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Effectiveness of an alternating full-day kindergarten program.

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EFFECTIVENESS OF AN ALTERNATING
FULL-DAY KINDERGARTEN PROGRAM

A Dissertation Presented

by

JOAN E. SCHUMAN

Submitted to the Graduate School of the
University of Massachusetts in partial fulfillment
of the requirements for the degree of

DOCTOR OF EDUCATION

September 1989

SCHOOL OF EDUCATION

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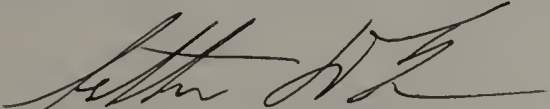
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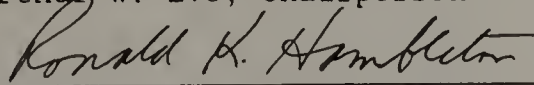
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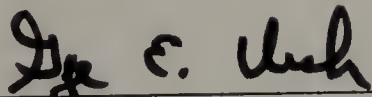
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ACKNOWLEDGMENTS

Many individuals have played a major role in the completion of this dissertation. Many are owed my sincere appreciation and thanks for their help and their involvement in this study. They are:

Arthur Eve, Chairperson of my committee, whose sage advice and friendship kept me on task; Ronald Hambleton, committee member, whose supportive encouragement and assistance helped complete the task; Curt Tausky, committee member, for his constructive advice; The Massachusetts Board of Education, for their willingness to grant the waivers that enabled this study to be implemented, and their enthusiastic support of the project.

Special thanks are owed to my dear friends and colleagues:

Laurie Slobody and Nancy Coville, members of my staff, who earnestly and willingly assisted in conducting this study; Judy Hunt, without whom there would not have been a study and whose indomitable spirit kept us going; Anne Towle, whose enthusiasm and good humor added so much; Eleanor Durkin and Peg Louraine, who typed and retyped drafts, charts and tables with patience and professionalism.

Thanks are also due the principals, teachers, and parents in the participating schools who undertook additional work and extra expense so that this study could be implemented.

ABSTRACT

EFFECTIVENESS OF AN ALTERNATING
FULL-DAY KINDERGARTEN PROGRAM

SEPTEMBER 1989

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This investigation looked at alternative scheduling approaches for kindergarten. Two approaches were studied: the traditional half-day program and an alternating full-day program. The study was carried out in seven Central Massachusetts rural/suburban communities: three schools were control schools operating a traditional half-day program; four schools were the experimental schools operating an alternating full-day program.

The major issue of concern was the benefits and effectiveness on total learning and growth of kindergarten children in an alternating full-day program of 108 days/year, as compared to children in the traditional half-day program of five days per week (180 days/year).

This study also looked at savings in transportation costs, and whether children and schools participating in an alternating full-day program received the following benefits: increased time for readiness activities; more effective and timely special education services; more specialists for library, art, music, and physical education classes;

greater parental support and involvement; less time spent riding the school bus.

Data on these issues were collected through testing, teacher and parent questionnaires, interviews conducted with administrators, teachers, and parents, and review of fiscal and attendance records.

Analysis of the data resulted in the following findings:

- Children in alternating full-day programs showed no less growth in cognitive, psychomotor, affective, and linguistic skills.
- The alternating full-day program was as effective in increasing reading readiness, increasing socialization time, and exposing youngsters to indepth activities and projects.
- There was greater flexibility in scheduling art, music, and physical education specialists in alternating full-day programs.
- There was greater parental involvement and support in alternating full-day programs.
- There was considerable savings in time and money spent on bus transportation for alternating full-day programs.
- Fatigue, retention, and regression were not negative factors in alternating full-day programs.

This study is significant because it shows that alternative forms of scheduling can be used for kindergarten which have no detrimental effects on children, have several benefits, and may be less costly. The findings of this study should allow school districts greater flexibility in their ability to respond to the needs of families in their communities.

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C H A P T E R I

INTRODUCTION

The German educational philosopher, Friedrich Froebel (1782-1852), is generally credited with bringing the notion of kindergarten onto the educational horizon. Influenced by the Swiss educator, Heinrich Pestalozzi (1746-1827), Froebel believed in teaching the whole child and felt that education should develop from real-life experiences, not just from book learning. In 1837, he opened his first kindergarten in Blankenburg, Germany, which utilized methods of representative play and a variety of manipulative materials that allowed children to discover for themselves within the classroom and beyond the classroom through field trips and exploration.

His pupil, Mrs. Carl Schurz, started the first kindergarten for German-speaking children in the United States in 1855 at Watertown, Wisconsin. Two years later, another of Froebel's pupils, Miss Caroline Frankenberg, opened the second private German-speaking kindergarten in Columbus, Ohio. It was not until 1860, in Boston, Massachusetts, that the first private English-speaking kindergarten was founded by Miss Elizabeth Peabody. In 1871, the first public kindergarten was offered to children in St. Louis, Missouri. After this, the kindergarten momentum continued and many cities became active in establishing public kindergartens.

Historically, kindergarten began as a full-day program and most continued to be full-day until World War II. With World War II and the teacher shortage that accompanied that period, kindergarten programs in this country were cut back to half-day so that one teacher

could teach more children. With the exception of Hawaii, which has had all-day kindergarten in all its schools since 1955, states typically offer a variety of kindergarten programs for kindergarten-age children. In fact, as of 1985, only a little more than half the states mandate the provision of kindergarten programs, while only four states (Delaware, Florida, Louisiana, and Kentucky) require children to attend kindergarten.

In Massachusetts, the provision of kindergarten programs by local school districts was not required by the Board of Education until 1968. The uproar over costs, space, and loss of local control caused the Board to delay full implementation of the regulations to September 1, 1973. Yet, even with the passage of the regulations for kindergarten, there was no requirement that children attend kindergarten, nor was there a requirement as to the number of hours they spend in kindergarten each day. Both because of state-aid reimbursement formulas and the need to hold two sessions each day, most kindergarten programs ran for 2-1/2 hours per day. In 1980, the Board of Education revised the regulations which govern the length of the school day and school year in Massachusetts and included kindergarten programs in those regulations.

Background

The School Year and School Day Regulations (603 CMR 27.03) require that kindergarten students attend school for a minimum of 425 hours per year, 180 days per year. Traditionally, school districts have met this requirement by scheduling half-day kindergarten sessions of two-and-a-half hours in duration, often scheduling two such sessions per day -- a morning session and an afternoon session.

With the passage of Proposition 2-1/2 in 1981, school districts began to look for ways in which to cut down expenditures, particularly those over which they might have some control. School transportation was one such cost that, with some rescheduling and redrawing of routes, might render some savings. Rural communities, in particular, began to look at the lengths (in miles) of bus routes required to transport kindergarten children mid-day to and from the kindergarten program as well as the length (in time) that kindergarten children spent on that mid-day bus route.

The Town of Princeton, Massachusetts was one such community that, when looking at this problem, discovered that some of its kindergarten children spent 1-1/4 hours daily on the mid-day bus route. This meant that some children spent over 225 hours a year on a bus just getting to and from school for a 2-1/2 hours session of kindergarten each day. It was also costing the community \$6,000 to run the mid-day bus route each year.

The school administration had other concerns about the efficacy of a 2-1/2 hour daily kindergarten program, particularly for children identified as those in need of special services. The curriculum for the Princeton kindergarten program emphasizes a diagnostic-prescriptive teaching approach based on a comprehensive screening program, using the Dallas Pre-School Test, conducted in early October. Individual prescriptive programs are written for each child who demonstrates any weaknesses.

It was felt that the traditional half-day schedule did not allow for adequate special education remedial time for children identified

as "high risk" without removing them from their regular in-class instruction class for a majority of the two-and-a-half hour time block.

Finally, the half-day schedule prevented scheduling children with specialists in the areas of art, music, and physical education on a regular basis.

The State Department of Education was approached in the spring of 1983 by the administration of the Princeton School District for a waiver from the school year/school day regulations in order to conduct an alternating full-day kindergarten program. Such a waiver required Board of Education approval, an unlikely prospect in the current climate that was filled with proposals to extend the school year. However, Department administration was impressed with the district's rationale for conducting such a program, beyond the financial considerations: increased total instructional time (hours) in school; increased services provided (special education, art, music, physical education), and broad-based parent and community support. These, together with extensive interest in the program by other communities and the dearth of research available on the alternating full-day kindergarten programs, gave ample justification for the Department to both support Princeton's waiver request to have its kindergarten students attend school for less than 180 days and urge the Board to approve a three-year pilot study of alternate scheduling approaches for kindergartens. It was hoped that, through such a study, the gap in the research literature would be reduced and the Board of Education

would become more flexible in applying its school day/school year regulations for kindergarten programs, if assured that children were not being harmed by such programs.

The Board of Education, at its June, 1983 meeting, voted to grant the necessary waiver from the regulations governing the length of the school day and year and also granted designation as a Board Pilot Kindergarten Study to the school committees of Princeton, Union 63, and New Braintree for a period of three years beginning in September of 1983, for the purpose of conducting and evaluating half-day and alternating full-day kindergarten classes. In August of 1984, in order to increase the number of subjects to be studied, the Board granted a similar waiver to the school districts of Granville and Sandisfield, members of the Berkshire-Hampden Southwest Union, and they, too, became part of the pilot study for years two and three.

Statement of the Problem

The major problem stems from disagreement over the benefit and effectiveness on total learning and growth of kindergarten children in an alternating full-day program of 108 days/year, as compared to children in a traditional half-day program of five days per week (180 days/year).

It has been suggested that the alternating day program can provide more time and flexibility to strengthen and support effective total learning and academic growth for the kindergarten child, particularly by providing more services in special education, art, music, and physical education (Herman, 1984). This suggestion, however, has been questioned by some educators, researchers, and others who believe that negative factors such as fatigue, retention,

and regression outweigh the positive factors of increased instructional time and flexibility in scheduling (Wisconsin State Department of Education, 1980).

Thus, the problem is to determine whether children who attend alternating full-day kindergarten programs show greater or less growth in cognitive, psychomotor, affective, and linguistic skills than children who attend traditional half-day kindergarten programs.

Purpose of the Study

The main purpose of this study was to determine if differences exist in student achievement among kindergarten students who attend traditional half-day kindergarten programs and students who attend an alternating full-day program.

This study also focused on the extent to which children enrolled in an alternating full-day program or schools which schedule alternating full-day programs received the following benefits:

- * Increase in instructional time will allow for increased time on task, particularly in reading readiness activities.
- * More effective and timely scheduling of special education services, such as remediation, will be available during the school day without separating the child from his/her peers during periods of academics.
- * Increased school hours and length of school day for kindergarten children will permit full participation in library, art, music, and physical education classes conducted by specialists in those fields, rather than by the kindergarten teacher within the classroom.

- * Parents will be more supportive of and involved in the alternating full-day kindergarten programs since they will find it easier to arrange for child care services, health services, and other activities.
- * The amount of time kindergarten children spend riding on the school bus will be reduced by at least half through the use of regularly scheduled elementary school buses instead of the separate mid-day kindergarten route.
- * There will be a savings in transportation costs which can be used to increase or improve the instructional program of the school system.
- * Finally, this study looked at the negative factors of fatigue, retention, and regression to see if there were differences in their impact on children attending alternating full-day programs as compared with children who attended the traditional half-day program.

The Towns of Princeton, New Braintree, Granville, and Sandisfield served as the pilot sites for the alternating full-day approach. The Towns of Barre, Hardwick, and Oakham served as the control group for the traditional half-day kindergarten program. All of the communities involved in the study were small rural/suburban towns with a wide variety of incomes ranging from very wealthy to very poor. The respective populations numbered 2,425 for Princeton; 4,102 for Barre; 2,272 for Hardwick; 994 for Oakham, 671 for New Braintree; 1,300 for Granville; and 749 for Sandisfield. Median family incomes were, respectively, \$25,502 (Princeton); \$21,574 (Barre); \$16,319 (Hardwick); \$20,236 (Oakham); \$20,870 (New Braintree); \$18,780

(Granville); and \$14,464 (Sandisfield). Population density per square mile was, respectively, 69 in Princeton; 93 in Barre; 59 in Hardwick; 47 in Oakham; 32 in New Braintree; 29 in Granville; and 14 in Sandisfield. Finally, equalized property valuation per capita in 1984 for each town was: \$29,101 (Princeton); \$16,341 (Barre); \$15,849 (Hardwick); \$25,060 (Oakham); \$18,987 (New Braintree); \$33,023 (Granville); and \$64,083 (Sandisfield).

Design of the Study

Both quantitative and qualitative methodologies were utilized to gather the data for all three years of this study. Cook and Reichardt (1979) make a strong argument for using both methods if the particular research setting calls for a combination of quantitative and qualitative methodologies. To test the null hypothesis that kindergarten children who attend alternating full-day programs will show no significant difference in achievement in cognitive skills than children who attend the traditional half-day program, the Metropolitan Readiness Test (Pre and Post Test) was administered to both the control and experimental groups (the pre-test in October; the post-test in April). Psychomotor and linguistic skills were measured through the use of the Early Prevention of School Failure screening tools which were employed by participating school districts each fall. Students who did not reach the expected goals in the fall were given a post-test in the spring. Growth of those children who were given the post-test in the alternating full-day program was compared with those in the traditional program who were administered the post-test. Social-emotional skills were assessed through parent and teacher questionnaires and by observation.

Attendance records were reviewed to see whether or not there were any patterns of absenteeism for children in the alternating full-day program as compared with those in the traditional half-day programs. Total percentages for both groups in each year of the study were compared with attendance figures from 1981 through 1983.

In addition, financial data were compared both in terms of expenditures and savings. Transportation data from the 1982-83 school year were compared with data from the 1983-84, 1984-85, and 1985-86 school years in terms of length of route, time spent on the bus, and monies expended for children in the experimental group, since these variables did not change in the control schools.

Questionnaires, attitudinal surveys, and interviews were used to gather opinions from parents and teachers. An existing Likert-type scale was modified and used for the teacher survey and a questionnaire using both a closed and open format was used for parents. Stewart (1984) states that "It is often possible to build on previous work when designing primary research. For example, prior work often provides examples of measurement instruments. The instruments with modification where appropriate may be incorporated into a new research project" (p. 111). For the purpose of gathering more descriptive data on the less obvious changes, differences, benefits, or detriments of the alternating day program from the perspectives of the administrators, staff, and participants of the program, and to distinguish the richness and varieties of their individual experiences, the principals, teachers, and a selected number of parents from the alternating full-day programs were interviewed. According to Patton (1980), qualitative interviewing provides a

framework within which program staff and participants could explain, in their own words, their individual perceptions, views, and program experiences. For the purpose of this case study, four principals, four kindergarten teachers, five first-grade teachers, and several parents were part of a quasi-structured interview process. An interview guide was used to make sure that the same information was covered by all interviewers. The guide also allowed enough flexibility for the interviewer to explore, elucidate, or illuminate certain areas. Since the perceptions and perspectives of subjects may be different, this flexibility was warranted and justified. Furthermore, most of the subjects were known to the interviewer and a less structured interview process was less inhibiting. The surveys and questionnaires referred to earlier were used as a basis for the interview guides. Particular emphasis was placed on the affective areas of growth the participants observed in the subjects of the study.

Significance of the Study

Given that this study was successfully implemented, the contribution to the research and policy domains of the field of education should be considerable. First, as will be indicated in Chapter II, few, if any, significant studies have been conducted and reported on alternating full-day kindergarten programs. Yet, because of the heightened emphasis being placed on early childhood education, there is growing interest and resultant articles and studies on full-day, five-day-a-week kindergarten programs. Current research has repeatedly shown that there is considerable improvement in achievement

by children participating in a full-day, five-day-a-week kindergarten program (Adcock, 1980; Humphrey, 1980; Oelerich, 1979; Rust, 1982; Herman, 1984).

The Minnesota Department of Education (1972) studied various kindergarten programs in its 1972 study and concluded that no adverse effects were noted in those children who attended the alternating full-day schedule. Oelerich, in a paper presented in 1979, reported that, in a study comparing testing done in 1974 and again in 1979, students in alternating full-day programs did less well on the Metropolitan Test than students tested in 1979 in both half-day and all-day, every day programs. However, McConnell and Tesch (1986) reported that in Paseo, Washington, they found no significant difference on 13 different measures of academic achievement, and receptive and expressive language skills after a one-year comparison of students in half-day and students in alternating full-day programs. Obviously, the jury is still out on the benefits and/or detriments of alternating full-day kindergarten programs. This study provides more evidence for the jury to weigh and adds to the current research available.

In terms of policy implications, successful implementation of this study plus a result that showed no negative effects encouraged the Massachusetts Board of Education to be less rigid in its administering of the current regulations. It also provided greater justification for the Board to allow, albeit encourage, school districts to pilot innovative instructional programs for the children under their jurisdiction. With the current push, indeed demand, for the development of early childhood education programs for three- and

four-year-olds, school districts will be under increasing pressure to provide expanded services for those children who have had educational experiences before they enter kindergarten. It is unlikely that there will ever be enough money or building space in the near future to provide for all-day, every day kindergarten experiences for all five-year-olds in the Commonwealth. It is, therefore, incumbent upon the educational policy makers to provide alternatives that will build on these youngsters' previous experience. Since the alternating full-day program proved to be beneficial, or at least had no detrimental effects, it may provide a full-day alternative at less cost and without the need for additional space. This alternative, if acceptable to parents, may also be more palatable to local school boards and school administrators, and thus become a catalyst for expansion into full-day, every day kindergarten programs.

Definition of Terms

Traditional Half-Day Kindergarten (half-day/every day) (HDED):

A kindergarten class that meets 5 days a week, 180 days a year, for 2-1/2 hours to 3 hours each day, 12-1/2 to 15 hours per week.

Alternate or Alternating Full-Day Kindergarten (FDAD): A

kindergarten class that meets 2 full days and 1 half-day per week or 3 full days per week, 108 days a year for 16-1/4 hours to 18 hours per week.

Full-Day, Five Day a Week (FDED): Usually 5 or 5-1/2 hours per day, 5 days per week, or 25 to 27-1/2 hours per week for 180 days a year.

Organization of the Study

This study is presented in five chapters:

Chapter I: The Introduction, presents an overview of the study, including an introduction to the problem, the background of the problem, the statement of the problem, the purpose of the study and the statement of the hypotheses, the significance of the study, definition of terms, and an outline of the organization of the study.

Chapter II: The Review of the Literature, includes an in-depth review and presentation of relevant literature on kindergarten programs with particular emphasis on the implementation and effects of various kindergarten scheduling: half-day and full-day. This chapter also looks at the literature on future trends for kindergarten scheduling as well as the changing perceptions of kindergarten programs.

Chapter III: The Design of the Study presents a detailed description of the design of the study and the methodologies involved. A relevant literature review is also presented to support the use of both qualitative and quantitative methodology. A description of the subjects, the procedures used for collecting data and the instrumentation used is also included.

Chapter IV: Presentation of the Data reports the data collected from the testing conducted, the survey questionnaires and the interviews. Financial and attendance data are also presented. Analysis of the testing data is presented along with an analysis and summary of the qualitative data collected from the study.

Chapter V: Conclusions and Recommendations summarizes the findings from the study, presents conclusions, and makes recommendations for both further study and future policy decisions.

CHAPTER I I

REVIEW OF RELATED LITERATURE

Recently, there has been an increasing interest in lengthening the period of time children spend in kindergarten. This chapter attempts to look at the related literature and research on kindergarten scheduling. First, however, the historical foundation for kindergarten will be reviewed. The chapter is divided into three sections: the historical beginnings of kindergarten; the research on full-day kindergarten programs; and, finally, the research that has been conducted on alternating full-day kindergarten programs.

History of Kindergartens

Friedrich Froebel, a German educator, is known as the father of the kindergarten. However, Froebel was strongly influenced by Johann Pestalozzi, who established an orphanage in Zurich in 1774 for the underprivileged. Here, he attempted to teach neglected children the rudiments of agriculture and simple trades in order that they might lead productive, self-reliant lives. Pestalozzi believed that education should be organic, that intellectual, moral, and physical education should be integrated and that education should draw upon the faculties or "self-power" inherent in the human being. Education should be based on experience with an emphasis on object lessons that acquaint the child with the realities of life. Next, the program should be child-centered. There must be an allowance for individual differences and there must be freedom to learn. The teacher's task is to offer a helping hand to the instinctive efforts of the child. The

stages of education must be related to the stages of child development; it should be correlated and well rounded. Intellectual, moral, and physical activities should be as one (Britannica, pp. 54-55).

Friedrich Froebel visited Pestalozzi and studied under him at his school at Yverdun in Switzerland for two years. This experience led him to develop his own pedagogical philosophy which he practiced in a school, an orphanage, a teacher-training course, and, finally, in his first kindergarten, or "garden of children," which he opened in 1837. Froebel believed that education had two aspects: the teacher was to remove hindrances to the self-development or "self-activity" of the child, but he was also to correct deviations from what man's experience has taught is right and best. Education is thus both "dictating and giving way." This means that ordinarily a teacher should not intervene and impose mandatory education, but when a child, particularly a child of kindergarten age, is restless, tearful, or willful, the teacher must seek the underlying reason and try to eradicate the uncovered hindrance to the child's creative development. School, for Froebel, should be the place to which the pupil comes to know the "inner relationship of things." School is to concern itself not primarily with the transmission of knowledge but with the development of character and the provision of the right motivation to learn (Britannica, p. 55).

Froebel put great emphasis on play in child education. Games are not idle time wasting; they are "the most important step in the development of a child" and they are to be watched by the teachers as clues to how the child is developing. The teacher, like a gardener,

fosters the growth -- prepares the soil, cultivates, weeds, waters, fertilizes, discourages pests, and so on (White & Burka, 1987).

Children differ and the teacher is not all-powerful. The job of the child gardener is to study the child, discern what each child's needs and laws of growth are, and to find ways to cultivate the natural growth processes of different children.

Froebel was especially interested in the development of toys for children -- what he called gifts and occupations with which to play. These gifts included balls, globes, dice, cylinders, collapsible dice, shapes of wood to be put together, paper to be folded, strips of paper, rods, beads, and buttons. The aim was to develop elemental judgment distinguishing form, colour, separation and association, grouping, matching, and so on. The important thing is that the children were to play with these things not as they wished, but as organized or subtly guided by the teacher (Britannica, p. 55).

Froebel's kindergarten was unique for its time. Earlier institutions for young children had been primarily welfare nurseries or day care centers, intended merely for looking after children while parents worked. Froebel wanted his school to have a purpose for the children, not the adults. The curriculum consisted chiefly of three types of activities: (1) playing with "gifts" or toys in order to familiarize children with inanimate things; (2) playing games and singing songs for the purpose not only of exercising the limbs and voice, but also of instilling a spirit of humanity and nature; and (3) gardening and caring for animals in order to induce sympathy for plants and animals. All this was to be systematic activity.

The kindergarten, as Froebel designed it -- that is, to meet the educational needs of children between the ages of four and six through the use of play, gained widespread acceptance. During the 25 years after Froebel's death in 1852, kindergartens were established in leading cities of Europe and North America. The first American kindergarten was opened by the Schurz family, who had emigrated to the United States in 1852 from Germany and had settled in Watertown, Wisconsin. Margarethe Schurz opened the kindergarten in her home, enrolled her daughter, and with her husband promoted kindergarten throughout the country. The Schurz kindergarten was conducted in German as were all the kindergartens established in the United States until 1860.

Elizabeth Palmer Peabody, sister-in-law of both Nathaniel Hawthorne and Horace Mann, and a remarkable woman in her own right as scholar, translator, and editor, met Margarethe Schurz and, shortly thereafter, opened the first English-speaking Froebelian kindergarten in Boston in 1860. Mrs. Peabody also became a leading proponent of kindergartens and wrote a manual, The Kindergarten Guide; a journal, The Kindergarten Messenger; and started a kindergarten training school, as well as a society for those interested in kindergartens called the American Froebel Union. In 1870, there were 11 kindergartens in the United States, only one of them English-speaking. By 1880, 400 kindergartens had been established, a few of them public school based, thanks to the efforts of Susan Blow, who opened the first public school based kindergarten in 1871 in St. Louis. By the turn of the century, there were over 5,000 kindergartens in the United States (White & Burka, 1987).

As large numbers of immigrants entered the United States in the latter part of the nineteenth century and early decades of the twentieth century, the debate around kindergartens centered around their usefulness as instruments of socialization for immigrant children. The education of massive numbers of five-year-olds put a growing strain on the child-centered pedagogical methods of Pestalozzi and Froebel. Neither could provide a standardized approach for early education in urban schools. In their places, Dewey's progressive kindergarten would assume ascendancy for most practitioners (White & Burka, 1987). The purpose of education in Dewey's view was to bring children into society, with play centered on the reproduction of home and neighborhood life. The task of the kindergarten curriculum was to build habits in the child that would move the child in socially desirable directions.

From the 1920s to the 1950s, the primary function of kindergarten was to provide a comfortable child-centered group experience outside the home. More recently, however, kindergartens have as a primary focus the preparation for the academic tasks of the first grade. Some would argue that the purpose of kindergarten should be academic achievement. The appropriateness of this focus has become the substance of heated debate (Elkhart, 1986; Zigler, 1987; Day, 1987). It is not our purpose here to detail the pros and cons of this debate. However, because of the downward push of academic instruction into early childhood programs, and the upward push of early childhood programs for three- and four-year-olds (Weikart, Zigler), schools are

looking at the amount of time five-year-olds are spending in kindergarten, and thus are investigating and experimenting with different kindergarten schedules.

Research on Full-Day Kindergarten

Historically, kindergarten began as a full-day program. Half-day programs were developed during World War II because of the booming birth rate, the influx of more immigrants and the need to educate them, the shortage of teachers and the lack of building space (Humphrey, 1983). In 1986, Humphrey reported that 2,276,115 youngsters were enrolled in kindergarten. Of that number, 573,153 were in full-day, every-day programs; 66,546 were enrolled in alternating full-day programs; and 1,602,930 were in traditional half-day programs.

The question of whether the traditional half-day program was sufficient for meeting the curriculum needs of kindergarten students was raised as early as 1972 by Mindess. She questioned whether the two-and-a-half hour session usually conducted twice in a day by the same teacher was educationally defensible (Mindess, 1972). Wills reported in 1967 that some schools had instituted full-day kindergartens as a response to the increased emphasis on the cognitive domain. Kindergarten teachers were feeling the demands of primary teachers and parents to teach tasks that heretofore were introduced in first grade (Wills, 1967).

Indeed, most of the studies that have been done on full-day kindergarten programs measure the cognitive results that have occurred in the programs. Winter and Klein (1970) asked whether the extended school day for kindergarten children made a difference in academic

achievement for advantaged and disadvantaged children. They found the extended day program did indeed result in significantly better performances on the Metropolitan Readiness Test. A study conducted by the Cincinnati Public School System (1971) found that children in all-day kindergartens had significantly higher reading readiness scores at the end of their kindergarten year and that the all-day kindergarten does produce substantial academic benefits.

Alper and Wright (1979) reviewed the extended-day kindergarten program in Phoenix, Arizona, and found that the extended-day students were found to perform substantially higher on the Metropolitan Readiness Test. In the same study, participation in the school lunch program was seen as a major benefit for disadvantaged children. Both Winter and Klein (1970) and Alper and Wright (1979) found that parents preferred all-day to half-day kindergarten for reasons of convenience: easier arrangements for children's transportation, baby-sitting and a consistent daily routine.

Humphrey (1980, 1983) has perhaps done the most convincing research on the subject of full-day kindergarten. His initial report on the Evansville-Vanderburgh School District (1980) noted that many of today's children have had broader experiences than children in the past through exposure to nursery school, Head Start, and television. Increasingly, teachers are building on this experience with formal lessons in readiness skills for reading, writing, and mathematics, along with informal learning approaches emphasizing affective and linguistic development. In order to determine whether children who attend full-day kindergarten show greater growth in cognitive,

psychomotor, affective, and linguistic skills than those children in half-day programs, Evansville initiated a pilot full-day kindergarten program in four of their 30 elementary schools.

Results from the pilot showed full-day kindergarten children received higher scores on the California Achievement Tests and on the Boehm Tests of Basic Concepts. In addition, when full-day kindergarten children were tested in first grade, they scored significantly higher on the Gates-MacGinitie Reading Tests than children who attended half-day kindergarten. No significant difference was found in attendance patterns for the two groups, and a survey of parents and teachers involved with the full-day program found that they were pleased with its format.

The study reported the main advantages of the full-day program were increased time for more formal and informal learning; greater enrichment in music, art, and physical education; more individualized help; increased participation in other school activities such as assemblies; and more social interaction with adults and children. The main disadvantages of the program were increased class size and more responsibility and work for the kindergarten teachers.

A follow-up study (Humphrey, 1983) was done when the Evansville-Vanderburgh children were in third and fourth grade to determine whether the positive effects of full-day kindergarten were lasting. Children were assessed for self-concept, school attitudes, academic grades on report cards, conduct marks, retention in grades, handwriting ratings, and reading and basic skills scores. The results, as reported by Humphrey (1983), were that children did better on their readiness test; that children had higher than anticipated

scores in basic concepts; that children continued to do better in reading at the end of first grade; and that parents rated the program very highly and preferred the full-day program when given a choice. Children and teachers, as well as parents, had positive attitudes about the full-day kindergarten program. Children attending full-day kindergarten, when compared to children attending half-day kindergarten, tended to have higher academic and conduct marks on their report cards, a lower rate of being retained in a grade, lower handwriting ratings, and higher standardized achievement test scores. Self-concepts and attitudes about school were not negatively affected by participation in the full-day program (Humphrey, 1983).

Studies since the Evansville study (Evans & Marken, 1983; Jarvis & Molnar, 1985; Anderson, 1985) have confirmed Humphrey's findings: that full-day kindergarten programs show cognitive gains for those students who attend such programs.

Anderson (1985) compared results at the end of the year on the Stanford Early School Achievement Test between classes that were three hours in length and those that were four-and-a-half hours in length. She reported that the full-day students did significantly better on average than children in comparison classes in terms of their skills, knowledge, and understanding in reading, mathematics, social studies, and science. She also reported that the students in the full-day classes were enhanced by increased confidence, independence, and cooperation.

Evans and Marken (1983) compared the achievement of first, second, and third grade students who had been enrolled in a half-or-full-day program in kindergarten. No main effects for programs were

found except for reading attitudes, which unexpectedly favored the half-day group. The authors concluded that additional time in kindergarten did not have long-term effects.

Finally, an examination of the effects of city-wide change to full-day kindergarten in New York City was reported by Jarvis and Molnar (1983). The City of New York implemented full-day kindergarten in 1983. However, some of the schools were unable to start their full-day programs immediately, so they continued with the half-day traditional programming. Jarvis and Molnar used this naturally occurring variation in the kindergarten schedule to explore the effects of full- versus half-day programs. Student growth across the kindergarten year was measured by the Brigance K and 1 Screen and by the Language Assessment Battery (LAB). Schools which had half-day classes for the entire year were located in the most crowded districts. About 57.5 percent of the half-day students came from non-English-speaking homes. Thus, the students in the half-day program were probably more educationally disadvantaged than students in the full-day program, and certainly more likely to have limited English proficiency.

The major question addressed in this research was the effect of full-day kindergarten on cognitive growth. The findings of the study were that all children showed gains in readiness skills or English proficiency whether in half-day or full-day programs. When children attended monolingual classes and when English was not the dominant language of the home, greater gains in readiness occurred in full-day programs. There were also greater gains in full-day programs when

there were poor readiness skills. Children who attended all-day bilingual classes made greater gains than those in half-day bilingual classes.

Both Stinard (1982) and Herman (1985), in their reviews of the research studies conducted on full-day kindergarten, stated that, although the evidence was not conclusive, the data favored full-day kindergartens where they have been instituted. The long-term effects of full-day kindergarten are yet to be determined. As shall be seen in the next section, the research that has been conducted on the effects of alternating full-day kindergaretn is even less conclusive.

Research on Alternating Full-Day Kindergarten

In 1976, the Rhinelander, Wisconsin School District implemented an alternate-day, all-day program as a means to eliminate noon bus transportation expenses. One group attended all day on Monday, Wednesday, Friday; and the other group attended all day Tuesday and Thursday. The groups then switched days on alternating weeks. Measured achievement was not significantly different, probably because total instructional time had not changed. Two questions, however, were resolved: transportation costs were reduced, and it was shown that five-year-olds were able to sustain the all-day program (Herman, 1984).

Wisconsin continued to pioneer that alternating-day, full-day program. The Amherst, Wisconsin School District published a study entitled, "A Comparison Study and Evaluation of Three Types of Kindergarten" (1980). In that study, the authors concluded that "the only significant advantage to a full-day, alternate-day program is the cost savings in transportation, and this is at the expense of the

educational and emotional needs of the kindergarten child. This program lacks in continuity, instructional time, and management efficiency. The majority of teachers currently working with this program would not choose it again if given the option" (as quoted in Schulz, 1981).

Mouw (1976) found that in implementing an alternate-day, full-day kindergarten program, teacher attitude concerning the program used and not the program itself was found to be the most significant factor affecting success. Large motor and social skills were more readily learned in the full-day situation, while art and language skills seem to require daily reinforcement in order for learning to occur. Teachers involved in the full-day program were able to use the additional time to work on a more individualized basis with the students.

Schulz (1981) himself undertook a survey for the Wisconsin State Department of Education to determine which of the three schedules -- full, half, or alternating full-day -- parents, teachers, and elementary principals felt was best. Full-day/alternate-day was favored by 18.7% of the parents. However, most of the teachers would not choose the alternate schedule, nor would the majority of those working in it. For the teachers, the disadvantages outweighed the advantages. The advantages teachers cited were the ability to include more activities and readiness skills in the day, the schedule saved money, minimized bus problems, and provided a good preparation for full-day first grade. The disadvantages they cited were that the long time span between sessions, which was especially difficult for immature or shy children, caused most students to forget concepts. Many teachers noted that the children seemed more tired. One-third of

the elementary school principals surveyed favored the full-day/alternate-day schedule. They cited the reduced cost as a big advantage, as well as having more time for diagnostic evaluations of students. Disadvantages they noted were that continuity was lost if children were absent, children were often confused by the schedule, and immature students had difficulty adapting (Schulz, 1981).

Schulz concluded his report to the Wisconsin Board of Education by acknowledging that the question of whether a district should change from half-day, every-day kindergarten to full-day, alternating-day kindergarten was complex. It goes far beyond the issue of saving the cost of the noon bus runs and rescheduling bus routes into issues of child development, early childhood learning theory, and social, emotional, and physical needs of the five-year-old. It also encompasses issues of staffing patterns, daily program designs, curriculum design, availability of appropriate space and equipment, teacher attitudes, student attitudes and self-concept, parent acceptance and support, and the need for greater home-school communication, with the parent playing a larger role in the education of the child. In short, it should not be a decision made lightly, and just on the basis of cost savings.

Ulrey et al. (1982) assessed the effects of the full-day/alternate-day schedule on pre-reading skills, attending skills, and parental opinion of the program. They found no significant year-end school achievement or behavior differences between matched comparison groups attending half-day, every-day and full-day, alternate-day programs. They did, however, find that parental satisfaction was

higher for the extended day alternative, even though parents did express some concern for the lack of continuity in the schedule and the increase in fatigue of their children.

Gullo, Bersani, Bayless, and Clements (1985) looked at the achievement of kindergarten children in both half-day and alternative full-day settings and found similar results. There were no significant differences on measures of readiness and cognitive ability when half-day/every-day and full-day/alternate-day children's test scores were compared. However, when all children were given the Hahnemann Elementary School Behavior Rating Scale, full-day/alternate-day children showed noticeably higher scores in originality, independent learning, and on the critical-competitive scale. They also found considerable parent-teacher dissatisfaction with the full-day/alternate-day program. Teachers also felt concerned that there was not enough additional time in the morning to balance out the lack of instructional time in the afternoon. Both parents and teachers felt that the children in the full-day/alternate-day program became fatigued more easily than the children in the half-day program.

Moncado (1986) reported that Brown and McCarthy (1985), investigating a program in Terre Haute, Indiana, observed that children in alternating-day, full-day programs had more time and space to explore at their own pace and level of interest. They found that children spent more quality time on a specific task due to longer, uninterrupted work periods. They also found that children gained respect for their own developing skills and the skills of their peers.

The most recent evaluation of the effects of differentiated patterns of scheduling for kindergarten children has been completed by McConnell and Tesch (1987). Aware of previous research findings on the subject of the effectiveness of kindergarten scheduling (McConnell & Tesch, 1986), they set out to compare children's achievement, classroom behavior, study habits, and social skills in three settings: full-day, every-day kindergarten; half-day, every-day kindergarten; and full-day, alternate-day kindergarten, in Pasco, Washington. In 1987, they published a compilation of four reports that covered the period from 1982 through 1987:

- * The full-day, every-day kindergarten program was far more effective than the half-time models, when comparable children were placed in the different models.
- * The full-day, every-day kindergarten was effective both for poverty-level children and for average or above average students.
- * Between the two half-time models, half-day, every-day and full-day, alternate-day, the predominant finding both years was that differences were not large enough to be significant for the total student population.
- * The full-day, alternate-day model was significantly better than the half-day, every-day model for poverty-level children. There were no significant differences found when comparing children above poverty level (p. ii).

McConnell and Tesch (1987) compared the gains made by children in a half-day, every-day kindergarten, and in full-day, alternate-day kindergarten classes during both the school year 1984-85 and the school year 1985-86. Their evaluation of these children using pre- and post-test scores from the CTBS test showed that the scheduling makes relatively little difference to the total student population. The predominant finding in each year was of "no significant difference" on any of the test measures used.

When there are differences between the two models, the alternate-day, full-day program is slightly favored. This may be because the total time in school is increased under an alternate-day schedule -- an increase that can add up to five to seven weeks of "extra" school time over a year. Since the main increase in time in school under the alternate day model is in lunch time and in other informal learning situations rather than in actual class time, it may be that the learning that takes place in these informal settings is greater for the disadvantaged child since it provides more contrast to the home environment than would be the case for the children who come from more advantaged homes. In this study, disadvantaged children (poor and minority) made greater gains in the alternate-day program in both years of the program.

In the school years 1985-86 and 1986-87, McConnell and Tesch compared the gains made by children in every-day kindergarten with a comparison group of children in kindergartens that met every day for half a day and every other day for a full day. The results showed

that the full-day kindergarten is an extremely powerful intervention, significantly raising the language proficiency and academic skills for all participating children. In their words:

The replication of results in 1986-87 to those in 1985-86 indicates that the impact of a full-day kindergarten program is very great for all children served. The children entering the full-day kindergarten program with the lowest level of entry skills were able to achieve readiness skills almost at national norms by the end of the kindergarten year. Children enrolling with superior readiness skills were able to take advantage of the individual attention possible with a full-time aide, and to continue their development to a level that would warrant the label of "gifted and talented" by the end of a year of full-time kindergarten. (McConnell & Tesch, p. 87)

Summary

As a result of the McConnell and Tesch study and others like it, school districts that can afford it and have the space to accommodate the additional children will most likely begin to look more favorably on full-day programs for five-year-old children. Those that cannot afford the extra teaching costs and those that cannot find space may retain the traditional half-day programs. Some, however, may want to look at a full-day/alternate-day program for their kindergarten age children. Pigge and Smith (1979) wrote almost ten years ago that some parents and teachers believe that five-year-old children cannot cope with the long school day and that problems occur as a result of fatigue. Other concerns include the belief that children have trouble adjusting their sleep patterns; that the schedule breaks the continuity and daily reinforcement used by teachers. Most of the more recent studies have found that these beliefs have not been substantiated. Nonetheless, they are beliefs still held by some parents and teachers. Pigge and Smith went on to say that this type

of schedule allows children more time to participate in the total school program, acquire better work habits for first grade, adjust better to the school lunch program and the gymnasium for entry into first grade. In addition, the alternating full-day program allows for more instructional time during the school day since proportionately less time is spent on daily routine activities such as roll-call, reciting the pledge of allegiance, getting coats and boots on and off, and washroom visits, etc. (Pigge & Smith, 1979). It is for these reasons that many administrators look favorably on alternating full-day kindergarten schedules.

Perhaps, as Stinard (1982) concluded from his review of the research up to that time, there is no answer as to whether one schedule is better than another. It may be more meaningful to ask whether changing from half-day, every-day to full-day, alternating-days will have any detrimental effects. That is the question that this study attempted to answer.

C H A P T E R I I I

DESIGN OF THE STUDY

The design of the study is described in this chapter. There will be a discussion of the appropriateness of the methods used in the study, the selection of the population chosen to be studied, and a description of the instruments used. An overview of how the data were collected, selected, and analyzed will also be presented. The inherent strengths and weaknesses of the research design will be discussed.

The major purpose of this study was to determine if differences existed in student achievement among kindergarten students who attended traditional half-day kindergarten programs and students who attended an alternating full-day program. However, a major secondary purpose of this study was to see if the study would have any effect on policy decisions made by the Massachusetts Board of Education. Thus, the study became a policy research study as well. Majchrzak (1984) stated

. . . first, an ideal policy research study is one that combines a number of different research methods, such as survey with focused synthesis, or case study with secondary analysis. An ideal combination is to use both qualitative and quantitative methods. Such a combination provides several advantages by (a) increasing the perceived validity of the study when the two methods yield corroborating results and (b) providing additional insight that one method alone could not provide (p. 66).

Majchrzak also believes that

. . . policy research methodologies need not be precisely planned out in advance; room for adaptation should be allowed. The methodology should be based on the research question rather than the research question reformulated to fit a preferred methodology. Existing data and instruments should be used whenever possible; and, finally, the final guideline for designing a methodology should reflect the socio-political environment in which the study is taking place (pp. 66-67).

As Filstead (1979) has stated,

A better balance needs to be struck between the everyday grounding of meanings in social action and the generalizability of these meanings to a wider context. This is the challenge offered by qualitative and quantitative methods (pp. 45-46).

Thus, this study made use of quantitative methods and instruments; e.g., test scores, questionnaires, demographic data, and attendance data. Use was also made of qualitative methodology, those research procedures which produce descriptive data (Bogdan & Taylor, 1974, p. 4).

According to Filstead (1979), qualitative methodology are those research strategies such as participant observation, in-depth interviewing, and total participation in the activity being investigated, which allow the researcher to obtain first-hand knowledge about the empirical social world in question. Qualitative methodology allows the researcher to "get close to the data" (p. 6). This study made extensive use of observation techniques, and both guided and open-ended interviewing.

The object of unstructured interviews is to

. . . elicit from the interviewee what he considers to be important questions relative to a given topic, his descriptions of some situation being explored. . . to elicit rich, detailed materials that can be used in

qualitative analysis. Its object is to find out what kind of things are happening rather than to determine the frequency of predetermined kind of things that the researcher already believes can happen (Lofland, p. 76).

Interview guides are prepared in order to make sure that basically the same information is obtained from a number of people covering the same material (Patton, 1980, p. 200).

Description of the Sample

Perhaps one of the greatest weaknesses of this study was that the sample population was not "chosen" and was certainly not randomly "chosen." This study was done with a particular school district that wanted to implement an alternating-day/full-day kindergarten program which would require the children to be in school fewer than the state requirement of 180 days. In order to test whether or not this particular mode of scheduling would be harmful or not harmful to the children, a group of "control" schools were asked if they would be willing to participate in the study. The control schools were "chosen" on the basis of their having similar socio-economic populations, similar size classes, similar philosophies and goals for kindergarten, geographic proximity, and an ongoing relationship with the pilot school(s) through the joint training and use of the Early Prevention of School Failure Screening program. Additional pilot schools were included in the project in the second year (but first year of the study) when they requested to join the study so that there would be a larger sample from which to make a comparison.

Because of the small size of the schools, and because of the strong entrenchment of local control over school governance, particularly pronounced in small rural areas, the students could not

be randomly selected within each school. Thus, the subjects for this study were all the kindergarten students in seven communities: four pilot schools and three control schools. In the 1984-85 school year, there were 111 control school students and 70 pilot school students. In the 1985-86 school year, there were 108 control school students and 93 pilot school students respectively. All but one of the teachers were experienced kindergarten teachers. (The one teacher was a substitute teacher in one of the control schools who was filling in for a teacher on maternity leave.) All but three of the principals were male; the three female principals were in pilot schools.

All of the communities involved in the study are small rural/suburban towns with a wide variety of incomes ranging from very wealthy to very poor. As Table 3.1 indicates, per pupil expenditures and population density also vary widely. The wide variance in population accounts for the large differences in class size among the pilot communities of Princeton, New Braintree, Granville, and Sandisfield. It also accounts for longer bus routes, especially if only one bus is used to bring the kindergarten children home after school at noontime (KOC Report, 1985).

Although there was considerable variability in the amount of time students spent in school, all communities had similar philosophies and goals for kindergarten. Both types of kindergarten programs and all class schedules were designed to help children grow developmentally in the cognitive, psychomotor, affective, and linguistic skill areas. A brief description of each school's philosophy is contained in Table 3.2.

Table 3.1

Demographic Description of Participating Communities

School District	Population	Median Family Income	Average Per Pupil Costs	Population Density per Sq. Mi.	Equalized Property Valuation
<u>Pilot Schools</u>					
PRINCETON	2,425	\$25,503	\$2,323	69	\$29,101
NEW BRAintree	671	20,870	1,782	32	18,987
GRANVILLE	1,300	18,780	1,782	28	33,023
SANDISFIELD	749	14,464	3,308	14	64,083
<u>Control Schools</u>					
BARRE	4,102	\$21,574	\$2,294	93	\$16,341
HARDWICK	2,272	16,319	2,650	59	15,849
OAKHAM	994	20,236	2,436	47	25,060

Table 3.2

Description of Philosophies and Goals of Pilot and Control Schools

SCHOOL DISTRICT	KINDERGARTEN PHILOSOPHY AND GOALS
BARRE	<ol style="list-style-type: none"> 1. Prepare children for more formal academic programs of first grade. 2. Provide a happy learning environment. 3. Create a carefully balanced blend of structure and freedom so as to ensure a smooth transition to first grade and still allow creative play (considered important at this period in a child's life).
HARDWICK	<ol style="list-style-type: none"> 1. Provide a smooth transition from kindergarten to first grade through development of social, emotional, and academic readiness skills essential to ensure future success in school.
OAKHAM	<ol style="list-style-type: none"> 1. Meet individual needs 2. Promote social, emotional, and educational growth. 3. Foster maximum parental involvement. 4. Help children achieve readiness.
GRANVILLE	<ol style="list-style-type: none"> 1. Provide a warm, friendly place where children can grow emotionally, socially, and intellectually. 2. Expose children to letters, consonant sounds and math concepts as preparation for first grade. 3. Acquaint children with important life topics such as health and safety, community, etc. 4. Stress class routines to help children feel more comfortable and secure in school.

Continued on the next page.

SCHOOL
DISTRICT

KINDERGARTEN PHILOSOPHY AND GOALS

NEW
BRAintree

1. Develop positive feelings toward school.
2. Encourage parent involvement.
3. Foster knowledge of letter names, sounds, math concepts, and shapes.
4. Develop ability to work on task.

PRINCETON

1. Provide children with an education appropriate to each child's stage of development.
2. Promote social and emotional development as well as academic readiness for first grade.

SANDISFIELD

1. Develop positive and success-oriented attitudes in each child.
2. Foster growth socially as well as academically.
3. Treat children as individuals and provide instruction appropriate to their needs.

Description of the Instrumentation

Stewart (1984) and Majchrzak (1984) believe that utilizing secondary sources of data and building on previous work is both cost effective and reliable. Stewart states that

it is often possible to build on previous work when designing primary research. . . . For example, prior work often provides examples of measurement instruments. The instruments, with modification where appropriate, may be incorporated into a new research project. It is not uncommon for questionnaires and test items to be borrowed from existing literature. . . . This allows far greater comparability between previous research and the new study (p. 111).

To gather opinions from parents and teachers, questionnaires, attitudinal surveys and interviews were used. We chose to modify an existing Likert-type scale used by Humphrey (1980) in his study of the Evansville School District. His closed format parent questionnaire was also modified and used to survey all the parents of children in the study. Randomly selected parents of children in the pilot schools were also interviewed using an open format interview guide based on the closed format questionnaire.

For the purpose of gathering more descriptive data on the changes, differences, benefits or detriments of the alternating-day program from the perspectives of the administrators, staff, and participants of the program, and to distinguish between their individual experiences, the principals, and both the kindergarten and first grade teachers were interviewed using an interview guide. "An interview guide is prepared in order to make sure that basically the same information is obtained from a number of people by covering the same material" (Patton, 1980, p. 200). A combination of Patton's (1980) Standardized Open Ended Interview and Informal Conversational

Interview approaches were used in order to achieve a variety of responses. The information from the interviews was recorded on tape, transcribed, and analyzed.

Reichardt and Cook (1979) hoped that researchers would be able to use the broadest possible range of methods and would tailor the techniques they used to the research problems they investigated without parochialism (p. 27). This particular research problem easily allowed for the use of both qualitative and quantitative methodologies. We have described some of the quantitative instruments used such as the Likert-type teacher attitude survey, attendance records, budget information, and bus route information.

To test the null hypothesis that kindergarten children who attended alternating full-day programs would show no significant difference in achievement in cognitive skills than children who attended the traditional half-day program, the Metropolitan Readiness Test (Pre- and Post-test) was chosen. This choice was predicated on the fact that all of the school districts participating in the program were already utilizing this particular test. This was particularly important for the control schools, since they were unwilling, and we did not wish for them to incur any significant additional expenses. Other reasons for the selection of the Metropolitan were its pre- and post-test aspects and the fact that it was a reading readiness test and not a reading achievement test. Finally, several research studies conducted in the past used the Metropolitan Readiness Test (Winter & Klein, 1970; Lysiak & Irwin, 1976; Hatcher, 1978; Ziomet & Harris, 1980; Gullo, Bersani, & Clements, 1984).

Metropolitan Readiness Test

The Metropolitan Readiness Test (MRT) was developed to assess the readiness of a child to begin formal school learning. The content of the 1976 edition provides measures of some important pre-reading skills that are emphasized in kindergarten and beginning grade 1 instructional programs. Hence there was a need for two levels to provide adequate measurement of the wide range of skills: Level I (beginning through middle kindergarten) concentrates on the more basic pre-reading visual and language skills of auditory memory, rhyming, letter recognition, visual matching, language and listening, and quantitative language. Level II (end kindergarten through beginning grade 1) focuses on the more advanced, higher-level auditory, visual, language and quantitative skills important in beginning reading and mathematics such as beginning consonants, sound-letter correspondence, visual matching, finding patterns, school language, listening, quantitative concepts and operations.

The MRT can be used by classroom teachers for planning instructional activities that relate to each pupil's current level of skill development in the areas tested. It can also be used to help teachers form instructional groups (e.g., for reading instruction) and thus, in that regard, can be considered a placement test. The test is also used to predict a pupil's likely success in kindergarten or first grade as well as giving an indication of a pupil's achievement in instructional areas. For example, when Level I is given at the beginning of kindergarten, it is a "predictor." When Level II is

given at the end of kindergarten, it can be viewed as both a predictor of success in grade 1 and as a measure of achievement for the pupil in kindergarten at the completion of that experience.

The MRT does not provide in-depth diagnostic information about pupil strengths and weaknesses. The tests in the auditory and visual skill areas concentrate on abilities which are needed in decoding sounds and symbols, while tests in the language skill area emphasize broad language comprehension, reasoning and conceptual abilities that are important in both reading and mathematics.

The Level I test is divided into six parts or tests, with a total of 76 items. Test 1 is on auditory memory, immediate recall of what the teacher said, and contains 12 items. Test 2, rhyming, has 13 items which test for hearing and discriminating middle and ending sounds. Test 3, letter recognition, has 11 items on recognizing the names of upper and lower case letters. Test 4, visual matching, has pupils visually matching letters, words, numerals, and other forms for 14 items. Test 5 contains 15 items on school language and listening to standard American English. Test 6, quantitative language, has 11 items on counting, recognizing numerals, comparing size and shape, and other quantitative concepts. Because of the excessive amount of testing time incurred by this study, the quantitative test was not administered.

The final items used in the test were selected on the basis of both statistical criteria and practical considerations such as ease of administration and time requirements. Those items suspected of ethnic or language bias were dropped from the item pool as well. Format of

items does not vary very much at either level; this consistency is appropriate for the age group being tested. When the final items were selected, the two parallel forms were carefully matched in terms of content, item difficulty, and item discrimination. At both Levels I and II, items were selected to yield an average difficulty of .65 to .70 for the total test so that better discrimination among students at the average and below average ability level could be achieved. (These are the students who might need special attention for pre-reading skill deficiencies) (Nurss & McGauvran, 1976).

The major advantage for using the MRT as a pre-reading readiness test is the fact that it is a group administered test. Most school readiness tests must be individually administered, often by a specially trained individual. The MRT can be administered to as many as 15 pupils at a time by the classroom teacher. No special training is necessary, and weaving the administration of the test into the daily kindergarten routine is preferred.

Unfortunately, it does take an estimated total of 90 minutes to administer the test, exclusive of the practice test. These 90 minutes are broken up into three segments, so that no more than two sub-tests are done in one sitting. It is time-consuming for the teacher, but not nearly as time-consuming as individually administered tests would be. Because of this, it was decided to drop the quantitative test for the purposes of this study.

To measure psychomotor and linguistic skills, the Early Prevention of School Failure (EPSF) screening tools were employed by the participating school districts. The selection of the EPSF screening tools was predicated on the fact that all of the schools

except two were using the program to screen all of their incoming kindergarten children each year and had all of their teachers and several parents go through the intensive training program that is required for the use of the EPSF program. The two pilot schools that were not using the program eagerly agreed to have their kindergarten teachers trained, and implemented the program. McConnell and Tesch (1987) used the Peabody Picture Vocabulary Test which is part of the EPSF screening battery in their study of the Pasco, Washington School.

Early Prevention of School Failure Program

EPSF is a nationally validated program for children ages four through six that incorporates the results of children's screening into an individualized instruction program for each child. It shows where the child is developmentally in terms of language skills, motor coordination, perception, visual skills, and hearing skills. Early identification of developmental learning delays is stressed, with appropriate follow-up instruction provided. There are six identified critical and observable project components. These are:

- TEAM SCREENING of all incoming students in five modality areas (language, auditory, visual, fine motor, gross motor). Speech, vision, and hearing are also assessed. Using program testing materials, screening is done by team members as a team effort.
- TEAM CONFERENCING - Observations, screening scores, and parent information are compiled and evaluated. Appropriate educational recommendations are made regarding each child's learning style and special needs. Many children will be

successful with the regular classroom material, but others will demonstrate a need for the EPSF curriculum and perhaps even the need for further diagnostic evaluation.

- EDUCATIONAL PLANNING - Based upon the conference recommendation, teachers plan activities to meet the needs of the child. Children needing additional modality training are grouped and given developmental skill activities in the modality (modalities) of need.
- MODALITY INSTRUCTION - During 20-30 minutes of daily instruction, the identified children practice the basic skills in their concern areas under the supervision of the classroom teacher, specialist or parent volunteer. The management system provides a format for simplified record keeping as children practice and master the skills.
- EVALUATION - Identified students needing modality services are evaluated at the end of the year to determine the amount of development in the modality area(s). Assessment is made with the Peabody Picture Vocabulary Test, the Preschool Language Scale, the Developmental Test of Visual-Motor Integration, and the Revised Motor Activity Scale.
- PARENT INVOLVEMENT - Parents are encouraged to become knowledgeable about the program, to volunteer in the classroom and/or to work with their child at home.

Early Prevention of School Failure Testing

The tests used in the Early Prevention of School Failure screening battery were selected because they provided information about the child's development in the modality areas of language,

auditory, visual, fine and gross motor skills. For the purposes of this study, only those children who were "at risk" - that is, below average, on the pre-screening conducted in the fall were given the test again in May. In order to decrease the amount of testing conducted, only data from the Peabody Picture Test (to measure language development) and the Revised Motor Activity Scale (to measure fine motor control and gross motor muscle control) were collected.

The Peabody Picture Vocabulary Test (PPVT) is a commercially published, norm-referenced, wide-range, power test of hearing vocabulary. It provides an estimate of an individual's receptive (hearing) vocabulary and shows the extent of English vocabulary acquisition. The test is administered orally to each child and results are recorded as an age equivalent score. At the preschool level, the PPVT is used widely because of the importance of vocabulary as a measure of child development, and because the test is easy to administer to very young, immature children (Werner, et al., 1979).

The Revised Motor Activity Scale (MAS) was designed by the EPSF Program as a guide to measure selected perceptual gross motor skills as well as fine motor coordination skills. The three sections of the observational and performance scale are used for evaluating a child's body awareness, manual dexterity, and body control. Perceptual-motor skills are one part of a child's non-verbal development and involve both awareness of objects and information through the senses, and the ability to perform coordinated movements. The scale is individually given evaluating such skills as balancing, rhythm, directionality, body image, fine and gross movement, bilateral activities, and dominance.

Research Design and Procedures

This study looked at 382 kindergarten students in seven elementary schools over a two-year period from 1984 to 1986. Of these children, 163 were in alternating-day, full-day programs; 219 were in traditional half-day, every-day kindergarten programs. Students in the pilot classes received from three to four-and-a-half hours increased instructional time each week. One weakness of the study is that the amount of time the students spent in school was uneven, both in the control schools and in the pilot schools. Because changes could not be made in existing bell schedules, we were unable to control for the exact amount of time the children spent in each school.

Although the commercial reading readiness texts were not identical, they were similar in their structure and focus. Curriculum and pedagogy for all schools was remarkably similar in the amount of time spent on various components of the kindergarten curriculum and on the emphasis placed on those components.

Other variables such as use of specialists for art and music and physical education and the use of aids were also taken into account and adjusted for comparability wherever possible. We could not, however, control for the number of students in each classroom, and these numbers varied considerably, particularly in the pilot schools. Table 3.3 below summarizes the data on instructional time per week, use of specialists, number of students per classroom, reading texts used, and bell schedules for the control and pilot schools.

Table 3.3

Data Summary for Pilot Kindergarten Project

SCHOOL DISTRICT	TOTAL TIME IN SCHOOL PER WEEK	AVERAGE # OF STUDENTS PER KINDERGARTEN CLASSROOM	LENGTH OF LUNCH PERIOD PER DAY	PRESENCE OF AIDE IN CLASSROOM	INSTRUCTION W/PHYSICAL EDUCATION SPECIALIST PER WEEK	INSTRUCTION WITH ART SPECIALIST PER WEEK	INSTRUCTION WITH MUSIC SPECIALIST PER WEEK	INSTRUCTION WITH OTHER SPECIALISTS PER WEEK	COMMERCIAL READING READINESS PROGRAM(S)
<u>TRADITIONAL 1/2 DAY PROG.</u>									
BARRE	13-1/3 HOURS	14	35 min.	full-time	30 min.	35 min.	35 min.	none	ENCYCLOPEDIA BRITANNICA PREREADING SKILLS
HARDWICK	13-1/2 HOURS	14	30 min.	full-time	30 min.	30 min.	30 min.	15 min. Librarian	ENCYCLOPEDIA BRITANNICA PREREADING SKILLS (PRS)
OAKHAM	12-1/2 HOURS	13	30 min.	none	30 min.	30 min.	30 min.	none	ALPHA TIME
<u>ALTERNATING FULL-DAY PROG.</u>									
GRANVILLE	17 HOURS	27	30 min.	full-time	none	45 min.	45 min.	none	ECONOMY
NEW BRAINTREE	18 HOURS	10	30 min.	none	35 min.	35 min.	none	none	LIPPENCOTT BEGINNING
PRINCETON	16-1/4 HOURS	20	30 min.	full-time	60 min.	45 min.	30 min.	30 min.	ALPHA TIME
SANDISFIELD	18 HOURS	5	20 min.	none	45 min.	45 min.	45 min.	none	HARCOURT BRACE JOVANICH

Screening of kindergarten students in all schools was conducted at the beginning of the school year in September, using the EPSF screening tools. The EPSF battery of tests is administered individually by trained volunteers who have become screening experts in the administration of one of the tests. The testing situation is comprised of tables or stations for the administration of the various tests. For example, there are Peabody Picture Vocabulary Test stations, a gross motor station, two stations for the Preschool Language Scale (PLS), a fine motor station for the Beery Visual Motor Integration Test (VMI) and the Draw-a-Person (DAP), and a station where the communications disorders specialist (speech therapist) conducts a speech screening for articulation errors. Vision and hearing screenings are carried out by the nurse at a different time.

The child's performance in the tests is plotted on a profile reflecting the child's strengths and weaknesses resulting from the screening on the individually administered tests. Following the administration of the battery of tests, the professional staff discusses each individual child's strengths and weaknesses. Decisions about the child's needs and appropriate program are made following a review of the child's profile; i.e., provision for in-classroom programming in each area identified by the screening, referral for diagnostic, or referral for assessment for special education.

Students who did not reach the expected goals in the fall screening were given a post-test in the spring. Growth of those children who were given the post-test in the alternating full-day program was compared with growth of children in the traditional program who were administered the post-test.

The Metropolitan Readiness Test was administered to both the control and experimental groups: The pre-test was administered in October to groups of no more than ten students at a time; the post-test was administered similarly in April.

Attendance records were reviewed to see whether or not there were any patterns of absenteeism for children in the alternating full-day program as compared with those in the traditional half-day programs. Total percentages for both groups in each year of the study were compared with attendance figures from 1981 through 1983.

Social-emotional skills were assessed through parent and teacher questionnaires and by observations. An existing Likert-type scale was modified and used for the survey of both kindergarten and first grade teachers, and a questionnaire using both a closed and open format was used for parents. Both were administered in the spring of both years of the study.

For the purpose of gathering more descriptive data on the benefits or detriments of the alternating day program, interviews were conducted with the principals, kindergarten teachers, first grade teachers, and available parents from the alternating full-day programs. These interviews were conducted at the end of the first year of the study. Follow-up questionnaires were administered at the end of the second year.

Observation of both the pilot and control sites was conducted through site visits both in the fall and spring of both years of the study. The purpose of the visits was to ensure that there was

consistency in the testing administration in all sites, to assess the climate of the various classrooms, to ensure that the pedagogy in all classrooms was similar and to conduct interviews of the participants.

Finally, financial data were compared both in terms of expenditures and savings. Transportation data from the 1982-83 school year were compared with data from the 1983-84, 1984-85, and 1985-86 school years in terms of length of routes, time spent on the bus, and monies expended for children in the experimental group only, since these variables did not change in the control schools.

Analysis of Data

All data that were collected during the two years of the study were examined and compared. Hambleton, Swaminathan, & Cook (1981) stated that

. . . the behaviors or performances of individuals in a group may not be identical even if the individuals are similar. The fluctuations in behaviors may be attributed to the unreliability of the measuring instrument as well as to unobservable and uncontrollable individual differences. When the data obtained are made up of observations that fluctuate randomly, . . . statistical methods have to be employed to describe, analyze, and synthesize the data (p. 335).

We used descriptive statistics to describe the results of the Metropolitan Readiness Test scores for the children in the pilot schools as well as the children in the control schools. The use of these methods enabled us to determine whether or not there were any significant differences between the control and pilot groups. Student scores on the follow-up EPSF were reviewed to see if gains were made and, if so, whether the gains made by one group were any greater than

gains made by the other. Other quantifiable data are laid out and presented in tables to enable the reader to compare and contrast attendance data and financial data.

Data gleaned from surveys and questionnaires were collected and are presented as aggregate data from the alternating full-day program schools and from the traditional half-day schools. Some questionnaire data and interview data are also organized, analyzed, and described in a way to provide decision makers with information that would be useful to their decision-making processes. In the words of Patton (1980):

Description and quotation are the essential ingredients of qualitative inquiry. Sufficient description and direct quotation should be included to allow the reader to enter into the situation and thoughts of the people represented. . . . Description is balanced by analysis and interpretation. The purpose of analysis is to organize the description so that it is manageable. Description is balanced by analysis and leads into interpretation (p. 43).

CHAPTER IV

PRESENTATION AND ANALYSIS OF DATA

Introduction

The kind of data that was used in this study was described in Chapter III. The study made use of quantitative methods and instruments; e.g., test scores, questionnaires, demographic data, attendance, and financial data. It also made use of qualitative methodology or descriptive data through guided and open-ended interviewing of key participants in the study. Four building principals and four teachers were interviewed individually. The interviewer used a guided questionnaire and tape-recorded and transcribed the interviews. Groups of parents from each of the pilot sites were interviewed. The interviews were unstructured; however, an interview guide based on the parent questionnaire was used to ensure consistency from one interview session to another. All interviews were tape-recorded and transcribed. Inductive content analysis of the transcriptions identified the final data resulting from these interviews.

A number of questions were asked at the outset of this study. The data collected throughout the study incorporated these questions. The presentation of the data is organized around the major categories that emerged from the study. This chapter will present both the statistical and qualitative data organized around the ten major categories. Both the questions asked and the data available will be described.

The main purpose of this study was to determine if differences existed in student achievement among kindergarten students who attended traditional half-day programs and students who attended alternating full-day programs. The question posed was, "Do children who attend alternating full-day programs show greater or less growth in cognitive, psychomotor, affective, and linguistic skills than children who attend traditional half-day kindergarten programs?"

Cognitive Growth

The Metropolitan Readiness Test was chosen to test the null hypothesis that kindergarten children who attend alternating full-day programs would show no significant difference in achievement in cognitive (reading readiness) skills than children who attended the traditional half-day program. The Metropolitan Readiness Test is often used to predict a pupil's likely success in kindergarten or first grade as well as to give an indication of a pupil's achievement in instructional areas. When Level I is given at the beginning of kindergarten, it is a "predictor." When Level II is given at the end of kindergarten, it can be viewed as both a predictor of success in grade one and a measure of achievement for the pupil in kindergarten at the completion of that experience. Both levels of the test to assess growth of kindergarten students were used.

Tables 4.1 and 4.2 contain the pre- and post-test Metropolitan Readiness scores from both the pilot schools and the control schools for two years (the 1984-85 school year and the 1985-86 school year). Significance tests revealed that the patterns of means were about the same in the pilot and control schools in both 1984-1985 and 1985-1986.

Table 4.1

Means and Standard Deviations of Metropolitan Readiness Test Scores (1984-1985)

Group	N	<u>Level I (Pre)</u>		<u>Level II (Post)</u>	
		Mean	SD	Mean	SD
Experimental	68	60.72	11.55	60.13	7.19
Control	107	56.06	11.47	53.21	11.79

Table 4.2

Means and Standard Deviations of Metropolitan Readiness Test Scores (1985-1986)

Group	N	<u>Level I (Pre)</u>		<u>Level II (Post)</u>	
		Mean	SD	Mean	SD
Experimental	97	61.63	9.16	57.55	10.09
Control	108	55.75	12.84	55.21	11.77

Psychomotor Growth and Linguistic Growth

Tables 4.3a, 4.3b, and 4.3c (see page 59ff) present the results of the data collected from the Early Prevention of School Failure screening tests in the areas of language development, fine motor control, and gross motor muscle control. The Early Prevention of School Failure screening tests, as well as the purpose of these tests, were described in Chapter III. This study looked only at the data which related to psychomotor and linguistic differences among the experimental control groups. For the purposes of this study, only those children who were "at risk" -- that is, below average, on the pre-screening conducted in the fall were given the test again in May. The results shown in Tables 4.3a, b, and c indicate that a lower percentage of "at risk" students from the alternating full-day program retested in the spring remained "at risk" in May of the school year than "at risk" students tested from the traditional half-day program.

These data, as shown in Table 4.3a, support the statements made by administrators of the alternating full-day program that the full-day schedule allows for more time to be spent on EPSF instructional techniques to develop language ability. "We've been able to have an enriched language curriculum using the Peabody Language Kit. We bought that specifically for the alternating full-day schedule because we were going to have time to do it with the full day," was the comment of one principal. Another stated,

With the EPSF program, we can find those kids very early who are "high risk" - who are going to have trouble learning to read. That shows up with the screening the second week of September. These kids can be identified and eyes can be kept on them from the start of the school year, rather than waiting until the Metropolitan is given

at the end of the year. With the Early Prevention of School Failure program, we know exactly where and in what area the high risk children are; we have profiles and flow charts on every single child. In less than a minute you can look at a class and know exactly what you want to do.

The full day also allows more time for students to socialize with their peers, while the EPSF program increases the amount of interaction children have with the volunteer parents in the classroom. Both are positive influences on language development.

In their responses to the questionnaires, both kindergarten teachers and first grade teachers felt that the full-day program allowed for the development of better oral language skills in children.

Tables 4.3b and c show the results of the EPSF psychomotor testing. Although the results indicate that there was no noticeable difference between the experimental schools and the control schools, kindergarten and first grade teacher responses to the survey statements about fine and gross motor skills do not support these test results. Their responses indicate that there were noticeable differences between half-day and alternating full-day children in terms of the development of these modalities (see Tables 4.4 and 4.5). Although first grade teachers were not certain about the impact of full-day kindergarten on gross motor skill development, they felt strongly that fine motor skills, e.g., handwriting readiness, were better developed in full-day kindergarten than in the traditional half-day setting. Alternating full-day kindergarten teachers felt that the length of the school day had no impact on the development of gross motor skills (physical coordination), but they did feel that the full-day program promoted better development of fine motor skills.

Table 4.3
Early Prevention of School Failure Assessment Results

a. Language Development*

SCHOOL DISTRICT	FALL		FALL		SPRING		SPRING		PERCENT	
	# OF STUDENTS TESTED		# OF STUDENTS "AT RISK"		# OF "AT RISK" STUDENTS RETESTED		# OF STUDENTS STILL "AT RISK"			
	<u>1984</u>	<u>1985</u>	<u>1984</u>	<u>1985</u>	<u>1984</u>	<u>1985</u>	<u>1984</u>	<u>1985</u>	<u>1984</u>	<u>1985</u>
BARRE	62	57	10	9	9	9	6	5	60	55
HARDWICK	33	27	10	5	10	5	6	2	60	40
OAKHAM	23	27	5	3	3	3	3	2	60	66
NEW BRAINTREE	13	11	3	0	3	0	1	0	33	0
PRINCETON	38	55	18	1	18	1	6	1	33	100
GRANVILLE		24		0		0		0		0
SANDISFIELD		6		0		0		0		0

*Based on the Peabody Picture Vocabulary Test included in the Early Prevention of School Failure Assessment.

NOTE: "At Risk" - scoring below average.

NOTE: Number of "At Risk" students retested in Spring is sometimes less than total number of "at risk" students due to children leaving school system.

Continued on the next page.

b. Body Control
Gross Motor Muscle Control

SCHOOL DISTRICT	FALL # OF STUDENTS TESTED		FALL # OF STUDENTS "AT RISK"		SPRING # OF "AT RISK" STUDENTS RETESTED		SPRING # OF STUDENTS STILL "AT RISK"		PERCENT	
	<u>1984</u>	<u>1985</u>	<u>1984</u>	<u>1985</u>	<u>1984</u>	<u>1985</u>	<u>1984</u>	<u>1985</u>	<u>1984</u>	<u>1985</u>
BARRE	63	57	13	10	12	10	0	0	0	0
HARDWICK	33	27	5	1	5	1	1	1	20	100
OAKHAM	23	27	2	3	1	3	1	1	100	33
NEW BRAINTREE	13	11	2	0	1	0	1	0	100	0
PRINCETON	38	55	26	22	26**	22	8	3	31	13
GRANVILLE		24		13		13		0		0
SANDISFIELD		6		1		1		0		0

** Princeton screening was conducted by a SPED/Physical Education Specialist which may account for stricter standards and therefore larger number of students categorized as "at risk."

Continued on the next page.

c. Fine Motor Muscle Control

SCHOOL DISTRICT	FALL # OF STUDENTS TESTED		FALL # OF STUDENTS "AT RISK"		SPRING # OF "AT RISK" STUDENTS RETESTED		SPRING # OF STUDENTS STILL "AT RISK"		PERCENT	
	<u>1984</u>	<u>1985</u>	<u>1984</u>	<u>1985</u>	<u>1984</u>	<u>1985</u>	<u>1984</u>	<u>1985</u>	<u>1984</u>	<u>1985</u>
	BARRE	63	57	8	5	6	5	0	1	0
HARDWICK	33	27	3	2	2	2	2	2	100	100
OAKHAM	23	27	0	3	0	3	0	3	0	100
NEW BRAINTREE	13	11	3	0	3	0	0	0	0	0
PRINCETON	38	55	15**	9	15	9	2	1	22	11
GRANVILLE		24		2		2		9		0
SANDISFIELD		6		0		0		0		0

** Princeton screening was conducted by a SPED/Physical Education Specialist which may account for stricter standards and therefore larger number of students categorized as "at risk."

Table 4.4
 Attitudes of Kindergarten Teachers in Experimental Schools

Statement	Years	RESPONSES			
		Strongly Agree	Agree	Undecided	Disagree Strongly
1. I do not like the concept of a full-day kindergarten.	<u>1</u> 1984-1985				3
	<u>2</u> 1985-1986				1
2. I would rather teach in a full-day kindergarten classroom than in a half-day kindergarten classroom.	<u>1</u> 1984-1985	2	1		1
	<u>2</u> 1985-1986	2	1	1	1
3. Full-day sessions allow students to receive more support services than half-day sessions.	<u>1</u> 1984-1985	2	2		
	<u>2</u> 1985-1986	3	2		
4. Full-day sessions allow more opportunities for teachers to provide a more enriched curriculum.	<u>1</u> 1984-1985	2	2		
	<u>2</u> 1985-1986	2	2	1	

Continued on the next page.

Statement	Years	RESPONSES				
		Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
5. Art, music and physical education can be better provided within a half-day program than within a full-day program.	<u>1</u> 1984-1985			1	1	2
	<u>2</u> 1985-1986			1	1	3
6. Full-day kindergarten students become more independent than half-day kindergarten students.	<u>1</u> 1984-1985		2		2	
	<u>2</u> 1985-1986		3	1	1	
7. Full-day kindergarten students have difficulty handling lunch hours.	<u>1</u> 1984-1985				1	3
	<u>2</u> 1985-1986				2	3
8. Full-day kindergarten students retain less than half-day kindergarten students.	<u>1</u> 1984-1985			1	2	1
	<u>2</u> 1985-1986			1	3	1

Continued on the next page.

Statement	Years	RESPONSES				
		Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
9. Full-day kindergarten students are too tired in the afternoon to benefit from instruction.	<u>1</u> 1984-1985			1	3	
	<u>2</u> 1985-1986			1	4	
10. The immature kindergarten child has more difficulty adjusting to a full-day situation than the mature kindergarten child.	<u>1</u> 1984-1985		3	1		
	<u>2</u> 1985-1986		4	1		
11. Full-day kindergarten is better for the child because students can participate in the total school program with children from other grades.	<u>1</u> 1984-1985	1	2			
	<u>2</u> 1985-1986	1	2	1		
12. Half-day kindergarten students are able to master the same readiness skills as full-day kindergarten	<u>1</u> 1984-1985		3	1		
	<u>2</u> 1985-1986		2	3		

Continued on the next page.

Statement	Years	RESPONSES				
		Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
13. Full-day kindergarten students have more opportunities to socialize with their peers.	<u>1</u> 1984-1985	2	2			
	<u>2</u> 1985-1986	2	3			
14. The attention span and listening skills of half-day students are better than full-day students.	<u>1</u> 1984-1985		1		3	
	<u>2</u> 1985-1986		1	1	3	
15. Special needs students in full-day programs show more growth than special needs students in half-day programs.	<u>1</u> 1984-1985		1	3		
	<u>2</u> 1985-1986		1	4		
16. Students in half-day programs exhibit as much behavioral self control as students in full-day programs.	<u>1</u> 1984-1985			3	1	
	<u>2</u> 1985-1986			4	1	
17. Half-day students learn how to follow directions as well as students in full-day programs.	<u>1</u> 1984-1985		4			
	<u>2</u> 1985-1986		4	1		

Continued on the next page.

Statement	Years	RESPONSES				
		Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
18. Students in full-day programs interact with their peers in a more positive manner than students in half-day programs.	<u>1</u> 1984-1985		2	2		
	<u>2</u> 1985-1986		2	3		
19. Students in half-day programs like school better than students in full-day programs.	<u>1</u> 1984-1985			2	2	
	<u>2</u> 1985-1986			2	3	
20. Students in full-day programs are able to express themselves orally more effectively than students in half-day programs.	<u>1</u> 1984-1985	1	1	2		
	<u>2</u> 1985-1986	1	1	3		
21. Half-day students learn to control and express their feelings as well as full-day students.	<u>1</u> 1984-1985		1	2	1	
	<u>2</u> 1985-1986		1	3	1	

Continued on the next page.

Statement	Years	RESPONSES				
		Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
22. Children in full-day programs develop less physical coordination (gross motor skills) than children in half-day programs.	<u>1</u> 1984-1985			3	1	
	<u>2</u> 1985-1986			4	1	
23. Fine motor skills are better developed in a full-day program than a half-day program.	<u>1</u> 1984-1985	3	1			
	<u>2</u> 1985-1986	3	2			
24. Students in alternating day programs have more trouble remembering which days are school days than students in everyday programs.	<u>1</u> 1984-1985		1	2	1	
	<u>2</u> 1985-1986		2	1	2	
25. Alternating day programs require no more review of previously taught subject matter than programs which meet every day.	<u>1</u> 1984-1985		2	2		
	<u>2</u> 1985-1986	1	2	2		

Table 4.5
Attitudes of First Grade Teachers in Experimental Schools

Statement	Years	RESPONSES				
		Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
1. I would rather have students enter my first grade classroom with a full-day kindergarten experience rather than a half-day kindergarten experience.	1984-1985 1985-1986	1 1	2 2	1 1		
2. Half day kindergarten students are better prepared for first grade work habits than full-day kindergarten students.	1984-1985 1985-1986		1 1		2 2	1 1
3. Full-day kindergarten students function more independently than half-day kindergarten students.	1984-1985 1985-1986		2 1	1 1	1 1	
4. Children who have attended full-day kindergarten have a better mastery of readiness skills than those who have attended half-day kindergarten	1984-1985 1985-1986		1 2	2 1	1 1	

Continued on the next page.

Statement	Years	RESPONSES				
		Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
5. Half-day kindergarten students are more excited about coming to first grade than full-day kindergarten students.	1984-1985 1985-1986		1 1	1 1	2 2	
6. Full-day kindergarten students seem to be bored with first grade material.	1984-1985 1985-1986				3 3	1 1
7. Full-day kindergarten children seem to socialize better within their peer group than half-day kindergarten students.	1984-1985 1985-1986			2	2 2	
8. I do not see any difference in the abilities of half-day kindergarten students and full-day kindergarten students.	1984-1985 1985-1986		3 2			1 1

Continued on the next page.

Statement	Years	RESPONSES				
		Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
9. I believe that a half-day students are more excited about coming to first grade than	1984-1985 1985-1986			3 2		1 1
10. Full-day kindergarten students have a better knowledge of letter names and letter sounds than half-day kindergarten students.	1984-1985 1985-1986	1 1	1	1	2 2	
11. Fine motor skills and handwriting readiness is further developed in the full-day kindergarten students than in the half-day kindergarten students.	1984-1985 1985-1986	1 1	1		2 2	
12. Full-day kindergarten students do not have better gross motor coordination than half-day kindergarten students.	1984-1985 1985-1986		2 2	1 1	1 1	
13. Full-day kindergarten students can follow directions better than half-day kindergarten students.	1984-1985 1985-1986	1 1	1	1	2 2	

Continued on the next page.

Statement	Years	RESPONSES				
		Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
14. The attention span of half-day kindergarten students is longer than the attention span of full-day kindergarten students.	1984-1985 1985-1986		1 1	1 1	1 1	
15. Students from full-day programs are able to express themselves orally more effectively than students from half-day programs.	1984-1985 1985-1986		1 2	1 1	2 2	
16. Half-day students learn to control and express their feelings as well as full-day students.	1984-1985 1985-1986		3 2		1 1	
17. Students from half-day programs exhibit as much behavioral self-control as students in full-day programs.	1984-1985 1985-1986		3 3		1 1	

Continued on the next page.

Statement	Years	RESPONSES			
		Strongly Agree	Agree	Undecided	Disagree Strongly Disagree
18. Special needs students from full-day programs function better in first grade than special needs students from half-day programs.	1984-1985		1	3	
	1985-1986		1	2	1

Interestingly, the principals who were asked about the results of the psychomotor testing felt that gross motor development should not be different between the control groups and the experimental groups because such development was more dependent on maturational growth than on instructional activity. That may explain why both the first grade teachers and the kindergarten teachers saw no significant difference in the development of these skills in children who attended half-day programs and those who participated in the alternating full-day program.

Social-Emotional Growth

Part of the original question asked in this study was whether or not there would be differences in social-emotional growth, or the affective domain, between children in the alternating full-day programs and children who attended the traditional half-day kindergarten program. Because project participants were concerned about the amount of testing and, particularly, the amount of time required for that testing, and because there was also considerable dissatisfaction with existing behavior checklists and social-emotional evaluation instruments, quantitative data were not collected for this category. However, there was a need to assess the impact (or lack of impact) that the project was having on the social-emotional growth of youngsters in the program. A decision was made to develop instruments for parents and teachers and that these questionnaires would include a number of questions on social-emotional development as well as the other developmental modalities addressed in the project. In addition, follow-up interviews were conducted with parents, teachers, and administrators in the alternating full-day programs. As discussed in

Chapter III, an existing Likert-type scale used by Humphrey (1980) in his study of the Evansville School District was used for the kindergarten and first grade teachers. His closed format parent questionnaire was also modified and used to survey all the parents of children in the study. Table 4.6 presents a summary of parental attitudes toward the kindergarten program. Table 4.4 presents the attitudes of alternating full-day kindergarten teachers, while Table 4.5 reports out the attitudes of first grade teachers in the experimental schools. A more complete discussion and interpretation of the results reported in these tables will follow later in this chapter. Here we will be concerned with those questions that are related to the social-emotional development of the children in the pilot program.

In the spring of 1985, parents of all kindergarten children in the study were sent the closed format parent questionnaire referred to above. Two questions were directly related to the social-emotional growth of the children. The first, question 3, asked "during the last year, how would you describe the change in your child's confidence in his or her ability?" Of the control group parents who responded to the questionnaire, 48.6% said their children had much more confidence; 41.6% said their child had a little more confidence; and 9.6% said their child did not change much. Parents from the experimental schools responded similarly: 49.75% said that their child had much more confidence; 47% said that their child had a little more confidence; 2.5% said their child did not change much, while .75% reported that there had been a decrease in confidence.

Table 4.6
Summary of Parent Attitudes Toward
Their Kindergarten Program

Question	1984-1985		1985-1986	
	Exp. (N=64)	Control (N=74)	Exp. (N=76)	Control (N=97)
1. How much do you believe your child has learned in kindergarten?				
A) My child has learned a great deal.	45%	62%	57%	42%
B) My child has learned an average amount.	31	38	34	50
C) My child has learned a little.	23	-	9	5
D) My child has learned nothing.	-	-	-	-
2. In the last year, how has your child's ability to work and play with other children changed?				
A) My child has greatly improved.	40	47	37	36
B) My child has improved a little.	45	32	49	46
C) My child has not changed much.	14	21	14	25
D) My child has regressed.	-	-	-	2

Continued on the next page.

Question	1984-1985		1985-1986	
	Exp. (N=64)	Control (N=74)	Exp. (N=76)	Control (N=97)
3. During the last year, how would you describe the change in your child's confidence in his or her ability?				
A) My child gained much more confidence.	46	40	50	42
B) My child gained a little more confidence.	42	54	36	50
C) My child's confidence did not change much.	12	4	14	7
D) My child's confidence decreased.	-	1	-	1
4. Over the last year, has there been a change in your child's ability to express himself orally?				
A) My child has greatly improved.	38	39	47	36
B) My child has improved a little.	48	47	33	50
C) My child has not changed much.	14	11	17	13
D) My child has regressed.	-	3	-	4
5. Over the last year, have you noticed any change in your child's physical coordination?				
A) My child is now much more coordinated.	27	39	31	28
B) My child is a bit more coordinated.	62	44	39	68
C) My child's coordination has not changed.	11	18	13	3
D) My child is now less coordinated.	-	-	-	1

Continued on the next page.

Question	1984-1985		1985-1986	
	Exp. (N=64)	Control (N=74)	Exp. (N=76)	Control (N=97)
6. How much of your child's total development would you say is from experience in kindergarten?				
A) Most	39	34	38	27
B) Some	58	65	58	70
C) Little	3	1	3	2
D) None	-	-	1	-
7. Did your child exhibit any difficulty in separating from you at the beginning of kindergarten?				
A) My child showed a great deal of difficulty.	3	4	4	3
B) My child showed an average amount of difficulty.	13	11	8	11
C) My child showed a little difficulty.	21	20	14	12
D) My child showed no difficulty.	64	65	74	73
8. How much fatigue (physical tiredness) did your child exhibit at the beginning of his kindergarten experience?				
A) My child appeared very tired.	17	21	8	13
B) My child appeared moderately tired.	26	28	27	27
C) My child appeared slightly tired.	32	27	32	28
D) My child was not tired.	25	23	34	31

Continued on the next page.

Question	1984-1985		1985-1986	
	Exp. (N=64)	Control (N=74)	Exp. (N=76)	Control (N=97)
9. Has there been a noticeable difference in your child's level of fatigue since the beginning of the kindergarten year?				
A) My child is now less tired from school.	46	47	37	52
B) My child is now more tired from school.	5	1	12	3
C) There has been no noticeable difference in my child's level of fatigue.	49	51	50	46
10. Did your child have a pre-kindergarten experience?				
A) Yes	58	81	64	70
B) No	42	19	34	26
11. This year, has it been necessary to have someone else care for your child when he or she was not in kindergarten?				
A) Yes	32	34	30	34
B) No	68	66	55	62
If help was needed, was it difficult to make arrangements for such care?				
C) Very difficult	5	11	9	8
D) Moderately difficult	36	26	20	10
E) Not difficult	53	63	39	26

Continued on the next page.

Question	1984-1985		1985-1986	
	Exp. (N=64)	Control (N=74)	Exp. (N=76)	Control (N=97)
12. What learning experience do you think is the <u>most</u> important for children in kindergarten?				
A) Learning about the alphabet, words, numbers.	40	32		
B) Learning how to get along with other children.	23	31		
C) Learning how to control and express feelings positively.	23	35		
D) Learning how to control the body in more coordinated ways.	15	3		
13. What learning experience do you think is the <u>least</u> important for children in kindergarten?				
A) Learning about the alphabet, words, numbers.	15	3		
B) Learning how to get along with other children.	23	35		
C) Learning how to control and express feelings positively.	23	32		
D) Learning how to control the body in more coordinated ways.	40	31		

Continued on the next page.

Question	1984-1985		1985-1986	
	Exp. (N=64)	Control (N=74)	Exp. (N=76)	Control (N=97)
14. If you had a choice, which would you prefer for your child?				
A) Traditional half-day kindergarten	63	18		
B) Alternating full-day kindergarten	14	68		
C) Every day full-day kindergarten	23	15		

The second question asked parents to indicate what learning experience they thought was the most important for children in kindergarten. Both sets of parents indicated that, after learning about the alphabet, learning how to control and express feelings positively was most important, while learning how to get along with other children followed closely in importance (Question 12).

In the spring of 1988, the parent questionnaire was again sent to all parents of kindergarten children in the project schools. Response to question 3 included 49% of the control group parents, who responded that their child had much more confidence; 37% responded that their child had a little more confidence; and 14% responded that their child's confidence level had not changed much. In the experimental group, 49.5% of the parents reported that their child had much more confidence; 46% reported that their child had a little more confidence; and 3.75% reported that there had been little change. .25% reported that their child's confidence level had decreased. Again, parents in both groups reported that learning how to control and express feelings positively was a very important learning experience for children in kindergarten, as was learning to get along with other children.

Perhaps the most revealing information about social-emotional growth came from the interviews conducted with administrators, teachers, and parents. One principal stated:

One of the most important things that I noticed with the full-day group compared with the traditional half-day group was that we used to have two emotional upheavals in a youngster's life. One was their initial separation from mom and dad when they attended kindergarten for a half; the second was when they attended first grade and the separation from mom and dad for a whole day. Those were

two critical, emotional upheavals that a youngster had to deal with. With a full-day session, I've noticed that the emotional crisis is limited to the initial kindergarten separation and the transition into first grade is very smooth.

Another principal stated:

I think the kids in the all-day program are definitely more independent -- and maybe it has been because they have had their recesses with the older children. Maybe it has been because they've eaten in the lunch room that they're more independent. Maybe the teacher gets tired of having them in the afternoon and gives them a little more free time.

A third principal expressed the following: "I think that they're going to have a much better time adjusting to first grade. We have found that it takes two or three months at the beginning of first grade to get them used to the all-day program. They already are used to that."

Kindergarten and first grade teachers also found differences in the maturity levels of youngsters who attended all-day kindergarten programs, particularly at the beginning of first grade. A kindergarten teacher commented: "I think the children become more used to school and the full-day routine, so that when they start first grade it isn't quite as overpowering for them. I think they feel more relaxed about the school." Several spoke about the advantage of being able to participate in school-wide activities. "If there's an activity going on at the Village School, the kindergarten can also be involved in that activity. I think that socially there's a big bonus."

First grade teachers stated in interviews that full-day kindergarten had a very positive effect on youngsters' adjustment to first grade at the beginning of the school year. One teacher stated:

Full-day kindergarten is very beneficial to first grade youngsters. Not only does it get them used to a full day of school. It's difficult at the beginning in kindergarten -- the first couple of months, but after they get into the swing of things, there's just so much that you can get into in the kindergarten setting.

Others observed that the

. . . first week of school was easier for full day children. They are familiar with the use of the bathrooms, lunches, and bus numbers . . . more so than the children that came from traditional half-day programs. They felt more comfortable with school routines.

Another first grade teacher said:

There is a considerable difference in September. . . . the adjustment to first grade is easier for full-day students; they are not as tired, there are not as many tears, they can sit through a longer day, and the routines are much easier.

Parents also noticed a differences between their children who were in the alternating full-day program and those who had gone through kindergarten for the traditional half day. One parent stated that her child was "more prepared to enter first grade. He was much more ready for the academic program . . . his maturity level was greater." Another observed that the children "have more opportunity to work together on projects, to work cooperatively with a partner, thus their social skills can grow and develop."

One parent felt that her child had gained "increased independence, increased attention span, and increased patience."

Other comments written in by parents on the questionnaire were:

I would very much prefer the full-time kindergarten where the social skills can mature and the academic skills can be introduced and somewhat mastered.

The longer day has provided more opportunity for social contact; at lunch and during afternoon recess.

My daughter has matured considerably this past school year. I feel she is ready for first grade -- more so than I did for her brother.

My daughter's overall attitude towards school: academics, the bus ride, buying lunch, willingness to learn and share the learning experience is one of welcome.

My son seems more mature in his decision-making; more self-confident.

I feel that the full-day kindergarten seems to be a more maturing experience than the half-day kindergarten.

My daughter has definitely matured a lot this year and that is basically what a great deal of the kindergarten experience should deal with.

I would like to see unchanged, the size and the structure of the class day which places emphasis on the development of peer relationship, self-worth, and sense of connection to the entire school community.

It is clear from the evidence presented above that all parties involved in the alternating-day program -- principals, teachers, and parents -- did not believe that the alternating full-day kindergarten schedule had any detrimental effects on the social-emotional growth of the children who attended such programs. Instead, all felt that such programs either make no difference in the social-emotional development of the children, or have some very positive results in the maturation and affective development of the children who participate.

Time on Task

There were several subsidiary questions asked in this study beyond the major issue of whether or not there were differences in student cognitive achievement, psychomotor development, linguistic development, and affective growth. One such question was whether the increase in overall hours of instructional time during the week would allow for increased time on task, particularly in reading readiness

activities. Data gathered in this study included bell schedules from each of the control schools and experimental schools. Table 4.7 shows the hours per week for each kindergarten class. Overall, in one pilot community, the increase amounted to 135 in-school hours per child per year. In the other pilot communities, the alternating full-day schedule allowed for an increase of between 144 and 198 hours per year. Although the number of additional hours available for instructional activities in the experimental schools ranged from three additional hours to five and a half extra hours per week, an examination of the bell schedules from each school indicated that there was little to no variation in the actual time spent on reading readiness activities from one school to another, control school or pilot school. Rather, the additional hours available per week were spent on group projects, EPRS activities, and, in some cases, with art, music, and library specialists (see Table 3.3, p. 49).

Perceptions of the participants gathered through the interviews and through the surveys and questionnaires, confirm what is gleaned from reviewing the bell schedules. However, it was also evident that there was a belief that the increase in total number of hours translated into greater time on task.

Teachers and administrators reported in interviews that the increase in school hours made it possible to expand significantly the time spent on readiness-related activities. With this additional time, many reported that it was possible to build a daily structured language program into the curriculum, broaden the curriculum horizontally, provide increased socialization time, and expose youngsters to more activities and more in-depth projects, many of

Table 4.7

Hours per Week

Control School District	Total Time in School per Week	Experimental School District	Total Time in School per Week
<u>Traditional Half-Day Program</u>		<u>Alternating Full-Day Program</u>	
BARRE	13-1/3 hours	GRANVILLE	17 hours
HARDWICK	13-1/2 hours	NEW BRAINTREE	18 hours
OAKHAM	12-1/2 hours	PRINCETON	16-1/4 hours
		SANDISFIELD	18 hours

which were more fun and enriching for the students. The larger blocks of time that the alternating full-day program affords was mentioned by each kindergarten teacher and building principal as being one of the most important benefits of the all-day program. As one administrator said:

I think the teacher is more relaxed. . . . You don't have to worry . . . you have the feeling in the half-day program if people were tired, if the lesson wasn't working, you had to continue with it anyway, because the kids would be leaving. This way you can put it away and take it out again in the afternoon.

Another administrator talked about the additional time this way:

The most important thing, as far as I'm concerned, is more formal contact time for children in school. This program definitely provides that, not only in the total amount of time it provides, but also the amount of time it provides during the day. There are fewer breaks in the child's day; there's less time that's devoted to transportation in the long run, and there is quality time throughout the course of the day.

Another administrator, a former kindergarten teacher, stated the difference in time this way:

I also found in my years of teaching kindergarten, especially in bad weather, that there was very little time that was actually spent on tasks with intellectual activity. By the time you got the kids' snowsuits off, and they had their snack, if they had art, music, or gym, there was an awful lot of down time, when there really wasn't a lot of time when you had a block that you could spend on perceptual learning, or learning the alphabet, or in math areas, and I have found that, with our three-day program, you have the children there for longer spans and there is more time to spend in these areas.

All administrators in the pilot programs felt that the increased hours allowed them to broaden the curriculum. Philosophically, they were all opposed to greater emphasis on academics in kindergarten, and therefore used the increase in hours to emphasize other modalities such as perceptual learning. As one principal said:

I think the hours make a difference. The steadiness of the program; in fact, the kids come in the morning, and they're here all day long, and everybody can relax; there's no rush to get everything done. . . . We certainly have broadened the horizon tremendously, and these kids may be a little bit ahead in terms of readiness, but not enough to even mention. . . . It's having time to do more activities that we never had a chance to do. You didn't have the time. You only had two and a half hours and you have to figure putting clothes on and off in the winter is 15 minutes on either end; that's half an hour shot. And going to the bathroom. You've got two hours and you have juice and cookies at some point; so there's another 15 minutes shot; so now you have an hour and forty-five minutes. Well, getting kids from sitting on rugs to working at their tables is a good 5 minutes for kindergarten kids . . . you just settle down when they have to get ready to leave. Now we don't worry about it; it happens, just smoothes out. . . it's so much easier.

Teachers corroborated the impressions of administrators. All kindergarten teachers in the pilot schools felt much more relaxed with teaching the full-day program, primarily because they had more time during an actual day. As one stated: "There seems to be more time to

get into more depth with certain things. You have to make sure they have the time to get outside and climb and run . . . when they're here for just two and a half hours you don't have the time to let them really climb and run." Another explained:

There's just so much that you can go into in the full-day kindergarten setting and explore that you can't do within the normal realm of a half-day kindergarten. If you've got one student interested in a particular science thing that you might have, and, as it happens, a couple of other kids come along, it might be something that they are doing in their spare time -- you've got that extra little bit to time to spend to turn it into a lesson and all the others come along . . . you can go into things in greater depth than a half-day program.

Parents, too, believed that the full-day program gave the teacher more time for really getting down to work. "With half-day sessions it seems they almost get their coats off when it's time for a walk. There's not a lot of working time. This way the teacher has a lot of working time with much less disruption."

Other parent comments were similar: "I feel it gives my child more time for learning instead of just getting there and seeming like it is time to leave again." "There's more time for subjects, better learning, more work done, better socialization . . . more aware of current events." Still another parent said, "the program seems to offer lots of daily variety, more enrichments, more activities." "The half-day did not seem to expose my child to many school experiences," said one parent; while another said, "the full-day allows a better 'pace' to accomplish the day's goals; half-day seemed more frantic."

Thus the data revealed that the increased instructional time allowed for increased time on task, although that time was not always

spent specifically on academic work. However, at this age, spending time on all learning modalities is of eventual benefit to children's ability to learn, to read, to compute, and to think.

Special Education and Remediation

The question of whether more effective and timely scheduling of special education services, such as remediation, would be available during the school day without separating the child from his/her peers during periods of academics was also asked in this study. The data from interviews, questionnaires, and surveys revealed that scheduling of remediation and special education services was much easier and less disruptive both to the school and to the child in a full-day schedule than was the case for the traditional half-day program.

All principals agreed that scheduling specialists to come in to work with youngsters individually was much easier with the full-day schedule. One principal commented:

We always found it very difficult for a special needs child to get into the resource room; . . . We'd be lucky if we could get them in a half hour a week, whether it was scheduling because they'd miss out on something or whatever. It was very difficult for us -- we could identify the children -- but as far as getting them the services we would have liked to have gotten them, we weren't able to do it. Now we have a much easier time providing those services.

Another principal reported:

We've certainly had an enriched language curriculum using the Peabody, . . . but we have, of course, a much higher incidence of speech problems in kindergarten, because it's the first time you're seeing a lot of those kids. And often they're maturational, or they can be developmental, but whatever they are, they're there in a much higher number than you get, say, in fourth grade. And we've been able to move in and serve those kids. The speech therapist can go in and work on language development an hour a week in a non-special education kind of setting with kids that need it, and have it work. The alternating

day program gives you the time to allow that special help. and keep up the reading at the same time, so that the kids aren't separated from the class that much.

The scheduling of the Early Prevention of School Failure program was the greatest beneficiary of the full-day program. All principals and teachers from the pilot schools stated that, without the larger blocks of time, scheduling of the EPSF modality training would have been extraordinarily difficult. Follow-up assistance to children in traditional half-day programs considered at "high risk" or "at risk" would have required their removal from the classroom during regular learning activities, and from their peers at prime time during the day. This disruption is not always in the best interest of the child's affective or other skills development. The alternating full-day program, according to the participants, made it much more convenient to schedule special education services such as speech and learning disabilities remediation without separating the child from his/her peers during periods of academic or readiness work. Four out of the five kindergarten children in one pilot community who were considered "high risk" in year one of the project and who were given preventative services, were not found to be in need of special education services in the first grade. As a principal in another pilot community stated:

This year, we do have quite a high proportion of children who needed special education. We were able to work with them in the resource room for about a half hour block in the morning . . . and have the Chapter I teacher work with them in the afternoon . . . so they've been really getting a double block of time, where before they would have been lucky to get anything. . . . I can see them being able to be out of special education by first or second grade . . . which wouldn't have happened before.

Although teachers and parents did not believe that there was an appreciable difference in the progress special needs students made in either the full- or traditional half-day programs, they did agree that the scheduling was less disruptive. One reason for there not being major differences in progress is that most special needs children, if severely impaired or involved, would spend all day in school during kindergarten because of the services they required. Parents of special needs youngsters interviewed, believed, however, that the time their children spent in the regular classroom with non-special needs youngsters was highly beneficial. One parent stated she thought "a lot of her son's progress was due to the fact that he was with 'normal' children."

Participation in Art, Music, and Physical Education

This study also asked the question "would increased school hours and length of school day for kindergarten children permit full participation in library, art, music, and physical education classes conducted by specialists rather than the classroom teacher?" A look at the bell schedules for the pilot and control schools indicated that there were no appreciable differences in the time spent with specialists in either the pilot schools or the control schools. Those schools that could afford to hire specialists in these areas scheduled them for thirty to thirty-five minute blocks of time each week. Three of the pilot schools scheduled these specialists for periods of 45 minutes each week. What administrators indicated, however, in interviews, was that having the full day to schedule in specialists made the scheduling much easier. In addition, use of the afternoon meant that the prime time of the day could be utilized for academic

activity and that the afternoons could be used for music, art, and physical education. In addition, kindergarten children who attended the alternating full-day program could participate in all school activities such as plays, concerts, and field days with the other elementary school students. This, in turn, made them feel more a part of the school. Several teachers commented that special needs students were more likely to miss out on these activities in the traditional half-day schedule than they did with the full-day schedule. Budget constraints inhibited greater use of art, music, and other specialists, rather than scheduling constraints. But most teachers reported that, with the full-day schedule, kindergarten children were able to receive instruction in these areas from specialists as well as from the classroom teacher.

Parental Support and Involvement

An important ingredient of any new program in schools, particularly at the elementary school level, is the amount of support or non-support from parents for this change. An important aspect, then, of this study was to ascertain how parents felt about the change. As reported in Chapter III, parents' perceptions of the experimental alternating full-day program were an important element of the study, and, from the initial phases of the project, parents were kept informed about the program. The question asked was whether parents would be more supportive of the alternating full-day kindergarten schedule and whether they would find it easier to arrange for child care services, health services, and other activities. To gather information about their attitudes regarding the program, a questionnaire using both a closed and open format was designed and

sent to all parents of children in both the control and the experimental schools. In addition, parents from each of the experimental schools were interviewed in groups of three to five parents each. The interviews were conducted using the questionnaire as an interview guide. The interviews were conducted in the late spring of 1985. The questionnaires were distributed in the spring of both years of the project.

One of the unexpected outcomes of the alternating full-day program revealed from both the questionnaire responses and the interviews conducted with parents was its beneficial effect on parents. Working parents reported in both years that they found the alternating full-day schedule much more convenient in terms of arranging for day care for their children. All parents reported that they did more "meaningful" activities with their children, given a whole day, than during the half-day sessions. Table 4.6 (see page 76) gives a summary of parent attitudes toward kindergarten programs derived from the questionnaire.

More powerful, however, were the responses from parents who were interviewed. Some of their comments are highlighted below:

It works better for working mothers. Living in a country town like this, we have to travel to do any grocery shopping, to do anything. If we're going to do it on a day that the children are in school, it's a lot more convenient.

Half-day kindergarten disrupts everyone's schedule . . . you can't go very far in a half day, so the full-day program allows more flexibility.

The alternating day program is good for mom. To have long blocks of time with the children to ourselves a couple of days a week is great.

When there are younger children at home, it's nice when the older child is in school all day; mother has time to spend with younger siblings.

The traditional half-day program in the afternoon was very traumatic for the children and very difficult for the parents . . .

A kindergarten schedule is a crazy schedule . . . they leave about 8:30 in the morning, and by the time you get the beds made, they're home again, and you can't just say it's for working mothers; I think it's for mothers that are home, too. It really disrupts your life; you can't really go to the grocery store, because there's not enough time - the kids are coming back again. You can't schedule doctor's appointments because the kids are going to be leaving or they're coming. The all-day schedule is definitely more convenient.

Administrators echoed the parents' points of view. Two of the administrators had had to go out and "sell" the idea of the alternating full-day program to their communities; two had established the program many years before. The two who had to convince both parents of incoming kindergarten children and members of their school committees that this new, unusual form of scheduling would be acceptable to parents, not harmful to children, and save money, were surprised at the degree of acceptability they found in their respective communities. As one said:

I presented it, and told them what I thought would be the benefits, and got 100% support from the parents. They thought the idea of having their children ride less on the bus great. The fact that we are such a rural community where people have to drive 20 minutes for a loaf of bread, makes it very nice for parents. Some children were leaving the house at 8:30 and returning at 11:30. . . . So, they liked the fact that they would have either a whole day with their children or a whole day without their children. They also liked the fact that when they were working, they didn't have to worry about their kids coming home at noon time and walking to a babysitter's house.

One of the benefits to having large blocks of time during the day is that it becomes easier for teachers to schedule and utilize volunteers in the classroom. Whether as a result of "selling" the new kindergarten schedule to the community and particularly to parents, or whether as a result of the implementation of the Early Prevention of School Failure program, parents were more visible and far more plentiful in the classrooms of the pilot schools than they were before the alternating day program was instituted.

One benefit of the EPSF program not discussed heretofore was its impact on increasing the level of parent involvement in the schools. EPSF cannot work effectively without the assistance of parents in the classroom, working with children on the various learning modalities (Werner, 1979). More importantly, the parents wanted to become involved in the program regardless of whether they had children in kindergarten. In the words of one of the principals:

It gave them something to do in the classroom, and they've been good at it . . . it wouldn't have been possible to work in the EPRS program into the traditional 2-1/2 hour program because the parents take an hour of that time to work with the kids. Well, when you potty, and zip and feed and then give an hour over to parents, you have about 20 minutes left to the teacher. So, we wouldn't have brought it in under that schedule -- there wasn't enough time; it was too much of a sacrifice of time, I think. But this way (with the full day), it's not a sacrifice of time - just a wonderful addition.

Another principal had this observation:

We've been able to draw on parents for some things that they've always wanted to do. Parents would much rather come into school and help out in the classroom with little kindergarteners than go in the closet and ditto papers off for a teacher, which is very often what schools give volunteers to do -- correcting, dittoing. . . . This makes parents have a better feeling about volunteering. . . .

They have this section of the day to work with the kids, they've enjoyed it more . . . they feel as if they own part of the program.

Teachers, too, noticed an increase in numbers and enthusiasm among their classroom volunteers. Said one teacher in an interview:

I think the children have really enjoyed it, and I think the parents have really enjoyed it. I think it helps them understand better what's going on and it certainly is a big help. There are so many little individual counting tasks and little minute skills that the children are trying to learn that you just don't have the time to watch every child. The parent volunteers have been a big help in paying attention to each child's progress.

Impact on Bus Transportation

All four school systems that made up the alternating-day experimental group reported that one of their initial reasons for initiating the alternating-day program was the length of time youngsters were spending on a school bus, especially at noon time, in proportion to the amount of time they were spending in the classroom each day. One principal observed "the first youngsters that get on a bus were on the bus an hour or slightly over an hour, so if that youngster happened to live in that section, they could end up spending two hours on a bus a day in a traditional kindergarten program. . . . some of them were spending an equal amount of time on the bus as they were in school." Another principal stated: "I think my main impetus was because I had such long bus routes. It really did concern me that I had kindergarteners on the bus for about an hour and ten minutes."

To confirm their impressions that this was so, data were gathered on the length of the bus routes, the amount of time children

were spending on the buses, especially during the noon day run, and the cost factors involved. Additional data were gathered through interviews of principals and parents.

Population density per square mile ranged from 69 in the most densely populated community to 32 in the next most densely populated community to 28 in the next to least densely populated community to 14 in the most sparsely populated community.

The maximum hours a year a child might have spent on the bus before the implementation of the alternating full-day program was 285 (95 minutes/day x 180 days). In addition, a cost savings of \$6,000/year in transportation costs was realized. This cost attributed to transportation represented 25% of the total kindergarten budget. In one community, children who once spent up to an hour and a half on the bus at noon time, only spent 20 minutes on the bus each way. The miles saved by eliminating the noon bus run totalled 5,760.

In another community, the children traveled for over an hour and ten minutes at mid-day each day. With the change to travelling on regularly scheduled buses at the end of the school day, the longest ride that any child had was 30 minutes, and that ride occurred only three times a week. The savings for that community was \$4,325 in FY 1985 and \$3,000 in FY 1986. The cost represented 20% of the kindergarten budget.

The fourth community is 50 square miles with 90 miles of roads, only 35 of which are paved. In some years, children were spending as much time on the bus as they were spending in school. While the actual bus ride may still be as long, the school system has been

able to cut the overall time a youngster spends on a bus by 40%, from ten hours a week to six hours a week. The cost savings were considerable as well; \$9,000 in FY 1985 and \$5,000 in FY 1986, 40% and 25% respectively of the total kindergarten budget for that community. In all four communities, the cost savings were used to offset increased costs in special education budgets.

Data gathered from interviews of the administrators in each of these four districts indicated that an unexpected outcome of the alternating full-day program was the fact that children now wait for and leave buses in the company of other children -- either siblings or neighbors. Rarely does a youngster wait for or alight from a bus alone. The presence of other youngsters at a bus stop is another positive safety aspect of the alternating full-day program. Parents, in particular, reported this factor as an important outcome of the program, and one reason why they were so supportive of the full-day schedule. In the words of one parent:

It's such a rural community that a child could stand by the side of the road and have absolutely no house around him for five miles; and now they're able to stand with their brothers and sisters, so there's somebody with them. And they're getting off and walking home with their brothers and sisters, which is nice.

Attendance, Fatigue, Retention, and Regression

This study was initiated in order to find out whether the alternating full-day kindergarten program would provide more time and flexibility to strengthen and support effective total learning and academic growth for the kindergarten child. The suggestion that this indeed was true had been questioned by several researchers (Oelerick,

1979; Schulz, 1981), who believed that negative factors such as fatigue, retention, and regression outweighed the positive factors of increased instructional time and flexibility in scheduling.

To ascertain whether or not the alternating full-day program had an adverse effect on attendance, fatigue, retention, and regression, data were gathered from participants in the program. Attendance records were reviewed to see whether or not there were any patterns of absenteeism for children in the alternating full-day program as compared with those in the traditional half-day programs. Total percentages for both groups in each year of the study were compared with attendance figures from 1981 through 1983. Review of these records showed that there were no significant differences in attendance among the school districts for kindergarten pupils and no increase or decrease in the attendance rate in any of the experimental schools from the time when they were on a traditional half-day schedule and when they began the alternating full-day program (Table 4.8). Thus, neither program had any affect on attendance patterns.

Questions about fatigue, retention, and regression were posed to teachers and parents in the surveys and questionnaires. Additional information was collected in the interviews with administrators, teachers, and parents. All kindergarten teachers disagreed with the statement, "Full-day kindergarten students are too tired in the afternoon to benefit from instruction." They also felt that retention was not a problem for full-day students, even those who attended school only on alternating days. Most were uncertain whether children in the alternating day program had more difficulty remembering which days were school days than children who were in every day programs

(see Table 4.4). Follow-up interviews, however, produced comments that children of kindergarten age never knew what day of the week it was. As one administrator said,

Children having difficulties remembering which day of the week is a school day and which is a non-school day does happen, especially initially . . . but sometimes maturity enters into it. The day on, day off kind of thing sometimes is confusing, but I don't think it's an issue.

A teacher commented:

Kids have trouble remembering which day of the week it is anyway; I mean, learning the days of the week is one of the things that we spend quite a bit of time on in kindergarten . . . you ask them what day it is, and they'll say "Saturday" . . . when they come in on Monday and I ask them what day it is, they always say Saturday because they can see that Friday was the last day that they were in school.

Parents in both the control schools and the experimental schools were asked two questions about the fatigue factor (Table 4.6): "How much fatigue did your child exhibit at the beginning of his kindergarten experience?" and "Has there been a noticeable difference in your child's level of fatigue since the beginning of the kindergarten year?" Parents from both programs responded similarly to the question of fatigue at the beginning of the year and to the question of whether there was any noticeable difference. Most parents in the experimental schools, however, believed that their children were less tired in the spring of the year than they were at the beginning of the year. One parent from a pilot school commented, "There's a little fatigue at the beginning of the year . . . but they're tired anyway in the afternoon with the half-day program." Other parents had similar comments: "The level of fatigue is greater in the fall. . . . would fall asleep on the bus; level of fatigue

Table 4.8

Attendance Records, 1981-1986

Control Schools			Experimental Schools		
SCHOOL DISTRICT	ATTENDANCE RECORD SEPTEMBER - APRIL		SCHOOL DISTRICT	ATTENDANCE RECORD SEPTEMBER - APRIL	
BARRE	1981-1982	94%	GRANVILLE	1981-1982	92%
	1982-1983	93%		1982-1983	95%
	1983-1984	90%		1983-1984	93%
	1984-1985	94%		1984-1985	92%
	1985-1986	95%		1985-1986	95%
HARDWICK	1981-1982	91%	NEW BRAINTREE	1981-1982	92%
	1982-1983	94%		1982-1983	94%
	1983-1984	91%		1983-1984	93%
	1984-1985	92%		1984-1985	93%
	1985-1986	94%		1985-1986	96%
OAKHAM	1981-1982	89%	PRINCETON	1981-1982	95%
	1982-1983	93%		1982-1983	96%
	1983-1984	94%		1983-1984	95%
	1984-1985	92%		1984-1985	94%
	1985-1986	93%		1985-1986	97%
			SANDISFIELD	1981-1982	95%
				1982-1983	None
				1983-1984	96%
				1984-1985	95%
				1985-1986	93%

better as year progressed . . . having alternating day allowed him to sleep a little later on non-school days." "I did not think he would like full day; I thought he would be overtired . . . day in between gives them time to recoup," wrote another parent.

Administrators were asked directly about the fatigue factor in interviews. All had been concerned about the issue when they began the program and paid particular attention to it. One administrator made this observation:

Initially the kids are more tired going to school all day than they are half-days . . . the first three to four weeks, the nap time at mid-day is very important and, as the kids mature and get into the swing of things, then it's less and less of a factor. But it's also a factor with the half-day program when they initially start.

Another commented:

I think kids are tired after a full day of school. Certainly, you're going to see a difference if you keep a kid until 3 o'clock and you send him home . . . they're going to be tired . . . than if you let them go at 11:30 when they're still dynamite. Yes, I agree that they're tired when they leave, but I don't think that's all that bad. I think it's real normal. . . . They were tired at the beginning and, truthfully, some parents complained to me that their kids were tired when they got home . . . they sure are bouncing around the halls when they leave. The long bus ride, snowsuits. Still their bus rides could be half an hour, and if you've been in school all day and all of a sudden you're put in that nice, warm school bus with your snowsuit on and your mittens and your hat, you are tired when you get off the bus.

Commenting on the difference observed between first graders and kindergarteners at the end of the day, one administrator had the following to say:

I haven't noticed the kids are any more tired. . . . What we have noticed is that the kids going into first grade were much more tired than our kindergarten kids, because kindergarten kids get a nap. You watch the kids boarding

the bus in the first grade that first six weeks, and they are glazed. It's amazing they find their bus; they just walk out with these little burned out eyes -- and the kindergarten kids who've had their nap are out bright-eyed and bushy-tailed -- but the look on the first graders' faces that had no naps and have been up all day is something to behold those first six weeks.

Both administrators and teachers felt that there was no noticeable difference in retaining information with children who attended the alternating full-day program. In fact, one administrator said, "the question of retention for children is something that's a matter of routine. Once they get into the routine, once they're established, children adapt very easily." A teacher commented,

there really is no difference than from going from a Friday to a Monday. . . . I think they do very well at remembering. You know, we talk at the end of the day about what we're going to be doing the next day when they come to school . . . and they remember even then.

Still another teacher said,

The more you can do with them, repeat, reinforce more over a full day . . . there is much more time for reinforcement . . . through games, etc. You are able to turn learning into a game in the afternoon, which is better reinforcement and more fun for the kids.

Certainly the data elicited from the interviews and the surveys and questionnaires showed that, although there was probably some fatigue and retention problems at the beginning of the year, these issues were similar for all youngsters in kindergarten, were short term, and were not harmful to the eventual success and adjustment of children to kindergarten and school.

CHAPTER V

CONCLUSIONS AND RECOMMENDATIONS

Conclusions

This study was conducted for the purpose of ascertaining whether children who attended alternating full-day kindergarten programs showed greater or less growth in cognitive, psychomotor, affective, and linguistic skills than children who attended traditional half-day kindergarten programs. The study also focused on the extent to which children enrolled in an alternating full-day program received certain benefits. These perceived benefits were:

- Increase in instructional time would allow for increased time on task, particularly in reading readiness activities.
- More effective and timely scheduling of special education services would be available during the school day without separating the child from his/her peers during periods of academics.
- Increased school hours and length of school day would permit full participation for kindergarten children in library, art, music, and physical education classes conducted by specialists in those fields, rather than by the classroom teacher.
- Parents would be more supportive of the alternating full-day programs since they would find it easier to arrange for

child care services, health services, and other activities. Parents would also become more involved in the school itself.

- The amount of time kindergarten children spend riding on the school bus would be reduced by at least half through the use of regularly scheduled elementary school buses instead of the separate mid-day kindergarten route.
- There would be a savings in transportation costs which could be used to increase or improve the instructional program of the school.
- Fatigue, retention, and regression would not be greater in children attending the full-day programs than for children attending the traditional half-day program.

The specific questions asked in this study were the following:

- Do children who attend alternating full-day programs show greater or less growth in cognitive, psychomotor, affective, and linguistic skills than children who attend traditional half-day kindergarten programs?
- Will the increase in overall hours of instructional time during the week allow for increased time on task, particularly in reading readiness activities?
- Will more effective and timely scheduling of special education services, such as remediation, be available during the school day without separating the child from his/her peers during periods of academics?

- Will increased school hours and length of school day for kindergarten children permit full participation in library, art, music, and physical education classes conducted by specialists rather than the classroom teacher?
- Will parents be more supportive of the alternating full-day kindergarten schedule and will they find it easier to arrange for child care services, health services, and other activities.
- Will parents become more involved in the school?
- Will there be a savings in the time youngsters spend in riding the bus and in the costs of bus transportation?
- Will the alternating full-day kindergarten schedule have an adverse affect on attendance, fatigue, retention, and regression?

Data on these questions were collected through testing, teacher surveys, parent questionnaires, interviews conducted with administrators, teachers, and parents onsite, and fiscal and attendance records. Review and analysis of the data over a two-year period resulted in the following findings.

- This study revealed no detrimental effects on the social-emotional development of children attending the alternating full-day kindergarten program (as indicated by all administrator, teacher, and parent interviews, surveys, and questionnaires):
 - There was more opportunity for children to interact with their peers.

- There was more opportunity for teachers to pursue individual interests of children.
 - There was no more noticeable fatigue among children in this program than there was among children who attended the traditional half-day program.
 - There was more opportunity for playtime.
 - There was more opportunity for children to become a part of the whole school environment through eating lunch with other children and participating in school activities such as assemblies, plays, and concerts.
- There were no detrimental effects on cognitive development (as indicated by the Metropolitan Test results and administrator, teacher, and parent interviews, surveys, and questionnaires).
- There was some indication that increased instructional time may actually enhance reading readiness.
 - There was more opportunity to explore different subjects with children in depth.
 - There was more time for reinforcement, thus there was no regression.
- There were no detrimental effects on psychomotor development (as indicated by EPSF results and teacher and parent questionnaires, surveys, and interviews).
- There was some indication that fine motor skills may develop more as a result of additional time for art work.

- There were no detrimental effects on language development (as indicated by EPSF results and teacher, administrator, and parent interviews, questionnaires, and surveys).
 - There was some indication that increased time to speak to other children and to parent volunteers may enhance language development.
 - There was some indication that additional time available to spend with children needing special techniques to develop language ability benefits children "at risk."
- This study found that there was greater flexibility in scheduling art, music, and physical education specialists in alternating full-day programs than in the traditional half-day program (administrator interviews).
- This study found that there was greater parental involvement and support in most full-day programs than in most traditional half-day programs since they found it easier to arrange for child care, health services, and outside activities. Parents had a greater opportunity to serve as school volunteers in more meaningful ways, working directly with children through the EPSF program (interviews and questionnaires).
- This study showed conclusively that for geographically large and sparsely populated rural communities, the alternating full-day scheduling reduced considerably the number of hours children spend riding the bus to and from school. The study

also found that through the elimination of the noon-day bus five days a week, schools were able to save money in their transportation budgets.

The study also revealed that alternating full-day scheduling produced several side benefits:

- Due to an increase in school hours and length of school day, kindergarten children were able to participate more fully in enrichment activities and felt more a part of the school since they had lunch there and attended school-wide activities.
- The longer day allowed for more flexibility for scheduling blocks of time needed for the Early Prevention of School Failure training in language, auditory, visual, and psychomotor modality development. Children "at risk," in particular, benefited from this more intensive instruction.
- Teachers felt more relaxed about the kindergarten curriculum and could take greater advantage of young children's changing interests and attention spans.

Recommendations

Rarely can a research study be carried out in public school systems in a perfectly controlled laboratory setting. This study was no exception. The study had a number of flaws, not the least of which was the whole matter of testing five- and six-year-old kindergarten children. Testing kindergarten children is controversial. There are many variables occurring within this age group, most especially

developmental maturity versus chronological age growth. In some cases, there can be a full year's difference between youngsters entering kindergarten, and developmental age variants can be dramatic within the kindergarten year. In addition, factors such as fatigue and stress that may occur when a young child is asked to perform in a testing situation -- a situation which may be completely alien to the child's learning modality -- cannot be controlled or measured.

Therefore, knowing what we do about good developmental curriculum and how children learn, testing, together with the interpretation of testing material and the use of testing to indicate success and/or placement, remain very controversial issues (Elkind, 1981; Zigler, 1987; Meisels, 1989). A research study which places less emphasis on the use of pencil and paper testing to measure academic growth would be a welcome addition to the literature.

Despite the lack of random selection of the participants in this study, and despite differences in the use of instructional programs and materials, the variation in the number of subjects in each class, the presence or absence of an aide, different teachers with different styles of teaching, new teachers new to the project, and despite differing philosophies of programs, with some emphasizing social and emotional development and others emphasizing cognitive learning, the results of this study are significant.

This study provides policy makers at the state and local level important data on various prototypes of kindergarten programming and scheduling. In Massachusetts, the results of this study have already led the State Board of Education to change Board of Education

regulations for the school day/school year to allow local school districts far more flexibility and choice in determining how kindergarten programs should be scheduled and structured.

With more and more children participating in preschool experiences, children are probably more physically and cognitively developed so that they can handle more time in school. However, budget constraints, space limitations and large numbers of children (as the birth rate increases) often prevent a school system from extending the school day to meet the needs of these more experienced children. From the results of this study, it is clear that another option exists: the alternating full-day program allows for indepth activities and gives children more opportunities to explore and experiment without increasing costs.

This study did not ask which pattern of kindergarten scheduling is better, but rather were there any detrimental effects on children who attended kindergarten all day, every day. The study found there were none. The opinion of some that a full-day, alternating-day program will produce major academic gains is not substantiated, nor can the opinion of others, that a full day is too long for five-year-olds, be substantiated. We looked at children who had different kinds of kindergarten schedules and found that there were no significant differences in a child's social and cognitive growth and development if he or she attended school every day or every other day. The determining factor was the amount of time the child spent in school learning, interacting with peers, and having creative and enriching experiences. Whatever differences were found, e.g., more time for

interaction with others, indepth projects, socialization activities, and less time and money spent on the school bus, were all in favor of the alternating full-day program.

This study did not attempt to answer the question of what is the purpose of kindergarten, either. The study looked at existing kindergarten classes, and some favored a more academic experience while others emphasized social and emotional development for children. Further research needs to be conducted on this question. Research should also be conducted on how activities are organized and how time is utilized in the different kindergarten schedules. A serious examination of each model should be undertaken to ascertain what the optimal use of time for skill teaching, enrichment activities, and non-instructional activities should be in relation to academic achievement. Further longitudinal research should be conducted to see if the short term results of this study are borne out throughout the elementary and secondary grades for children who attended alternating full-day sessions. A more precise research design should be carried out which would control for variables in pre-school experience of children, entrance age into kindergarten, and variables in teachers such as educational preparation, certification, teaching experience, and socio-economic factors relating to parents. Controls for curriculum and materials would also be desirable. And, finally, further research would be useful to determine whether the same results of this study would occur in suburban and urban communities as well.

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