Please answer the following question only if you answered "Yes" to question number 4). In general, do you think teachers like, or dislike, the 45-15 plan? Teachers like it, 24%. Teachers dislike it, 7%. I don't know, 18%. 50% did not respond.
6. Check the statement below which best reflects the attitude of your oldest child, now in elementary school, toward the 45-15 plan, compared with the traditional nine-month school year. My child prefers the 45-15 plan, 38%. My child prefers the traditional nine-month year, 27%. As far as I know, my child has no preference one way or the other, 34%. 2% did not respond.
7. Since the beginning of the 45-15 plan, has the attitude of your child (children) toward school: Improved, 18%. Remained about the same, 69%. Become worse, 11%. 2% did not respond.
8. Members of the Mora Board of Education have expressed the opinion that there is need for additional classroom space in Mora. Do you agree or disagree with that opinion? Agree, 54%. Disagree, 29%. No opinion, 15%. 1% did not respond.
9. Which of the following methods do you prefer as a way to prevent further overcrowding in the Mora Public Schools? Continuing the 45-15 plan with construction of a small building, 57%. Building enough new school space to operate schools only nine months of the year as we used to, 31%. Morning-afternoon split shift, 3%. 8% did not respond.
10. Place a check beside the following non-school activities in which one or more of your children participate. Scouting, private music

lessons, church activities, recreational activities (swimming, little league, etc), 4-H. Please specify others.

11. If the 45-15 plan has interfered a great deal with your children's participation in any of those activities checked in item 10, draw a circle around it. 92% indicated that 45-15 did not interfere with non-school activities.
12. Generally speaking, have administrators in the Mora Public Schools done their best to keep the 45-15 plan from interfering with non-school activities? Yes, 53%. No, 7%. I don't know, 38%. 2% did not respond.
13. Have you attended a Citizens Committee meeting during the past year? Yes, 32%. No, 65%. 2% did not respond.
14. (Please answer the following question only if you answered "Yes" to question 13). Do you think Citizens Committee meetings are worthwhile or not worthwhile as a way of getting more information about the Mora Public Schools? Worthwhile, 18%. Not worthwhile, 9%. No opinion, 7%. 66% did not respond.
15. Would you approve or disapprove of a plan to bring students who are behind in their school work back to school during part of their fifteen day break for additional help. Approve, 53%. Disapprove, 31%. No opinion, 14%. 1% did not respond.
16. All kindergarten students in the Mora Public Schools are now bussed to Quamba for their classes. In your opinion, how serious are the inconveniences which this causes? Very serious, 8%. Somewhat serious 26%. Not serious, 52%. 15% did not respond.
17. Kindergarten students in the Mora Public Schools now go to school every other day, instead of one-half day every day, as they used to. Do you approve or disapprove of this new kind of schedule for kindergarten students? Approve, 52%. Disapprove, 23%. No opinion, 21%. 4% did not respond.

## APPENDIX N

STUDENT QUESTIONNAIRE  
FAIRVIEW ELEMENTARY SCHOOL

1. I like school: Always, 17%. Most of the time, 50%. About 1/2 of the time, 13%. Once in a while, 18%. Never, 2%.
2. I do good work in school: Always, 4%. Most of the time, 53%. About 1/2 the time, 24%. Once in a while, 17%. Never, 1%.
3. I like school better now with the 45-15 plan than I did before with the regular 9 month school year. Yes, 57%. No, 13%. Not sure, 16%.
4. I like going to school for just 45 days and then having a three week vacation. Yes, 71%. No, 13%. Not sure, 16%.
5. I like having vacations in the fall, winter, and spring, as well as in the summer: Yes, 70%. No, 14%. Not sure, 16%.
6. I think I am doing better in my school work this year than I did last year. Yes, 43%. No, 14%. Not sure, 42%.
7. My parents \_\_\_\_\_ the 45-15 plan. Like, 62%. Do not like, 26%. 12% did not respond.
8. I would rather be in a different group. Yes, 10%. No, 90%.
9. If yes, which group would you prefer. Group A, Group B, Group C, Group D.
10. I missed not having all summer off last summer. Yes, 28%. No, 47%. Not sure, 20%. 5% did not respond.
11. I would prefer having school the way it used to be. Yes, 20%. No, 60%. Not sure, 19%.
12. When I am home on a 15 day break \_\_\_\_\_ of my friends and playmates are still in school. All, 10%. Some, 67%. None, 22%. 1% did not respond.
13. It is hard for me to get back to studying after a 15 day break. Yes, 32%. No, 66%. 2% did not respond.

## APPENDIX O

SURVEY OF TEACHER ATTITUDES TOWARD THE 45-15  
PLAN IN THE MORA PUBLIC SCHOOLS

1. As a teacher, what is your general attitude toward the 45-15 plan as it has been operating in Mora? Very favorable, 32%. Favorable, 48%. Unfavorable, 15%. Very unfavorable, 0%.
2. As you have had more experience with the 45-15 plan, has your attitude toward the plan - Become more favorable, 29%. Become less favorable, 13%. Remained about the same, 55%. No response, 3%.
3. Do you feel that there is a loss of instructional time due to start-up time required at the beginning of each 45-day session? Yes, 29%. No, 68%. No response, 3%.
4. (Answer this question only if you answered "yes" to question #4). In your view, how serious is this loss of instructional time due to start-up time required at the beginning of each 45-day session compared to start-up time required for a traditional nine month school year. 0%, Very serious. Somewhat serious, 19%. Not very serious, 6%. Less serious than with nine month school year, 3%.
5. Looking at a total year, do you think that there is more loss of learning retention under the 45-15 plan with its several short vacations or was there more loss of learning retention under the traditional plan with its single long summer vacations? More retention loss over the several short 15-day breaks of the 45-15 plan, 3%. More retention loss over the one long summer vacation under the traditional nine-month year, 71%. There was about as much retention loss under one plan as the other, 26%.
6. Have you had the experience under the 45-15 plan of having different groups of students on consecutive 45-day sessions? Yes, 71%. No, 26%. No response, 3%.
7. (Answer this question only if you answered "yes" to question #6). Does having different groups of students on consecutive 45-day sessions pose any problems for teachers and students? Yes, 45%. No, 26%.
8. In your view, what is the general attitude of students toward the 45-15 plan? Students prefer the 45-15 plan, 42%. Students prefer the traditional nine-month school year plan, 10%. Students do not prefer either plan over the other, 45%. No response, 3%.
9. As you know, students are now scheduled in such a way that children from the same geographic area go to school together, rather than being mixed with students from throughout the district. Do you



think that this kind of grouping of children by geographic area has any effect on the students and the school? Yes, 45%. No, 29%. I do not know, 26%.

10. Are areas of special educational services such as band, vocal music SLBP, reading center affected by the 45-15 plan? Yes, 48%. No, 39%. I do not know, 13%.
11. Does the shorter school day during the summer have any affect on student learning or conduct? Yes, 32%. No, 52%. Do not know, 16%.
12. In your opinion, have students experienced fatigue during the school day more in one season of the year than the others? Yes, 58%. No, 29%. Do not know, 13%.
13. (Answer only if you answered "yes" to #12). In what season have students experienced the most fatigue during the school day? Fall, 0%. Winter, 6%. Spring, 0%. Summer, 48%.
14. What length was your contract for the 1971-72 school year? (Check one). Less than one quarter, 0%. One quarter, 0%. Two quarters, 0%. Three quarters, 6%. Four quarters, 45%. Five quarters, 48%.
15. How satisfied were you with the length of your contract for 1971-72? Very satisfied, 65%. Satisfied, 32%. Dissatisfied, 3%. Very dissatisfied, 0%.
16. During the past year, have teaching supplies and materials been available when you needed them? Yes, 58%. No, 42%.
17. Have methods of reporting student achievement been satisfactory during the past year? Yes, 74%. No, 26%.
18. With the present reporting system, are we adequately measuring individual student performance? Yes, 65%. No, 3%. I don't know, 32%.
19. Has the information included in student records been sufficient for acquainting the teacher with new groups of students? Yes, 87%. No, 6%. No response, 6%.
20. In your opinion, under the year-round plan have students best mastered the basic subjects? Under the 45-15 plan, 13%. Under the traditional nine-month plan, 16%. Students do as well in one plan as the other, 55%. No response, 16%.
21. Is the per day prorated salary payment a satisfactory method of teacher compensation? Yes, 84%. No, 6%. No response, 10%.

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A STUDY COMPARING THE DEVELOPMENT OF 45-15 YEAR-ROUND SCHOOL  
PROGRAMS AND ATTENDANT CHANGES IN TWO SELECTED SCHOOL DISTRICTS

by

Rollie Ted Phillips

(ABSTRACT)

This study was designed to investigate changes, if any, in the curriculum design of reading and/or language arts and arithmetic, student scheduling, student attendance, staffing patterns, expenditure patterns, reporting procedures and attitudes of parents, students and teachers for three years prior to and one year following implementation of 45-15 year-round programming. A review of the current literature, at that time, revealed that four school districts met the above time criteria. The four school districts were as follows: Francis Howell School District, St. Charles County, Missouri; Mora Public Schools, Mora, Minnesota; Valley View School District, Romeoville, Illinois and the Prince William County Public Schools, Manassas, Virginia. Representatives of the four school districts were then contacted by telephone and by written correspondence as to their (1) willingness to participate and (2) the amount of data available. Only two school districts, Francis Howell and the Mora Public Schools, had sufficient data available to participate. Each school district had one elementary school (grades 1-6) which was operating on a 45-15 year-round schedule. They were the Becky David Elementary School from the Francis Howell

School District and Fairview Elementary School from the Mora Public Schools.

A Data Collection Instrument was developed and mailed to the two selected school districts. In addition to the Data Collection Instrument, telephone conversations and written communication, district evaluation reports were reviewed and curriculum guides for language arts and/or reading and arithmetic were reviewed.

Curriculum guide(s) were developed by both elementary schools. A change in curriculum design occurred when the two schools developed curriculum guide(s) and moved to 45-15 year-round scheduling. The curriculum guide for Becky David Elementary School was designed around a continuous progress concept. Fourteen levels of work for language arts and arithmetic replaced the traditional graded classroom situation. The curriculum guides for reading and arithmetic for Fairview Elementary School were developed around a self contained graded classroom situation. The curriculum guides for reading and arithmetic in each grade did utilize sessions, levels and units. Reporting procedures to parents were modified for the above curriculum areas after 45-15 year-round scheduling was begun.

The pupil/teacher ratio for Becky David Elementary School decreased while the pupil/teacher ratio for Fairview Elementary School increased after 45-15 year-round programming. Both school districts' budgets increased each year after year-round school operations were begun. District expenditures for curriculum development, in-service education for teachers, instructional materials and instructional

equipment were not available for Becky David Elementary School. District expenditures for Fairview Elementary School for instructional equipment and materials and curriculum development were available. The expenditures for instructional materials and equipment and curriculum development increased with 45-15 year-round programming.

A majority of teachers, students and parents of Fairview Elementary School and Becky David Elementary School expressed a favorable attitude toward 45-15 year-round scheduling as determined by appropriate questionnaires. Student attendance remained stable over the five year period of this study.