

Delaware Pilot Full-day Kindergarten Evaluation:

A Comparison of
Ten Full-Day and Eight Part-Day
Kindergarten Programs
School Year 2004-2005

June 2005

Deborah Amsden, M.S.

Martha Buell, Ph.D.

Cynthia Paris, Ph.D.

Aparna Bagdi, Ph.D.

Teresita Cuevas, M.P.A.

Nancy Edwards, M. Ed.

Pat Tressell, M.S.

Michael Gamel-McCormick, Ph.D.

Denise Hartranft, M.Ed.

Erin Walker, M.S.

Wei Qiu, M.S.

Jill Kamphaus, B.S.

Jessica Turner, B.S.

Prepared for the
Delaware Department of Education



Center for Disabilities Studies
College of Human Services, Education, and Public Policy
University of Delaware
Newark, DE 19716
(302) 831-6974
(302) 831-4690
(302) 831-4689 (TTD)
www.udel.edu/cds (web site)



Executive Summary

Delaware Pilot Full-Day Kindergarten Evaluation: A Comparison of Ten Full-day and Eight Part-day Kindergarten Programs School Year 2004-2005

June 2005

In June 2004, the Joint Finance Committee of the Delaware General Assembly appropriated funds to establish up to ten pilot full-day kindergartens for the 2004-2005 school year. The purpose of the appropriation was to determine the efficacy of delivering full-day kindergarten. Funds were awarded to nine public school districts and one charter school to pilot full-day kindergarten models. A sample of eight part-day kindergartens agreed to participate in the comparative evaluation. Profiles of the full-day and part-day kindergartens are found in the table below.

Table A. Full- and Part-day Kindergarten Model Comparisons

Model Type		Class Size	Teaching Hours	Special Education Eligibility	Free or Reduced Lunch Eligibility	Teachers per Class
Full-Day (N=10)	Avg.	20	6	4.1 (20.5%)	10.4 (52.0%)	1.4
	Range	17-28	5.2-6.7	0-7 students	6-14 students	1-2
Part-Day (N=8)	Avg.	18.25	2.5	1.75 (9.6%)	4.25 (23.3%)	1
	Range	15-24	2.5-3.0	0-10 students	0-10 students	1

These sites were observed for nine months and data were collected on the following variables: students' reading abilities; students' acquisition of eight kindergarten performance indicators of the Delaware educational standards; content of classroom instruction; amount of time of classroom instruction; complexity of cognitive concepts presented to students; students' responses to kindergarten; parents', teachers', and administrators' opinions about full-day and part-day kindergarten, and parents' and teachers' perceptions about the effect of full-day and part-day kindergarten on students.

Results of the data collection are presented below. It is important to note when considering the findings that the full-day kindergartens served significantly more students who were at-risk for academic failure than did the part-day kindergartens. There were more students from lower socio-economic backgrounds, more students with disabilities, and more students who were English language learners in the full-day pilots. In short, this comparison is between students with many risk factors attending full-day kindergartens and students with far fewer risk factors attending part-day kindergartens.

Findings

Student Outcomes

- Students in full-day kindergartens had stronger literacy skills as measured by the *DIBELS (Dynamic Indicators of Basic Early Literacy Skills)* than students in part-day kindergartens at both mid-year and year-end measurement points.
- Only 9.7% of students in full-day kindergartens remained in the category of "at-risk" for poor literacy development at the end of their kindergarten experience in comparison to 20.7% of children in part-day kindergartens who continued to show "at-risk" characteristics for literacy development. This difference was present despite the students in full-day kindergartens having many more academic risk factors.
- Students in full-day kindergartens appear to be acquiring literacy skills at a faster rate and earlier in the year than students in part-day kindergartens.

- For six of the eight kindergarten standards tracked, students in full-day kindergartens achieved the standards more often than their peers attending part-day kindergartens at the end of the school year. For three of those six, students attending full-day kindergartens acquired the skills at a significantly ($p < .05$) higher rate than students in part-day kindergartens.

Classroom Instruction

- Students in full-day kindergartens received almost **two and a half times as much literacy instruction** as students in the part-day kindergartens (137 minutes per day versus 58 minutes per day).
- Students in full-day kindergartens **spent significantly more time on science and writing instruction** than did students in part-day kindergartens (65 minutes per day versus 31 minutes per day).
- Students in full-day kindergartens received significantly more instructional time in fine-motor, gross motor and aesthetic activities than did students in part-day kindergartens.
- Students in full-day kindergartens had more instructional time (203 minutes-56.4%) spent on learning activities that developed skills in multiple subject areas (e.g., literacy/math, math/science/literacy, art/science) than did students in part-day kindergartens (71 minutes-47.3%).
- Students in full-day kindergartens participated in more high-level cognitive instructional activities using analyzing, synthesizing, and comparing skills, than did students in part-day kindergartens.
- Critical developmental activities in areas such as fine and gross motor skills and creative experiences (e.g., art, music and movement) are available at a significantly greater level for students in full-day kindergartens than for students in part-day kindergartens. This is in addition to the extended time available in full-day kindergartens for literacy, mathematics and other core content instruction.

Student Responses to School

- Eighty-seven percent (87%) of students in full-day and 84% of students in part-day kindergartens have a positive attitude toward school and say they like being in school.
- Students from part-day and full-day kindergartens do not indicate any difference in their levels of stress related to school.

Parent Responses to Kindergarten Models

- Ninety-eight percent (98%) of parents with children in full-day and 72% of parents with children in part-day kindergartens preferred to have their children enrolled in a full-day kindergarten.
- Ninety-six percent (96%) of parents with children in full-day kindergartens and 84% of parents with children in part-day kindergartens considered their five-year-olds to be ready for full-day kindergarten at the beginning of the 2004-2005 school year.
- An overwhelming majority of both parents of children in full-day and part-day kindergartens expressed that full-day kindergarten would better prepare their children for the social and academic demands of school.

Teacher and Administrator Responses to Kindergarten Models

- Teachers who work in both full-day and part-day kindergartens indicate that full-day kindergarten is more beneficial for students because it better prepares them for first grade, it provides more learning opportunities, and students become more socially adjusted to school.
- Administrators with experience supervising both full-day and part-day kindergartens overwhelmingly prefer full-day kindergarten.

Delaware Pilot Full-Day Kindergarten Evaluation:
A Comparison of Ten Full-day and Eight Part-day Kindergarten Programs
School Year 2004-2005
June 2005

Table of Contents

Executive Summary.....	i
Table of Contents.....	iii
List of Tables.....	v
Introduction.....	1
Purpose of the Evaluation.....	2
Population of Interest.....	3
Evaluation Methods.....	3
Results.....	10
Limitations.....	28
Conclusions.....	28
References.....	31
Appendixes	
A. The Purpose of Kindergarten.....	33
B. List of Protocols Used to Measure Kindergarten Program Activities and Participant Perceptions of Full- and Part-day Programs.....	39

**Delaware Pilot Full-Day Kindergarten Evaluation:
A Comparison of Ten Full-day and Eight Part-day Kindergarten Programs
School Year 2004-2005**

June 2005

List of Tables

Table A. Full- and Part-day Kindergarten Model Comparisons	i
Table 1. Pilot full-day kindergartens and the number of part-day and full-day classrooms in the school.....	8
Table 2. Comparison part-day kindergartens and the number of part-day and full-day classrooms in the school.....	9
Table 3. Full-day and Part-day Kindergarten Model Comparisons.....	9
Table 4. Ethnicity of Students in Full-day and Part-day Kindergartens.....	10
Table 5. Language Spoken by Students in Full-day and Part-day Kindergartens.....	10
Table 6. Comparison of Full- and Part-day Kindergarten Instructional Content.....	11
Table 7. Comparison of Full- and Part-day Kindergarten Complexity of Cognitive Activities. .	12
Table 8. Comparison of Time Planned to be Spent in Each Curriculum Content Area According to Teachers' Lesson Plans.	12
Table 9. Summary of Full-day and Part-day Kindergarten Student <i>DIBELS</i> Letter Naming Subscale Mid-year and End-year Results by Risk Category.	14
Table 10. Summary of Full-day and Part-day Kindergarten Student <i>DIBELS</i> Initial Sound Fluency Subscale Mid-year and End-year Results by Risk Category.....	14
Table 11. Summary of Full-day and Part-day Kindergarten Student <i>DIBELS</i> Phoneme Segmentation Subscale Mid-year and End-year Results by Risk Category.	14
Table 12. Summary of Full-day and Part-day Kindergarten Student <i>DIBELS</i> Nonsense Word Fluency Subscale Mid-year and End-year Results by Risk.....	15
Table 13. Students' Achievement of Eight Performance Indicators from the Delaware Kindergarten Standards	16
Table 14. Parent Report of Children's Reactions to School	17

Table 15. Children’s Reactions to Full-day and Part-day Kindergarten.....	18
Table 16. Parent Report of Children’s Tiredness in Full-day and Part-day Kindergarten	19
Table 17. Parents’ Reactions to Full-day and Part-day Kindergarten	20
Table 18. Parents’ Perceptions about their Children’s Readiness for Kindergarten at the Beginning of the School Year.....	21
Table 19. Parents’ Responses to Children Becoming More Socially Adjusted by Attending Full-day and Part-day Kindergarten	21
Table 20. Parents’ Preference for Full-day and Part-day Kindergarten	22
Table 21. Teachers’ Responses Indicating Students’ Readiness for Full-day Kindergarten.....	23
Table 22. Teachers’ and Administrators’ Responses to Questions Regarding Kindergarten Model Benefits.....	26

Delaware Pilot Full-Day Kindergarten Evaluation: A Comparison of Ten Full-day and Eight Part-day Kindergarten Programs School Year 2004-2005

June 2005

Introduction

In June 2004, the Joint Finance Committee of the Delaware General Assembly appropriated funds to establish ten pilot full-day kindergarten programs for the 2004-2005 school year. The purpose of the appropriation was to determine the efficacy of delivering differing models of full-day kindergarten programs throughout the state. Funds were awarded to ten full-day kindergarten models proposed by Delaware school districts and charter schools. The Joint Finance Committee required that programs receiving funding provide outcome data to be used for an evaluation of the full-day kindergarten programs. The Delaware Department of Education contracted with the University of Delaware Center for Disabilities Studies to conduct the evaluation of the ten full-day kindergarten models and a set of up to ten comparison part-day kindergarten programs.

In July 2004, based on the funding from the Joint Finance Committee of the Delaware Legislature, the Delaware Department of Education announced a Request for Proposals to local school districts and charter schools calling for applications for full-day kindergarten funding. The purpose of funding ten full-day kindergartens in local school districts and charter schools was described in the Request for Full-Day Kindergarten Proposal as follows:

- a) to determine the efficacy of different full-day kindergarten programs;
- b) to evaluate the benefits of full-day kindergarten programs;
- c) to enhance the quality of full-day kindergarten classrooms to meet the needs of all children; and
- d) to implement an overall curriculum model that is based on research and best practices on how kindergarten children learn and that is aligned to the state curriculum framework.

In addition, three program options could be addressed by the responding districts or charter schools in their full-day kindergarten proposals. These options were:

- a) to establish a model that promotes an inclusive full-day kindergarten for children with disabilities and children of diverse cultural and linguistic backgrounds;
- b) to ensure a program that promotes continuity across settings from preschool to kindergarten, and grade one in curriculum; and
- c) to involve families in the program, including families of diverse linguistic and cultural backgrounds.

The proposals were reviewed by a panel convened by the Delaware Department of Education. From this review, ten full-day kindergarten models were selected to receive up to \$85,000 each to implement their proposed kindergarten models.

Purpose of the Evaluation

Once the ten pilot full-day kindergartens were chosen, discussions between Department of Education personnel and Center for Disabilities Studies personnel occurred to determine the primary focus of the evaluation. Taking into account the needs of the citizens of Delaware, the General Assembly, and school districts throughout the state, a set of primary evaluation questions was agreed upon. Those questions are as follows:

1. How do full-day and part-day kindergarten programs compare on student outcomes for Delaware kindergarten standards performance indicators?
2. How do full-day and part-day kindergarten programs compare on other student outcomes including stress and behavior?
3. How do full-day and part-day kindergarten programs compare on instructional strategies and techniques?
4. How do full-day and part-day kindergarten programs compare on family-school communication and relationships?
5. How do full-day and part-day kindergarten programs compare on teacher tasks and time?
6. Do properly implemented screening measures identify students in need of instructional assistance at the time of entry to kindergarten?

Based on these questions, a program evaluation design was proposed by Center for Disabilities Studies personnel and approved by Department of Education personnel.

Population of Interest

Public, private, and charter schools offer part-day and full-day kindergarten to children and their families in Delaware. For this evaluation, those kindergartens funded by local school districts and charter schools were considered.

At the time of the evaluation, of the 16 public school districts in Delaware, nine districts had full-day kindergarten available in at least one of the schools within the district. Of the charter schools offering kindergarten, all offer full-day kindergarten.

After receipt of applications for funding for pilot full-day kindergartens, a panel of individuals from within the state reviewed the proposals and chose ten pilot programs. The

programs chosen to receive funds to operate a pilot full-day kindergarten model included one charter school, Academy of Dover, and nine public school districts. Two of the pilot public school district's full-day programs, Appoquinimink and Smyrna, were located in separate early childhood centers, while the remaining seven public school full-day kindergarten classrooms were located in public elementary schools. Three of the pilot districts were located in urban areas while the remaining seven were located in rural school districts.

For the purpose of this evaluation, the types of programs providing kindergarten services are defined as follows:

1. **Kindergarten-** a program or class for four-year-old to six-year-old children that serves as an introduction to school. All kindergarten teachers must be certified by the Delaware Department of Education.
2. **Full-day Kindergarten-** a program or class for four-year-old to six-year-old children that serves as an introduction to school and takes place five days per week for at least five hours per day.
3. **Part-day Kindergarten-** a program or class for four-year-old to six-year-old children that serves as an introduction to school and takes place five days per week for up to three hours per day, either in the morning or afternoon.

Evaluation Methods

Included in this section is information about the selection of comparison part-day kindergarten classrooms to be observed for the program evaluation, the measurement instruments used to evaluate the programs, and the observers sent to classrooms to collect the data. In addition, methods of handling and analyzing the data are described as well as a final description of the sample for this program evaluation.

Comparison Part-day Kindergartens

The ten pilot full-day kindergartens funded by the Department of Education were compared with eight part-day kindergartens. The comparison kindergartens were randomly selected from a listing of all part-day kindergartens offered by public school districts that were awarded funds for a pilot full-day kindergarten model or public school districts that did not participate in the request for proposal competition. A total of 164 part-day kindergartens in 86 schools constituted the population of part-day kindergartens from which comparison kindergartens were selected.

The 164 schools were categorized as rural (N=78) or urban (N=86). Three urban schools and seven rural schools were randomly selected from the 164 possible schools. Following the random selection of these classrooms, permission was secured from the district superintendents, building principals, and classroom teachers to include the part-day kindergartens in the

evaluation. While ten part-day kindergartens were chosen for comparison purposes, permission to observe was obtained for only eight part-day kindergartens. This group of randomly selected kindergartens served as the comparison part-day kindergartens for the evaluation.

Data Measurements

The measures used for this program evaluation were based on the primary evaluation questions and a theoretical description of high quality kindergarten programming (see Appendix A). In addition to the variables identified by the primary evaluation questions, the measurement methods also needed to ensure that the following variables were documented for both full-day and part-day kindergartens:

- curriculum content (e.g., literacy, mathematics);
- teaching methods used;
- level of student engagement and motivation;
- configuration of the classrooms, including number of teachers, number of students, and the backgrounds of students;
- complexity of information provided (e.g., rote memorization, synthesis of information); and
- family-school communication.

While the primary evaluation questions of this study relate to the comparison of full-day kindergartens and part-day kindergartens, an additional benefit of this study can be the start of work to determine the overall quality of kindergarten programming in the state.

A description of the specific measures used for this evaluation follow.

Measures: Kindergarten Classroom Activities

The measures used to collect data about classroom activities, the content of classroom activities, and teachers' behaviors in the classroom included:

- a. The *SNAPSHOT* (Ritchie, Howes, Kraft-Sayre, & Weiser, 2002), with adaptations and extensions specifically created by Center for Disabilities Studies personnel for this evaluation. This observational instrument measures how time is used in kindergarten classrooms, including the type of groups used, the curriculum content areas addressed, and the type of teaching styles used by the classroom personnel. In addition to the original categories created by Ritchie, et al., new observational categories were added, including teacher directiveness, behavior guidance, cognitive complexity, group size, and materials. The additions were added to capture the components of high quality kindergartens as identified in the literature mentioned in Appendix A. Three observations of each of the pilot and comparison kindergartens were conducted throughout the school year; one observation in November, one in February, and one in May.

- b. The *Teacher Child Interaction Scale* (TCIS) (Farren & Collins, rev. 2001) is an observation scale used to document eleven specific teacher behaviors related to interactions with students in the classroom. These eleven behaviors were observed for amount, quality, and appropriateness. The scale is widely used for research purposes to document the quality of interactions between teachers and children in educational and care settings. These observations occurred at the same time as the *SNAPSHOT* observations.
- c. The *Classroom Diagram* was created by Center for Disabilities Studies personnel as a way to document the configuration of the kindergarten rooms observed. An initial room diagram was drawn during the first classroom observation in November 2004. If the room arrangement was different upon subsequent visits, a new diagram was created by the observer.
- d. The *Equipment and Materials List* was used by the classroom observer to document the materials and equipment present in each classroom observed (Kritchevsky and Prescott 1988). This documented the equipment and materials available to the teachers and students in each of these classrooms. A checklist of common kindergarten classroom materials was developed based on suggested kindergarten classroom materials supply lists. Observers indicated if the materials were accessible to students and if they were being used by students.
- e. *Teacher Lesson Plans* were collected from the classroom teachers three times during the school year on the same days as the observations of the classrooms. This provided the authors with the curriculum plans of the teachers for each of the classrooms for each of the observation days and indicated how classroom time was planned to be used and what activities were planned for those days. The lesson plans were collected in the format used by teachers. No standard format was required for the evaluation.
- f. *Weekly Classroom Schedules* were collected once from each of the teachers. Teachers completed a standard data collection form developed by Center for Disabilities Studies personnel. This schedule provided information regarding children's weekly experiences in each of the kindergartens.
- g. An *Adult Intervention Schedule* was collected once from each of the teachers. Teachers completed a data collection form developed by Center for Disabilities Studies personnel to provide information about the teachers and other educational professionals providing educational services to individual students or small groups of students either in the classroom or in another location in the school.

Measures: Student Outcomes

To document the characteristics of the students enrolled in the ten pilot and eight comparison kindergartens and to determine the skills they acquired during their enrollment in their kindergartens, the following measures were used:

- a. A *Student Demographic Information* form was completed for each student from information reported by their teachers, present in their student record folders, and from information available through the Delaware Department of Education.
- b. *Student Academic Progress* was assessed by collecting the following information:
 1. *Student Report Card Grades* were collected at mid-year and in June to describe the students' acquisition of skills related to 19 performance indicators of the Delaware kindergarten standards.
 2. The *DIBELS (Dynamic Indicators of Basic Early Literacy Skills)* was used as a standardized, individually administered measure of students' early literacy development. This instrument measures students' pre-reading and early reading skills. It includes measures for phonological awareness, alphabetic understanding, and automaticity and fluency. Each of the subscale measures has been shown to be reliable and valid for predicting later reading proficiency in kindergarten and first grade students. Students' *DIBELS* scores were first collected between late January and early February. The second set of *DIBELS* scores were collected during the middle weeks of May. This collection schedule followed the schedule set by the Reading First guidelines for assessing student progress.
- c. The *School Liking and Avoidance Questionnaire*, adapted from Ladd and Price, was used to measure students' levels of stress related to their attendance of kindergarten. The questionnaire is verbally administered to each student and contains 14 Likert scale items, nine of which are used to measure students' positive response to school and five of which are used to measure children's desire to avoid school. The *School Liking and Avoidance Questionnaire* was administered between the last two weeks of April and the first week of May.

Measures: Teachers' Experiences and Perceptions of Kindergarten

The experiences and perspectives of both full-day and part-day kindergarten teachers were measured using an interview protocol that was administered by a trained interviewer. The interviewer collected demographic information about the teachers, a description of their assessment of the needs of children in their classrooms, an assessment of the needs of the children's families, and information regarding how they organized instructional time, and strategies used to develop family-school communication and relationships. The teachers were also asked about their perceptions of full-day and part-day kindergarten.

Measures: Administrators' Experiences and Perceptions of Kindergarten

The experiences and perspectives of building principals about both full-day and part-day kindergarten were measured using an interview protocol that was administered by a trained interviewer. The interviewer collected demographic information about the school buildings in which the kindergarten programs were housed, the administrators' background and experiences, and their perceptions of full-day and part-day kindergarten.

Measures: Family Members' Perceptions of Kindergarten

Family members' perceptions of their children's experiences in kindergarten and family members' perceptions about full-day and part-day kindergarten were collected using a survey. The survey was developed by the authors, kept to a sixth grade reading level and distributed to each student's household by mail. The survey collected information about each family's demographics as well as the parent or guardian's perceptions of part-day and full-day kindergarten, family-school communication and relationships, and their children's school experiences and levels of stress.

A summary of all of the data collection strategies used for this program evaluation are found in Appendix B.

Data Collectors

This program evaluation necessitated two types of data collectors: classroom observers and quantitative data collectors. The quantitative data collections were Center for Disabilities Studies personnel trained to collect data from school records and established data bases. They also constructed data forms to collect standard information such as a listing of classroom materials and equipment.

The classroom observers were a group of trained professionals with experience as teachers and administrators in public schools. The observers attended four training sessions, two in September 2004, one in November 2004 and one in March 2005. The observers were trained to use the observation tools and establish reliability in collecting data using the instruments mentioned above. Specifically, for the *SNAPSHOT* and the *Teacher Child Interaction Scale*, the observers obtained at least .80 reliability when compared with a second observer.

The observers also served as a consistent communication liaison between the pilot and comparison kindergartens and the program evaluation personnel. They communicated specific information about the kindergartens, the students, and the types of interactions and curriculum content being taught. Their experience as teachers and administrators allowed them to be skilled and objective observers.

Data Handling and Analysis

All data collected from the full-day and part-day kindergartens was immediately coded and entered into software designed to analyze social science data. All raw data was then stored in locked cabinets while all electronic data was kept on a secure server in files with password protection accessible only to personnel working on the program evaluation. For student information, identifying information was removed and a student identification number assigned in order to protect the identity of the students.

This evaluation of the pilot full-day kindergartens and the eight comparison part-day kindergartens is designed to be a descriptive evaluation. Therefore, data for the two types of kindergartens are reported in frequencies, with means and modes calculated and reported for each variable. Where appropriate, a comparison test between part-day and full-day kindergartens has been conducted (e.g., t-tests or chi squares).

Sample

The ten pilot full-day kindergartens and the eight part-day kindergartens were operated by districts or charter schools in buildings housing other kindergartens or other grade levels. Below is information providing a profile of the kindergarten classrooms, students, and teachers.

Tables 1 and 2 provide information about the districts or charter school participating in this evaluation. The ten pilot full-day kindergartens and the eight part-day kindergartens were housed in programs that operate, in all but one case, additional kindergarten classrooms. The number of part-day and full-day kindergarten classrooms operating in these schools by the districts in the fall of 2004 is indicated in the two tables.

Table 1. Pilot full-day kindergartens and the number of part-day and full-day classrooms in each school building.

School District	School Name	Number of Classrooms	
		Part -Day	Full-Day
Appoquinimink	Appoquinimink Early Childhood Center	20	13
Capital	Fairview Elementary School	0	3
Charter School	Academy of Dover Charter School	0	3
Indian River	Frankford Elementary School	0	4
Lake Forest	Lake Forest South Elementary School	4	2
Laurel	Dunbar Elementary School	0	9
Red Clay Consolidated	Baltz Elementary School	2	4
Seaford	West Seaford Elementary School	0	4
Smyrna	Smyrna Kindergarten Center	0	8
Woodbridge	Woodbridge Elementary School	0	7

Table 2. Comparison part-day kindergartens and the number of part-day and full-day classrooms in each school building.

School District	School Name	Number of Classrooms	
		Part -Day	Full-Day
Red Clay Consolidated	Baltz Elementary School	2	4
Red Clay Consolidated	Linden Hill Elementary School	6	2
Caesar Rodney	Simpson Elementary School	2	0
Caesar Rodney	Frear Elementary School	2	1
Indian River	Long Neck Elementary School	4	1
Indian River	Georgetown Elementary School	4	6
Milford	Morris Early Childhood Center	24	0
Cape Henlopen	Milton Elementary School	4	0

Information about the number of hours students spend in the full-day and part-day kindergartens, the number of students per class, and some background information about the students is provided in Table 3.

Table 3. Full- and Part-day Kindergarten Model Comparisons

Model Type		Class Size	Teaching Hours	Special Education Eligibility	Free or Reduced Lunch Eligibility	Teachers per Class
Full-Day (N=10)	Avg.	20	6	4.1 (20.5%)	10.4 (52.0%)	1.4
	Range	17-28	5.2-6.7	0-7 students	6-14 students	1-2
Part-Day (N=8)	Avg.	18.25	2.5	1.75 (9.6%)	4.25 (23.3%)	1
	Range	15-24	2.5-3.0	0-10 students	0-10 students	1

In addition to the number of hours per day that students were receiving instruction, the ten full-day pilot kindergartens and the eight part-day kindergartens were different across the following variables:

- number of students enrolled in the class;
- number of students receiving special education services;
- number of students eligible for free or reduced lunch; and
- number of teachers assigned to the classroom.

In all cases, the pilot full-day kindergartens had greater numbers in each of these categories. As a group, the full-day pilot kindergartens could be considered to be serving a group of children at-risk for lower academic achievement due to the higher rates of poverty and special needs.

Student Demographics

The students participating in the pilot full-day kindergartens and the students in the comparison part-day programs were different in terms of ethnicity but essentially the same when compared on the variable of language spoken. Table 4 illustrates that the pilot full-day

kindergartens served many more students of color (almost 50%) than did the part-day kindergartens (less than 40%).

Table 4. Ethnicity of Students in Full-day and Part-day Kindergartens.

Ethnicity	Full-Day	Part-Day	Total
White	106 (50.5%)	96 (62.3%)	202 (55.5%)
African American	72 (34.3%)	32 (20.8%)	104 (28.6%)
Hispanic	31 (14.7%)	22 (14.3%)	53 (14.5%)
Other	1 (0.5%)	4 (2.6%)	5 (1.4%)
Total	210 (100.0%)	154 (100.0%)	364 (100.0%)

The students enrolled in the pilot full-day kindergartens were just as likely to have spoken English as their peers enrolled in part-day kindergartens. Approximately 88% of the students in both groups were English language speakers while 10-12% spoke another language (see Table 5 for details).

Table 5. Language Spoken by Students in Full-day and Part-day Kindergartens.

Language Spoken	Full-Day	Part-Day	Total
English	135 (87.7%)	112 (88.9%)	247 (88.2%)
Spanish	18 (11.7%)	12 (9.5%)	30 (10.7%)
Other	1 (0.6%)	2 (1.6%)	3 (1.1%)
Total	154 (100.0%)	126 (100.0%)	280 (100.0%)

Results

After nine months of data collection (from October 2004 through June 2005) and the subsequent analysis, results of the evaluation work follow. The sections presented below address the primary evaluation questions.

Classroom Instructional Activities and Content

Each of the ten full-day pilot kindergartens and the eight part-day comparison kindergartens were observed for content of instruction, classroom activities, type of teacher-student engagement, teacher-student directiveness, and cognitive complexity of instructional activities provided during the instructional day. The pilot full-day kindergartens and the comparison half-day kindergartens were compared on these variables. Results of these comparisons follow.

Instructional Content

Using the SNAPSHOT observation instrument, the curriculum content provided during the school day to kindergarten students was collected. Eight curriculum areas were documented. Table 6 provides a summary of the content of instruction observed in the kindergartens.

Table 6. Comparison of Full- and Part-day Kindergarten Instructional Content

Content Area	Full-day (6 hrs/day)		Part-day (2 ½ hrs/day)	
	% of Day	Minutes per Day	% of Day	Minutes per Day
Literacy/Reading	38.1%	137	38.8%	58
Writing	7.4%	27	8.3%	13
Mathematics	9.5%	34	15.2%	23
Science	10.6%	38	12.3%	18
Social Studies	8.5%	31	2.5%	4
Gross Motor	4.3%	15	0.7%	1
Fine Motor	10.8%	39	14.7%	22
Aesthetics	10.8%	39	7.5%	11

Due to the fact that the amount of time children spend in full-day kindergarten is approximately two and a half times the amount that children spend in part-day kindergarten, it follows that the number of minutes of literacy instruction in full-day kindergartens (137 minutes per day) was almost two and a half times as much as in part-day kindergartens (58 minutes per day). Therefore differences in the amount of time spent on instruction in the areas of reading, writing, and science are significantly greater in full-day kindergartens than in part-day kindergartens ($p < .001$). However, it is important to note that the percentages of time spent on instruction in the area of literacy are similar (38.1% for full-day kindergartens and 38.8% for part-day kindergartens).

As discussed in Appendix A, a high quality kindergarten provides instruction to all aspects of children’s development. In the full-day kindergartens, the amount of time spent on important developmental instruction such as gross motor (15 minutes versus 1 minute) and aesthetics (e.g., art, music, and movement (39 minutes versus 11 minutes) was significantly greater in full-day kindergartens ($p < .001$) when compared to the part-day kindergartens.

Classroom observations of the full-day and part-day kindergartens indicated that 56.4% of instructional time (203 minutes) in full-day kindergartens was spent on learning activities that developed skills in more than one content area. For part-day kindergartens, 47.3% of the instructional time (71 minutes) was spent on learning activities that developed skills in more than one content area. Instruction that develops skills in more than one area is an important means of developing academic skills because integrated learning is more salient and meaningful to children and has a greater likelihood to be retained (Bowman, Donovan, & Burns, 2001).

Students in both full- and part-day kindergartens spent over half of their time (full-day 55%, part-day 54%) engaged in learning at the knowledge level or lowest level of cognitive complexity (see Table 7). Students in full-day kindergartens spent 198 minutes receiving

instruction at the knowledge level while students in part-day kindergarten spent 81 minutes receiving instruction at the knowledge level. However, students in full-day kindergarten received proportionally more instruction at the highest conceptual level, analyzing and evaluating, (5.3%) than students in part-day kindergartens (0.2%).

Table 7. Comparison of Full- and Part-day Kindergarten Complexity of Cognitive Activities

Complexity of Content	Full-day (6 hrs/day)		Part-day (2 ½ hrs/day)	
	% of Day	Minutes per Day	% of Day	Minutes per Day
Knowledge	55.1%	198	54.1%	81
Understanding	16.1%	58	19.4%	29
Applying	23.7%	85	26.5%	40
Analyzing & Evaluating	5.3%	19	0.2%	1

Weekly Time Schedule and Lesson Plans

Teachers submitted weekly time schedules indicating the amount of time spent in the content areas as well as lesson plans for the days on which they were observed. From these schedules and lesson plans, the amount of time per week spent on various content areas was calculated.

From this analysis it was determined that literacy development activities constituted approximately 43% of the curriculum content provided during the instructional day for full-day kindergartens. For part-day kindergartens, approximately 40% of the curriculum content during the instructional day was focused on literacy development activities. These findings are based on teachers’ self-reports of the amount of time they spend on each instructional content area. These results are slightly higher than the findings from the SNAPSHOT observation data.

Based on the teachers’ lesson plans and schedules, it was also possible to calculate the approximate amount of time teachers had planned to address other curriculum content areas. Table 8 indicates the amount of time teachers planned to spend in each of six curriculum content areas.

Table 8. Comparison of Time Planned to be Spent in Each Curriculum Content Area According to Teachers’ Lesson Plans

Curriculum Content Area	Full-day (6 hrs/day)	Part-day (2 ½ hrs/day)
	% of Planned Day*	% of Planned Day*
Literacy Activities	43%	40%
Math Activities	18%	19%
Aesthetic Activities	12%	9%
Science Activities	12%	5%
Gross Motor Activities	8%	3%
Computer Activities	1%	1%

*Does not equal 100%. Non-curriculum content activities account for additional time.

Student Outcomes

Two measures of student outcomes were collected for the students in the part-day and full-day kindergartens. These were the *DIBELS* literacy development assessment scores and the students' report card grades indicating if they had acquired eight of the performance indicators related to the English/Language Arts and Mathematics kindergarten standards.

DIBELS (Dynamic Indicators of Basic Early Literacy Skills)

To measure students' literacy skill development, the *DIBELS* (Dynamic Indicators of Basic Early Literacy Skills) was used. The *DIBELS* assesses students' skills in initial word sounds, letter recognition, and the ability to sound out simple words. In late January and early February 2005 the first *DIBELS* measurement was conducted with all students in the part-day and full-day kindergartens. In May 2005, a follow-up measurement of the *DIBELS* was conducted with the students. Approximately 220 full-day students were assessed while approximately 180 part-day students were assessed.

Four of the *DIBELS* subscales were tracked and reported for the students in the full-day and part-day kindergartens. The "Letter Naming Fluency" subscale measures students' abilities to verbally name as many letters as possible that are presented to him or her within one minute. The "Initial Sound Fluency" subscale measures students' abilities to recognize and produce the initial sound in a word that is orally presented to him or her. This subscale measures phonological awareness. The "Phonemic Segmentation Fluency" subscale also measures phonological awareness in words of three or four phonemes. The final subscale used with the kindergarteners was the "Nonsense Word Fluency" subscale. This subscale measures students' abilities to identify and blend vowel/consonant combinations that are nonsense words. Each of the *DIBELS* subscales have recommended periods of time for administration to students and recommended cutoff scores to indicate if a student is likely to be a reader or to possibly have a problem reading (Good & Kaminski, 2002).

Using the criteria established by the authors of the *DIBELS*, each student's subscale scores were categorized into one of three categories: at-risk, emerging, and low-risk. Students whose scores placed them in the "at-risk" category had only a 20% likelihood of being readers by the end of second grade. Students whose scores placed them in the "emerging" category had a 50% likelihood of being readers by the end of second grade. Students whose scores placed them in the "low-risk" category had at least an 80% chance of being readers by the end of second grade (Good, Simmons, Kame'enui, Kaminski, & Wallin, 2002).

The overall trend of results for students in the part-day and full-day kindergartens indicates that students in full-day kindergartens score higher than students in part-day kindergartens on the *DIBELS* subscales (see Tables 9, 10, 11 and 12). A greater percentage of children attending full-day kindergarten moved from the at-risk category into the emerging or low-risk categories than did those children attending part-day kindergartens. Also, by the end of the school year, more full-day kindergarten students were in the low risk category than part-day kindergarten students. This occurred despite the greater proportion of children enrolled in the full-day kindergartens who had risk factors associated with academic challenges.

Table 9. Summary of Full-day and Part-day Kindergarten Student *DIBELS* Letter Naming Subscale Mid-year and End-year Results by Risk Category

	Mid-year Measurement			Year-end Measurement		
	% At-risk	% Emerging	% Low Risk	% At-risk	% Emerging	% Low Risk
Full-day students (n=228)	11.0	9.2	79.8	2.2	5.5	92.3
Part-day students (n=181)	14.6	10.2	75.2	5.2	8.9	85.8
All students (N=385)	12.5	9.6	77.9	3.5	7.0	89.6

Table 10. Summary of Full-day and Part-day Kindergarten Student *DIBELS* Initial Sound Fluency Subscale Mid-year and End-year Results by Risk Category

	Mid-year Measurement			Year-end Measurement		
	% At-risk	% Emerging	% Low Risk	% At-risk	% Emerging	% Low Risk
Full-day students (n=228)	13.7	43.9	42.4	2.4	25.1	72.5
Part-day students (n=181)	15.3	54.9	29.9	4.7	45.0	50.4
All students (N=385)	14.3	48.4	37.2	3.4	33.8	62.8

Table 11. Summary of Full-day and Part-day Kindergarten Student *DIBELS* Phoneme Segmentation Subscale Mid-year and End-year Results by Risk Category

	Mid-year Measurement			Year-end Measurement		
	% At-risk	% Some Risk	% Low Risk	% At-risk	% Some Risk	% Low Risk
Full-day students (n=228)	39.9	9.2	50.9	17.1	5.5	77.3
Part-day students (n=181)	58.0	14.6	27.4	26.7	12.6	60.7
All students (N=385)	47.3	11.4	41.3	21.2	8.5	70.3

Table 12. Summary of Full-day and Part-day Kindergarten Student *DIBELS* Nonsense Word Fluency Subscale Mid-year and End-year Results by Risk Category

	Mid-year Measurement			Year-end Measurement		
	% At-risk	% Some Risk	% Low Risk	% At-risk	% Some Risk	% Low Risk
Full-day students (n=228)	44.0	19.0	37.0	17.0	8.0	75.0
Part-day students (n=181)	57.0	15.0	28.0	46.0	15.0	50.0
All students (N=385)	50.0	17.0	33.0	25.0	11.0	64.0

Considering each of the *DIBELS* subscales, at least 72% of all full-day kindergarten students had scores that indicated they would be likely to be readers by the end of second grade. For part-day kindergarten students, students’ scores on two of the subscales indicated that as low as 50% of students would be readers by the end of second grade. Based on the results of the *DIBELS* scores, students who attended the full-day kindergartens had developed their literacy skills earlier and were more likely to be established readers by second grade than were their peers who attended the comparison part-day kindergarten programs.

Students’ Acquisition of Skills According to Report Cards

At the conclusion of the 2004-2005 school year, grades were collected to describe the students’ outcomes on eight performance indicators of the kindergarten standards. It was possible to collect end-of-the-year data for approximately 220 full-day students and 180 part-day students. The data was available for the following performance indicators:

English Language Arts:

- Identifies upper- and lower-case letters (Kindergarten Standard K.122)
- Understands concept of beginning sounds (Kindergarten Standard K.125)
- Knows the sounds associated with almost all consonants (Kindergarten Standard K. 127)
- Identifies 5-10 familiar words, including their names (Kindergarten Standard K.128)
- Uses conventional spelling for familiar words (Kindergarten Standard K.104)
- Understands concept of rhyme (Kindergarten Standard K.124)

Mathematics:

- Sorts and classifies objects by a simple attribute (Kindergarten Standard K.219)
- Names and sorts figures by shape: square, rectangle, triangle, and circle. (Kindergarten Standard K.214)

The overall trend of the outcomes on the kindergarten performance indicators for students enrolled in the part-day and full-day kindergartens was that proportionately more students in full-day kindergartens achieved the performance indicators than students in part-day kindergartens on

the performance indicators of “identifies upper and lower case letters,” “understands concept of beginning sounds,” “knows the sounds associated with all consonants,” “identifies 5-10 words,” “sorts and classifies objects by a simple attribute,” and “names and sorts figures by shape.” A similar proportion of students enrolled in full-day and part-day kindergartens achieved the performance indicator of “uses conventional spelling for familiar words.” Only on the performance indicator of “understands concept of rhyme” did proportionally more students enrolled in the part-day kindergartens achieve this kindergarten performance indicator. For three of these six indicators, students attending full-day kindergartens acquired the skills at a significantly ($p < .05$) higher rate than students in part-day kindergartens. This analysis indicates that despite the greater proportion of children in the full-day kindergartens who had academic risk factors, a greater proportion of children in the full-day kindergartens were achieving most of the performance indicators analyzed for this report by the end of the year (see Table 13 for details).

Table 13. Students’ Achievement of Eight Performance Indicators from the Delaware Kindergarten Standards

Kindergarten Performance Indicators		Full-day % Achieved	Part-day % Achieved	Total % Achieved
Identifies upper and lower case letters (K.122)*	n	176	121	297
	%	92.6%	86.4%	90.0%
	N	190	140	330
Understands concept of beginning sounds (K.125)*	n	139	79	218
	%	88.0%	64.2%	77.6%
	N	158	123	281
Knows the sounds associated with almost all consonants (K.127)	n	139	79	218
	%	88.0%	64.2%	77.6%
	N	158	123	281
Identifies 5-10 words (K.128)	n	148	109	257
	%	94.3%	88.6%	91.8%
	N	157	123	280
Uses conventional spelling for familiar words (K.104)	n	82	65	147
	%	59.9%	60.2%	60.0%
	N	137	108	245
Understands concept of rhyme (K.124)	n	120	78	198
	%	87.0%	94.0%	89.6%
	N	138	83	221
Sorts and classifies objects by a simple attribute (K.219)	n	152	85	237
	%	96.8%	90.4%	94.4%
	N	157	94	251
Names and sorts figures by shape (K.214)*	n	133	77	210
	%	93.7%	74.8%	85.7%
	N	142	103	245

* $p < .05$

Student Responses to School

Perceptions about School

Using the *School Liking and Avoidance Questionnaire*, 102 students in the full-day (n=57) and part-day (n= 45) kindergartens were interviewed about their perceptions of school. The vast majority of students in both kindergarten models indicated that school was a fun place (85.6%) and that they were happy when they were at school (83.3%). Responses of students in full-day and part-day kindergartens did not differ significantly for all 14 of the items.

While a portion of all kindergarten students in both the part-day and full-day kindergartens reported being tired at the end of the school day, there was a moderately higher percent of students in full-day kindergartens who felt tired at the end of the school day than their part-day peers. This trend was not statistically significant.

One hundred-fifty-two (152) parents of the children enrolled in full-day and part-day kindergartens were also asked about their children’s responses to kindergarten using similar questions as those that were asked of the children. The overwhelming majority of parents (86%), whether their children attended part-day (n=70) or full-day (n=82) programs, reported that their children looked forward to going to school (see Table 14 for details).

Table 14. Parent Report of Children’s Reactions to School

Questions	Frequencies			
<i>Does your child look forward to going to school?</i>				
	No	Sometimes	Yes	Total
Full-day	2 (2.5%)	9 (11.1%)	70 (86.4%)	81 (100.0%)
Part-day	2 (2.9%)	7 (10.0%)	61 (86.9%)	70 (100.0%)
Total	4 (2.6%)	16 (10.6%)	131 (86.8%)	151 (100.0%)
<i>Does your child enjoy school activities or events?</i>				
	No	Sometimes	Yes	Total
Full-day	1 (1.2%)	3 (3.7%)	78 (95.1%)	82 (100.0%)
Part-day	0 (0.0%)	3 (4.3%)	67 (95.7%)	70 (100.0%)
Total	1 (0.7%)	6 (3.9%)	145 (95.4%)	152 (100.0%)
<i>Does your child like school?</i>				
	No	Sometimes	Yes	Total
Full-day	3 (3.7%)	6 (7.3%)	73 (89.0%)	82 (100.0%)
Part-day	1 (1.4%)	4 (5.7%)	65 (92.9%)	70 (100.0%)
Total	4 (2.6%)	10 (6.6%)	138 (90.8%)	152 (100.0%)

Children themselves also indicated that they enjoyed school and looked forward to attending school. Whether they were attending full-day or part-day kindergarten, the overwhelming majority of children felt that school was a fun place to be, that they were happy in school, and that they liked being in school (see Table 15 for details).

Table 15. Children’s Reactions to Full-day and Part-day Kindergarten

Questions	Frequencies			
<i>Do you feel school is a fun place to be?</i>				
	No	Sometimes	Yes	Total
Full-day	5 (8.8%)	3 (5.2%)	49 (86.0%)	57 (100.0%)
Part-day	5 (11.1%)	1 (2.2%)	39 (86.7%)	45 (100.0%)
Total	10 (9.8%)	4 (3.9%)	88 (86.3%)	102 (100.0%)
<i>Do you like to come to school?</i>				
	No	Sometimes	Yes	Total
Full-day	6 (10.5%)	6 (10.5%)	45 (79.0%)	57 (100.0%)
Part-day	5 (11.1%)	2 (4.5%)	38 (84.4%)	45 (100.0%)
Total	11 (10.8%)	8 (7.8%)	83 (81.4%)	102 (100.0%)
<i>Do you like being in school?</i>				
	No	Sometimes	Yes	Total
Full-day	4 (7.0%)	3 (5.3%)	50 (87.7%)	57 (100.0%)
Part-day	5 (11.1%)	2 (4.4%)	38 (84.5%)	45 (100.0%)
Total	9 (8.8%)	5 (4.9%)	88 (86.3%)	102 (100.0%)
<i>Do you feel happy when you're at school?</i>				
	No	Sometimes	Yes	Total
Full-day	4 (7.0%)	4 (7.0%)	49 (86.0%)	57 (100.0%)
Part-day	5 (11.1%)	2 (4.4%)	38 (84.5%)	45 (100.0%)
Total	9 (8.8 %)	6 (5.9%)	87 (85.3%)	102 (100.0%)
<i>Do you hate school?</i>				
	No	Sometimes	Yes	Total
Full-day	52 (91.2%)	4 (7.0%)	1 (1.8%)	57 (100.0%)
Part-day	42 (93.3%)	1 (2.2%)	2 (4.5%)	45 (100.0%)
Total	94 (92.2%)	5 (4.9%)	3 (2.9%)	102 (100.0%)

End-of-school Year Reports of Continued Fatigue

All parents completing the parent survey responded to the question about their children being tired at the end of the school day. When asked if their children were tired at the end of the school day in October, parents in both the full-day and part-day kindergartens indicated that their children were generally not tired (68% and 62% respectively). There was not a statistical difference in the response rates of parents in these two groups (see Table 16 for details).

Parents who did report that their children were tired at the end of the school day in October (n=44 parents of students enrolled in full-day kindergartens and n=26 parents of students enrolled in part-day kindergartens) were asked if their children continued to be tired at the end of the school day in May. Parents of nine (11%) children enrolled in full-day

kindergarten said their children remained tired at the end of the day while three parents (4%) of children enrolled in part-day kindergarten said their children remained tired at the end of the day.

Table 16. Parent Report of Children’s Tiredness in Full-day and Part-day Kindergarten

Questions	Frequencies			
<i>During September and October of this school year was your child very tired at the end of the school day?</i>				
	No	Yes	Total	
Full-day	50 (61.7%)	31 (38.3%)	81	(100.0%)
Part-day	47 (68.1%)	22 (31.9%)	69	(100.0%)
Total	97 (64.7%)	53 (35.3%)	150	(100.0%)
<i>If you answered yes to the question above, please answer: Is you child still tired at the end of the school day?</i>				
	No	Sometimes	Yes	Total
Full-day	34 (77.3%)	1 (2.3%)	9 (20.5%)	44 (100.0%)
Part-day	22 (84.6%)	1 (3.8%)	3 (11.5%)	26 (100.0%)
Total	56 (80.0%)	2 (2.9%)	12 (17.1%)	70 (100.0%)

Parent Perceptions of Full-day and Part-day Kindergarten

In general, there were slight differences in the proportion of parents with children enrolled in full-day kindergarten programs who felt positively about the benefits of full-day kindergarten compared to parents who had children enrolled in part-day kindergarten. However, the vast majority of parents who had children enrolled in part-day kindergarten ascribed academic and social benefits to full-day kindergarten. Specifically, 89% of all parents indicated that full-day kindergarten would better prepare their children for first grade, 94% felt full-day kindergarten offered more time for learning, 93% felt full-day kindergarten offered more time for children to work with other children and 85% felt that full-day kindergarten allowed teachers to get to know their children better. There was no statistically significant difference between the answers of parents with children enrolled in full-day kindergarten and parents with children enrolled in part-day kindergarten for these items.

Seventy-three percent (73%) of all parents responding to the survey did not feel that full-day kindergarten made children too tired and 74% of all parents felt that full-day kindergarten did not keep their children away from home for too long a period of time. Eighty-four percent (84%) of all parents (both those with children enrolled in full-day and part-day kindergartens) disagreed with the statement that five-year-old children were not ready for full-day kindergarten. Again, there were no statistical differences in the responses to these items between parents with children enrolled in full-day kindergarten and parents of children enrolled in part-day kindergarten (see Table 17 for details).

Table 17: Parents' Reactions to Full-day and Part-day Kindergarten

Questions	Frequencies			
<i>Full-day kindergarten will better prepare my child for first grade</i>	Yes		Total	
Full-day	80 (97.6%)	82	(100.0%)	
Part-day	55 (78.6%)	70	(100.0%)	
Total	135 (88.8%)	152	(100.0%)	
<i>Full-day kindergarten offers more time for learning</i>	Yes		Total	
Full-day	80 (98.8%)	81	(100.0%)	
Part-day	62 (88.6%)	70	(100.0%)	
Total	142 (94.0%)	151	(100.0%)	
<i>During full-day kindergarten, children have more time to learn how to work together with other children</i>	Yes		Total	
Full-day	81 (98.8%)	82	(100.0%)	
Part-day	59 (85.5%)	69	(100.0%)	
Total	140 (92.7%)	151	(100.0%)	
<i>During full-day kindergarten, teachers get to know their children better</i>	Yes		Total	
Full-day	75 (91.5%)	82	(100.0%)	
Part-day	53 (76.8%)	69	(100.0%)	
Total	128 (84.8%)	151	(100.0%)	
<i>Children become too tired in a full-day kindergarten</i>	Yes		Total	
Full-day	4 (4.9%)	81	(100.0%)	
Part-day	19 (27.1%)	70	(100.0%)	
Total	23 (15.2%)	151	(100.0%)	
<i>Kindergarten-aged children are not ready for a full-day kindergarten</i>	Yes		Total	
Full-day	4 (5.0%)	80	(100.0%)	
Part-day	9 (12.9%)	70	(100.0%)	
Total	13 (8.7%)	150	(100.0%)	
<i>Children in a full-day kindergarten are away from home for too long</i>	Yes		Total	
Full-day	6 (7.4%)	81	(100.0%)	
Part-day	14 (20.3%)	69	(100.0%)	
Total	20 (13.3%)	150	(100.0%)	

Readiness for Full-day Kindergarten

The majority of parents, whether their children attended full-day kindergarten or part-day kindergarten, felt that their children were ready for full-day kindergarten. Over 96% (N = 78) of parents with children in full-day kindergarten felt that their children were ready for full-day kindergarten in September and over 84% (N = 57) of parents with children attending part-day

kindergarten felt that their children had been ready for full-day kindergarten in September (see Table 18).

Table 18. Parents' Perceptions about their Children's Readiness for Kindergarten at the Beginning of the School Year

Kindergarten Attending:	No, not ready for full-day kindergarten	Yes, ready for full-day kindergarten	Total
Full-day Kindergarten	3 (3.7%)	78 (96.3%)	81 (100.0%)
Part-day Kindergarten	11 (16.2%)	57 (83.8%)	68 (100.0%)
Total	14 (9.4%)	135 (90.6%)	149 (100.0%)

Overall, parents felt that full-day kindergarten promoted better social development in children than did attendance in part-day kindergarten. Parents of children enrolled in both part-day and full-day kindergarten responded to these items similarly and there were no statistically significant differences in the responses (see Table 19 for details).

Table 19. Parents' Responses to Children Becoming More Socially Adjusted by Attending Full-day and Part-day Kindergarten

Questions	Frequencies			
<i>Children become more socially adjusted by going to a full-day kindergarten</i>				
Kindergarten Attending	Disagree	No Opinion	Agree	Total
Full-day	5 (6.2%)	4 (4.9%)	72 (88.9%)	81 (100.0%)
Part-day	11 (15.7%)	6 (8.6%)	53 (75.7%)	70 (100.0%)
Total	16 (10.6%)	10 (6.6%)	125 (82.8%)	151 (100.0%)
<i>Children become more socially adjusted by going to a part-day kindergarten</i>				
	Disagree	No Opinion	Agree	Total
Full-day	54 (66.7%)	25 (30.9%)	2 (2.5%)	81 (100.0%)
Part-day	48 (69.6%)	14 (20.3%)	7 (10.1%)	69 (100.0%)
Total	102 (68.0%)	39 (26.0%)	9 (6.0%)	150 (100.0%)

Of all the parents surveyed, the vast majority (86%) indicated they would prefer full-day kindergarten for their children. For the parents of children currently enrolled in full-day kindergarten, 97.6% stated they preferred full-day kindergarten. For the parents of children currently in part-day kindergarten, 71.6% stated they preferred full-day kindergarten for their children (see Table 20 for details).

Table 20. Parents’ Preference for Full-day and Part-day Kindergarten

<i>If you had your choice, which type of kindergarten program would you prefer your child attend?</i>			
Kindergarten Attending	Prefer Full-day	Prefer Part-day	Total
Full-day kindergarten	80 (97.6%)	2 (2.4%)	82 (100.0%)
Part-day kindergarten	48 (71.6%)	19 (28.4%)	67 (100.0%)
Total	128 (85.9%)	21 (14.1%)	149 (100.0%)

Preference for Full-day or Part-day Kindergarten

Almost 86% (N = 128) of all parents with children enrolled in the kindergartens who responded indicated they preferred full-day kindergarten for their children. In their detailed responses, these parents indicated both academic and cognitive growth, as well as social adjustment and enjoyment as reasons they preferred full-day kindergarten for their children. Specifically parents’ responses indicated that a full-day kindergarten was preferred because:

- Children like school and look forward to the challenge;
- Preschool experiences have prepared them for a more challenging program;
- A full-day kindergarten offers benefits in terms of more time for academic learning, more time for socialization and emotional growth, and more time for the teacher to get to know their children;
- There is less pressure in a full-day kindergarten because of the extra time and the opportunity for more individualized help with learning;
- A full-day program fits families’ schedules; and
- The amount of time available for instruction in part-day kindergartens is too short.

Just over 14% (N = 21) of the parents expressed a preference for a part-day kindergarten for their children. The detailed reasons they gave included:

- 5 and 6-year-olds are not ready for a full-day of instruction; they felt they were not developmentally ready and/or that they would become too tired;
- Families are a rich source of learning, comparable to schools;
- Parents want to spend time with their children;
- Part-day kindergarten is easier for children who have had no pre-kindergarten experiences;
- Kindergarten should not be used as child care;
- Part-day is less stressful because children do not need that much structure at this age; and
- Teachers are able to provide all the information children need to know in a part-day program.

Teacher and Administrator Perceptions of Student Readiness for Full-day and Part-day Kindergarten

Teachers were asked to evaluate each student in the class to determine if teachers perceived students to be ready for full-day kindergarten. While over 90% of parents reported that they felt their children were ready for full-day kindergarten, teachers reported that just under 76% of their students were ready for full-day kindergarten (see Table 21 for details).

Table 21. Teachers’ Responses Indicating Students’ Readiness for Full-day Kindergarten

		Children in Full-day	Children in Part-day	Total
<i>Was this child ready for full-day kindergarten?</i>	n	149	97	246
	%	(79.3%)	(70.8%)	(75.7%)
	N	188	137	325

Teachers’ and Administrators’ Views on Full-day and Part-day Kindergarten

Administrators and teachers were asked to describe what they believed were the benefits and disadvantages of full-day and part-day kindergarten for children, for teachers, and for families.

When asked about benefits of full-day kindergarten, responses called attention to the impact of more instructional time, fewer children in the class and a more consistent environment for children. Specific responses included the following:

- time for teachers to provide a deeper, richer curriculum;
- time for teachers to get to know children better and identify children’s needs sooner;
- more time to individualize instruction and interventions;
- opportunities for more one-on-one and small group time with the teacher;
- more opportunities to support social development;
- time for teachers to teach in developmentally appropriate ways;
- time for teachers to get to know families better;
- less money spent on child care in working families;
- consistent environment all day for children of working families;
- more educational support for families who need it; and
- same school schedule as kindergartners’ older siblings is easier for families.

When reporting benefits of full-day kindergarten, teachers included the following regarding standards and assessment. Full-day kindergarten would permit:

- smaller student load so teacher can get to know children and their individual needs better;
- keeping more anecdotal records and adding more to child's portfolio;
- allowing time to assess children's progress and plan appropriately;
- teaching without rushing in order to meet standards; and
- doing more to meet science and social studies standards.

When asked about drawbacks of full-day kindergarten, responses included:

- too long for children who were not ready for a full-day kindergarten;
- teachers need more time for planning a longer day;
- teachers may have less time to meet with other teachers to plan;
- may have less time to make phone calls and meet with parents over lunch break;
- families who want and are able to have their children home with them during the day may feel that their children spends too much time away from home;

When asked about benefits of part-day kindergarten, responses had to do with the ways in which a part-day program might support the needs of children or families or teachers in particular circumstances. Responses included:

- better suited for a child with low stamina;
- good for children who have not had preschool experience;
- may suit families with an adult home during the day;
- eases children into school routines;
- allows teachers to work part-time; and
- for those families who want or are able, children can be home with families during the day for activities or to go to appointments.

When asked about drawbacks of part-day kindergarten, responses included:

- too little time to meet curriculum standards and IEP goals;
- not enough time for assessment;
- not enough instructional time to meet standards in developmentally appropriate ways;
- too rushed, pressured, stressful;
- too little time for one-on-one time with teacher;
- teacher frustration with limited time to implement curriculum in-depth;
- not enough time for children to assimilate new learning;
- possible inconsistencies with other part-day programs children may attend;
- less preparation for first grade;
- less time to foster social development;
- less time for age-appropriate learning activities;
- less time for teachers to develop meaningful relationships with each child;
- double the amount of grading, reports to write and parent conferences to have;
- for working families, difficulty finding care for other part of the day;
- greater cost for child care; and
- difficulty transporting children between kindergarten and child care.

More on administrators' and teachers' perspectives

Seven administrators and eighteen lead teachers were asked to respond to eight statements regarding children's experiences in full-day kindergarten. They were asked to respond either "agree," "disagree," or "no opinion." In general, teachers and administrators agreed that full-day kindergarten "better prepares children for first grade," "offers more time for learning," "offers more time for children to learn how to work together with other children," "that children become more socially adjusted by attending a full-day kindergarten," "that teachers get to know their children better in a full-day kindergarten," and finally, "that kindergarten-aged children are ready for full-day kindergarten." Over half believed that "children do not become too tired in a full-day kindergarten program," with the remaining responses split between believing that they did become too tired and having no opinion.

In response to the statement "children who attend full-day kindergarten are away from home too long," just over 70% did not agree with the statement. Of those remaining, there was a nearly even split between agreement and having no opinion.

Table 22. Teachers' and Administrators' Responses to Questions Regarding Kindergarten Model Benefits

Questions	Frequencies			
<i>Full-day kindergarten better prepares children for first grade.</i>				
	Disagree	No Opinion	Agree	Total
Full-day kindergarten teachers	0 (0.0%)	0 (0.0%)	10 (100.0%)	10 (100.0%)
Part-day kindergarten teachers	1 (12.5%)	1 (12.5%)	6 (75.9%)	8 (100.0%)
Administrators	1 (14.3%)	1 (14.3%)	5 (71.4%)	7 (100.0%)
Total	2 (8.0%)	2 (8.0%)	21 (84.0%)	25 (100.0%)
<i>Full-day kindergarten offers more time for learning.</i>				
	Disagree	No Opinion	Agree	Total
Full-day kindergarten teachers	0 (0.0%)	0 (0.0%)	10 (100%)	10 (100%)
Part-day kindergarten teachers	0 (0.0%)	0 (0.0%)	8 (100%)	8 (100%)
Administrators	0 (0.0%)	0 (0.0%)	7 (100%)	7 (100%)
Total	0 (0.0%)	0 (0.0%)	25 (100%)	25 (100%)
<i>Full-day kindergarten offers more time for children to learn how to work together with other children.</i>				
	Disagree	No Opinion	Agree	Total
Full-day kindergarten teachers	0 (0.0%)	0 (0.0%)	10 (100%)	10 (100%)
Part-day kindergarten teachers	0 (0.0%)	0 (0.0%)	8 (100%)	8 (100%)
Administrators	0 (0.0%)	1 (14.3%)	6 (85.7%)	7 (100%)
Total	0 (0.0%)	1 (4.0%)	24 (96.0%)	25 (100%)
<i>Children become more socially adjusted by attending a full-day kindergarten.</i>				
	Disagree	No Opinion	Agree	Total
Full-day kindergarten teachers	0 (0.0%)	0 (0.0%)	10 (100%)	10 (100%)
Part-day kindergarten teachers	1 (12.5%)	1 (12.5%)	6 (75.0%)	8 (100%)
Administrators	1 (14.3%)	0 (0.0%)	6 (85.7%)	7 (100%)
Total	2 (8.0%)	1 (4.0%)	22 (88.0%)	25 (100%)
<i>Teachers get to know their children better in a full-day kindergarten.</i>				
	Disagree	No Opinion	Agree	Total
Full-day kindergarten teachers	0 (0.0%)	0 (0.0%)	10 (100%)	10 (100%)
Part-day kindergarten teachers	1 (12.5%)	0 (0.0%)	7 (87.5%)	8 (100%)
Administrators	1 (14.3%)	0 (0.0%)	6 (85.7%)	7 (100%)
Total	2 (8.0%)	0 (0.0%)	23 (92.0%)	25 (100%)

Table 22 Continued: Teachers' and Administrators' Responses to Questions Regarding Kindergarten Model Benefits

<i>Kindergarten-aged children are NOT ready for full-day kindergarten.</i>				
	Disagree	No Opinion	Agree	Total
Full-day kindergarten teachers	8 (80.0%)	1 (10.0%)	1 (10%)	10 (100%)
Part-day kindergarten teachers	6 (75.0%)	1 (12.5%)	1 (12.5%)	8 (100%)
Administrators	7 (100%)	0 (0.0%)	0 (0.0%)	7 (100%)
Total	21 (84.0%)	2 (8.0%)	2 (8.0%)	25 (100%)
<i>Children become too tired in a full-day kindergarten program.</i>				
	Disagree	No Opinion	Agree	Total
Full-day kindergarten teachers	6 (60.0%)	2 (20.0%)	2 (20.0%)	10 (100%)
Part-day kindergarten teachers	3 (37.5%)	3 (37.5%)	2 (25.0%)	8 (100%)
Administrators	5 (71.4%)	1 (14.3%)	1 (14.3%)	7 (100%)
Total	14 (56.0%)	6 (24.0%)	5 (20.0%)	25 (100%)
<i>Children who attend full-day kindergartens are away from home too long.</i>				
	Disagree	No Opinion	Agree	Total
Full-day kindergarten teachers	8 (80.0%)	1 (10.0%)	1 (10.0%)	10 (100%)
Part-day kindergarten teachers	5 (62.5%)	1 (12.5%)	2 (25.5%)	8 (100%)
Administrators	5 (71.4%)	2 (28.6%)	0 (0.0%)	7 (100%)
Total	18 (72.0%)	4 (16.0%)	3 (12.0%)	25 (100%)

Teacher and administrator: How should time be used in Full-day Kindergarten?

Administrators and teachers were asked how they thought additional time should be used in full-day kindergartens. They believed that the additional time would be best spent in increasing the amount of time spent on academic content areas, on teaching this content in age appropriate ways, and on the development of social skills. Specific recommendations included:

- increasing time spent on language arts, math, science and social studies;
- increasing exposure to literature in the classroom and to accessing the school library;
- increasing time for the arts, physical education, and technology specials;
- more time for fostering social skills;
- enriching and extending lessons with projects, field trips, and visitors;
- more time for age-appropriate teaching strategies such as cooperative learning, child choice activities, and hands-on activities;
- more time for teachers to develop meaningful relationships with each child; and
- more time for individual instruction for children with special needs or talents.

Summary

Children, parents, and teachers all felt that children liked school and that there were no substantive differences in their level of positive school responses according to part-day or full-day status. Also, parents; teachers; and administrators see a majority of benefits accruing to children who attend full-day kindergarten programs. What's more, the vast majority of parents and teachers felt that children are ready for this full-day kindergarten experience.

Limitations

As with any program evaluation, there are limitations to these findings. The most significant limitation to this evaluation is the lack of randomization of the pilot full-day and comparison half-day kindergartens. In addition, the profiles of the full-day kindergartens indicate that more students living in poverty, more students with disabilities, and slightly more students learning English are being served in full-day kindergartens as compared to part-day kindergartens.

In addition, while there are two student outcome measures presented, they are primarily for literacy and mathematics skills. The outcomes measures do not address the full range of developmental domains, especially social and behavioral skills, which are so important during these early years of development and transition to school.

Furthermore, there are important contextual and community variables that were not assessed for this evaluation, such as the child care experiences and other out-of-home activities in which children and families participate. In order to have a more complete understanding of the impact of full-day kindergarten, more data and analysis should occur related to students' outcomes and contextual variables.

Conclusions

Based on the results of the data analysis, it is clear that students enrolled in the pilot kindergarten programs achieved more academic skills than those in the comparison part-day kindergartens. This was the case despite the students in the pilot full-day kindergartens having many more academic risk factors than the students enrolled in the part-day kindergartens. In addition, all stakeholder groups, parents, teachers and administrators, strongly support full-day kindergarten and state that full-day kindergarten is more likely to prepare children for the academic demands of elementary school. Specific conclusions related to student outcomes, classroom instruction, and perceptions of full-day kindergarten are below.

Student Outcomes

- Students in full-day kindergartens had stronger literacy skills as measured by the *DIBELS* (Dynamic Indicators of Basic Early Literacy Skills) than students in part-day kindergartens at both mid-year and year-end measurement points.

- Only 9.7% of students in full-day kindergartens remained in the category of “at-risk” for poor literacy development at the end of their kindergarten experience in comparison to 20.7% of children in part-day kindergartens who continued to show “at-risk” characteristics for literacy development. This difference was present despite the students in full-day kindergartens having many more academic risk factors.
- Students in full-day kindergartens appear to be acquiring literacy skills at a faster rate and earlier in the year than students in part-day kindergartens.
- In six of the eight kindergarten standards performance indicators tracked, students in full-day kindergartens achieved the standards more often than their peers attending part-day kindergartens at the end of the school year. For three of those six, students attending full-day kindergartens acquired the skills at a significantly ($p < .05$) higher rate than students in part-day kindergartens.

Classroom Instruction

- Students in full-day kindergartens received almost **two and a half times as much literacy instruction** as students in the part-day kindergartens (137 minutes per day versus 58 minutes per day).
- Students in full-day kindergartens **spent significantly more time on science and writing instruction** than did students in part-day kindergartens (65 minutes per day versus 31 minutes per day).
- Students in full-day kindergartens received significantly more instructional time in fine-motor, gross motor and aesthetic activities than did students in part-day kindergartens.
- Students in full-day kindergartens had more instructional time (203 minutes-56.4%) spent on learning activities that developed skills in multiple subject areas (e.g., literacy/math, math/science/literacy, art/science) than did students in part-day kindergartens (71 minutes-47.3%).
- Students in full-day kindergartens participated in more high-level cognitive instructional activities using analyzing, synthesizing, and comparing skills, than did students in part-day kindergartens.
- Critical developmental activities in areas such as fine and gross motor skills and creative experiences (e.g., art, music, and movement) are available at a significantly greater level for students in full-day kindergartens than for students in part-day kindergartens. This is in addition to the extended time available in full-day kindergartens for literacy, mathematics and other core content instruction.

Student Responses to School

- Eighty-seven percent (87%) of students in full-day and 84% of students in part-day kindergartens have a positive attitude toward school and say they like being in school.
- Students from part-day and full-day programs do not indicate any difference in their levels of stress related to school.

Parent Responses to Kindergarten Models

- Ninety-eight percent (98%) of parents with children in full-day and 72% of parents with children in part-day kindergartens preferred to have their children enrolled in a full-day kindergarten.
- Ninety-six percent (96%) of parents with children in full-day kindergartens and 84% of parents with children in part-day kindergartens considered their five-year-olds to be ready for full-day kindergarten at the beginning of the 2004-2005 school year.
- An overwhelming majority of both parents of children in full-day and part-day kindergartens expressed that full-day kindergarten would better prepare their children for the social and academic demands of school.

Teacher and Administrator Responses to Kindergarten Models

- Teachers who work in both full-day and part-day kindergartens indicate that full-day kindergarten is more beneficial for students because it better prepares them for first grade, it provides more learning opportunities and students become more socially adjusted to school.
- Administrators with experience supervising both full-day and part-day kindergartens overwhelmingly prefer full-day kindergartens.

Additional Conclusion

The overall conclusion of this program evaluation is that the full-day pilot kindergartens had better student outcomes than did the comparison part-day kindergartens. While not determined by this evaluation, one possible explanation for these positive outcomes is the increased instructional time found in the pilot kindergartens. It is important to note, however, that while it was not the purpose of this evaluation, much of the instructional quality and curriculum content observed in the part-day and full-day kindergarten settings was based on simple didactic teaching, long full-group sessions, and long periods of waiting for children with few activities to occupy the “wait” time. These are instructional strategies that are not consistent with recommended practices in early childhood education. While the pilot full-day kindergartens appeared to be more effective in promoting students’ skills, it may be possible, through implementing early childhood education practices that more closely reflect recommended pedagogy to be even more effective in the development of cognitive and developmental skills for students attending full-day kindergartens.

References

- Bowman, B., Donovan, S., & Burns, M. (2001). *Eager to Learn: Educating our Preschoolers*. Washington, DC: National Academy Press.
- Brosterman, Norman. (1997) *Inventing Kindergarten*. Harry N. Abrams, Inc., New York
- Clark, P., Kirk, E. (2000) All-day kindergarten: Review of research. *Childhood Education*, 76(4), 228-231
- Goffin, Stacie G. & Wilson, Catherine S. (2001). *Curriculum Models and Early Childhood Education, Appraising the Relationship*. Merrill Prentice Hall. New Jersey
- Good, R., & Kaminski, R. (2002). *Dynamic Indicators of Basic Early Literacy Skills* (6th Ed.): *Administration and Scoring Guide*. Eugene, OR: University of Oregon.
- Good, R., Simmons, D., Kame'enui, E., Kaminski, R., & Wallin, J. (2002). *Summary of Decision Rules for Intensive, Strategic, and Benchmark Instructional Recommendations in Kindergarten through Third Grade* (Technical Report No. 11). Eugene, OR: University of Oregon.
- Hausken, E.G.; Rathbun, A.H. (2002) Adjustment to Kindergarten: Child, Family, and Kindergarten Program Factors. ED 463849
- NAEYC/NAECPSD. (2003). Joint Position Statement: Early childhood curriculum, assessment, and program evaluation. <http://naecs.crc.uiuc.edu/position/pscape.pdf>
- National Board for Professional Teaching Standards. (2001). *Early Childhood NBPTS Generalist Standards for Teachers of Students Ages 3-8*. (2nd Ed.). Washington, DC: NBPTS.

Appendix A

Purpose of Kindergarten

Appendix A

The Purpose of Kindergarten

Historically, kindergarten has had two primary purposes:

1. to address children's physical, behavioral and emotional development in order to be ready for formal schooling and
2. to begin cognitive instruction to meet specific academic goals (eg. Frobel, *The Education of Man*, 1887; Montessori, *The Montessori Method*, 1912).

These two purposes have often been argued to be mutually exclusive. In actuality, the two purposes, or goals, are mutually supportive. Strong academic instruction can not take place without addressing children's social and emotional needs and strong developmental instruction must address children's developing cognitive skills. For the past 100 years theorists and practitioners have recognized that learning occurs in social contexts and those contexts must support learning.

Vygotsky's socio-cultural theory emphasizes that cognitive activity and development occur in social situations. Children engage in problem-solving activities in collaboration with an adult who structures and models ways to solve problems (Goffin and Wilson, 2001).

The integration of the two purposes (social and cognitive development) has been further emphasized as an essential tenet of developmental interaction theory (eg. Biber, 1977; Shapiro & Biber, 1972). This is where teachers work "to integrate thought and feeling, thought and action...spontaneous and ritualized forms of response...[to]...help children see connections (and) appreciate learning situation[s] more completely." The process of integration of social and cognitive learning is seen as especially critical to creativity and maximum engagement in learning (Goffin and Wilson, 2001).

These points were emphasized more recently in a 1999 study with Delaware's kindergarten teachers that asked them to identify the purpose kindergarten. Kindergarten teachers overwhelmingly stated that it was as important for children to learn strong social-emotional skills as it was to address their academic skills (Lovett, Foley & Gamel-McCormick, 1999).

High Quality Kindergarten

With the above purposes of kindergarten in mind, it is necessary to define what constitutes good quality kindergarten. As many early childhood researchers have pointed out, curriculum design, teacher quality, and resources are very important compared to the length of the day. Children who spend more time in low quality programs do not necessarily gain skills and knowledge.

High quality kindergarten programs can have significant positive outcomes for children. Programs that embed content into meaningful contexts and that are responsive to the interests and developmental needs of young children and use engaging, child-oriented, active teaching practices tend to produce children who learn more and “are better prepared to master the complex demands of formal schooling” (Bowman, Donovan, & Burns, 2001, p.307).

High quality kindergarten programs have specific characteristics. These include well designed curriculum content; instructional strategies that are engaging and meaningful for children; assessment that uses systematic observation and multiple sources of evidence over time, teacher interactions with children that are sensitive and responsive; and strong, positive family and community interactions (NAEYC, 2003; NBPTS, 2001).

Curriculum Content and Child Engagement

High quality programs recognize that children learn best when they are actively engaged within positive social contexts. As stated in a comprehensive review of children’s early development:

Advances in cognitive abilities do not simply unfold with age; nor is the child a passive receptacle for knowledge delivered by others. Rather, current understandings suggest that cognitive development takes place in the context of the child’s interactions with others and within the environment-interactions which the child is a very active participant.” (Bowman, Donovan, & Burns, 2001, p.39).

High quality kindergarten programs recognize the importance and efficiency of integrating curricular content across subject areas while employing a wide variety of instructional strategies that engage all developmental domains in order to meet the needs of all children. Quality kindergarten programs recognize the need to adapt curriculum and teaching strategies to meet the varied needs of the children served in those programs. “Because children differ in so many respects, teaching strategies with any curriculum need to be flexibly adapted to meet the specific needs and prior knowledge of the individual children within the group. (Bowman, Donovan, & Burns, 2001, p.315).

Teacher Directed/Child initiated Instruction

Teachers in high quality kindergartens need to provide different levels of instruction in activities and use a range of techniques including direct instruction, scaffolding, indirect instruction (taking advantage of moments of opportunity), and opportunities for children to learn on their own (self-directed learning)” (Bowman, Donovan, & Burns, 2001, p.315). The developmentalist, Urie Brofenbrenner, describes the proximal processes that are favorable to optimal cognitive development (and brain development) are ones in which the child can construct meaning from the experiences, a child must be an active agent in the process, there

must be choices for the child to make, and the social and physical environment must provide informational feedback to the child. (Bowman, Donovan, & Burns, 2001, p. 41)

Cognitive Complexity

High quality kindergartens address the multiple developmental levels of the children in their programs. There is the opportunity for children to work at a knowledge level (e.g., identification of objects, naming pictures, making observations) as well as opportunities to synthesize information, make comparisons and draw conclusions. No matter the age of the children, teachers in high quality programs provide the opportunities to learn both discreet facts, tasks, and skills and to learn how to ask questions, make observations, combine information, state hypotheses and draw conclusions. Again, as summarized in a major review of research in 2001, Bowman and her colleagues concluded that “the metacognitive skills that allow students to learn more deliberately and have been shown to raise achievement in all (literacy, mathematics, science) academic areas can be introduced in preschool curriculum. Curricula that encourage children to reflect, predict, question, and hypothesize set them on course for effective, engaged learning” (Bowman, Donovan and Burns, 2001, p. 231).

Group Size

The number of students in a class is also related to the quality of the instruction in the class. Small class sizes have an impact on teacher-child interactions, the social and behavioral guidance used by teachers and the level cognitive complexity provided in the class. Small classes with low teacher-child ratios “are associated with higher scores on global measures of quality and, more specifically, more extensive teacher-child interaction, more individualization, less restrictive and controlling teacher behavior, and children engaging in more social interaction, more extensive and complex language, and more complex play (eg. McGurk et al., 1995; Layzer et al., 1993; Clark-Stewart and Gruber, 1994; Howes, 1997; Kontos et al., 1997; Howes et al., 1992). Small class size is also clearly correlated with children’s performance outcomes and “were found to increase student achievement” especially for “children from lower-income families” (eg. Achilles et al., 1995; Ferguson, 1998; Krueger, 1997; Wenglinsky, 1997; Mosteller, 1995) (Bowman, Donovan and Burns, 2001, p.145).

Assessment

The role of assessment in early childhood education is threefold:

1. assessment to inform instruction,
2. assessment for diagnostic and selection purposes, and
3. assessment for accountability and program evaluation.

High quality kindergarten programs carefully select and use each assessment in the way in which it was designed and intended. Recognizing how “development in young children is

uneven and episodic,” early childhood educators understand how standardized test results can be easily misused and misinterpreted. High quality kindergarten programs recognize that “important educational decisions should be grounded in multiple sources of information,” and that, “no test score should be looked at as infallible” (Bowman, Donovan and Burns, 2001, p.306). For the purpose of using assessment to inform instruction, “there must be sustained opportunities for the interactions between teacher and child to occur, and, second, these interactions must occur over time, rather than on a single occasion... learning can be assessed only over time and in context” (Bowman, Donovan and Burns, 2001, p.249-250)

Positive Family School Communication and Collaboration

Finally, high quality kindergarten programs recognize how valuable the home-school relationship is in understanding the child as an individual within the context of family and culture. In Bowman’s review of 30 years of early childhood education research, she and her colleagues concluded that “[c]hildren who do well in school tend to have parents who have close relationships with teachers and caregivers, reinforcing the traditional belief in the importance of such partnerships. The teacher who has extensive contact with the child’s family can better understand the child as an individual and have an appreciation for the contexts in which the child functions, the parents’ aims and hopes for the child, and the values of the child’s culture” (Bowman, Donovan and Burns, 2001, p. 181).

References

- Bowman, B., Donovan, S., & Burns, M. (2001). *Eager to Learn: Educating our Preschoolers*. Washington, DC: National Academy Press.
- Goffin, Stacie G. & Wilson, Catherine S. (2001). *Curriculum Models and Early Childhood Education, Appraising the Relationship*. Merrill Prentice Hall. New Jersey.
- Lovett, K., Foley, J., & Gamel-McCormick, M. (1999). *Transitions from Pre-Kindergarten to Kindergarten: Teachers’ Perceptions*. Newark, DE: Center for Disabilities Studies/Interagency Resource Management Committee.
- NAEYC/NAECPSD. (2003). Joint Position Statement: Early childhood curriculum, assessment, and program evaluation. <http://naecs.crc.uiuc.edu/position/pscape.pdf>
- National Board for Professional Teaching Standards. (2001). *Early Childhood NBPTS Generalist Standards for Teachers of Students Ages 3-8*. (2nd Ed.). Washington, DC: NBPTS.

Appendix B

List of Evaluation Protocols

Appendix B

List of Protocols Used to Measure Kindergarten Program Activities and Participant Perceptions of Full- and Part-day Kindergartens

Classroom Description Protocols

1. University of Delaware Snap Shot (adapted from Richie et al., 1998)
2. Teacher Child Interaction Scale (Farren & Comfort, 1986)
3. Classroom Diagram*
4. Classroom Materials*
5. Teacher Lesson Plans*
6. Teacher Weekly Schedule*
7. Weekly Intervention Schedule*

Description of Students and their Outcomes

8. Teacher Checklists of Student Description
9. Student Demographic Information
10. Report Card Grades
11. DIBELS (Dynamic Indicators of Basic Early Literacy Skills)
12. School Liking and Avoidance Questionnaire (a measure of stress and perception of school activities)*

Feedback from Teachers, Administrators, and Parents

13. Teacher Interview*
14. Administrator Interview*
15. Survey of the Parents*

* Instruments or protocols developed for this program evaluation

For more information, please contact:

Dr. James Lesko

Delaware Department of Education

302-739-4667

jlesko@doe.k12.de.us

Deborah Amsden

Center for Disabilities Studies

University of Delaware

302-831-8880

irmc@udel.edu

Equal Opportunity Statement

AN EQUAL OPPORTUNITY/AFFIRMATIVE ACTION EMPLOYER

The University of Delaware is committed to assuring equal opportunity to all persons and does not discriminate on the basis of race, color, gender, religion, ancestry, national origin, sexual orientation, veteran status, age, or disability in its educational programs, activities, admissions, or employment practices as required by Title IX of the Education Amendments of 1972, Title VI of the Civil Rights Act of 1964, the Rehabilitation Act of 1973, the Americans with Disabilities Act, other applicable statutes, and University policy. Inquiries concerning these statutes and information regarding campus accessibility should be referred to the Affirmative Action officer, 305 Hullihen Hall, 302/831-2835 (voice), 302/831-4552 (TDD)