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ABSTRACT

This report describes the second year of the longitudinal study (year 3 of the program) of Georgia's Prekindergarten children and families and presents kindergarten results, 1 year after program attendance. The sample was comprised of 534 kindergartners and families, half of whom had a full school year of the prekindergarten program. The comparison group, stratified on ethnicity, gender, and SES, was selected in equal numbers from three geographical areas in Georgia. A family questionnaire on demographics and use of social services was used to select the comparison group. Teachers completed three instruments: (1) The "Developmental Rating Scales," a project-designed instrument to assess physical, self-help, social, academic, and communicative development; (2) "Teacher Questionnaire," regarding absences, referrals, and promotions; and (3) "Family Participation in School Activities," ratings of participation in various parent opportunities. Results indicated that Prekindergarten children differed from comparison children in several ways including: (1) higher ratings in all five developmental areas; (2) fewer kindergarten absences; (3) more promotions to first grade; (4) higher mothers' occupational level. There was little difference in demographic variables and no difference in parent participation or the number of referrals for special services. For both prekindergarten and comparison groups, parent participation and school attendance were correlated with children's development and promotion. (Includes 12 tables and 1 figure.) (KDFB)

The Longitudinal Evaluation of Georgia's Prekindergarten Program: Results from the Third Year

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The Longitudinal Evaluation of Georgia's

Prekindergarten Program: Results from the Third Year

The purpose of this presentation is to describe the second year of the longitudinal study of Georgia's Prekindergarten children and families. This state-supported prekindergarten program was designed for low income participants and focuses on families as well as 4-year-old children.

The longitudinal study began when the children were in prekindergarten and will continue until they finish third grade. The research reported here took place when the children were in kindergarten, one year after they attended the prekindergarten program. The families as well as the children were subjects of this research.

METHOD

Sample. During the prekindergarten year, 317 prekindergartners were randomly selected from 18 sites throughout Georgia. The sample was stratified for gender and ethnicity. Because 39 children withdrew from the program after the sample was selected, the number of children in the sample at the beginning of kindergarten was 278.

The sample of prekindergartners entered kindergarten in a total of 201 kindergarten classrooms in 104 schools. During the kindergarten year, we selected a comparison group from the same classrooms the prekindergarten children attended. Kindergarten teachers supplied the names, gender, and ethnicity of all children with no preschool experience on the **Comparison Group Selection Form**, depicted in Table 1. Teachers then sent a **Family Information Form**, illustrated in Table 2, to the families of the prekindergarten children and the potential comparison families. The

form asked for information about eligibility for free and reduced lunch, parents' education and employment, number of people living in the home, types of assistance received, and, to check the teacher's information, whether the kindergartner had attended preschool.

The comparison group was selected from these forms and stratified on ethnicity, gender, eligibility for free/reduced lunch, and parents' highest education level. The sample includes 534 children , with 267 in each group. As shown in Table 3, ethnicity of the sample, representative of that in the population, includes African American (62.2%), Caucasian (32.5%), Hispanic (3.0%) and Other (2.3%). Again representing the population, males outnumber females, 56.9% to 43.1%. Equal numbers of prekindergarten and comparison children (81.6%) were eligible for free and reduced lunch. Table 4 presents the highest level of education in the families. A chi square indicated that the two groups did not differ on educational level. Figure 1 shows that the two groups are represented equally in each region of the state.

Instruments. Teachers received three instruments to complete during the school year. These instruments were developed in-house. The **Developmental Rating Scale** was constructed to be a brief and efficient method for teachers to use in assessing the children's development in five areas: academic, communicative, physical, self-help, and social. The instrument consists of five eight-point Likert-type rating scales (one for each area of development). A determination of the test-retest reliability, using an earlier group of teachers, yielded correlations ranging from .86 to .92 for the five scales. In using the scales, teachers were first given examples of behaviors in each developmental area. Then they were directed to fill in the scales with the names of all children on the class roll and to give each child a rating, comparing him or her to all the other children in the class. The Academic Scale is illustrated in Table 5. The scales were forced choice. Teachers were required to assign the

number 1 to the lowest child in each developmental area, to assign the number 8 to the highest, and to assign at least one child to each category between 1 and 8. This procedure assured that teachers used a full range of possible values.

The **Teacher Questionnaire** was sent to the teachers at the end of the school year in order to get the children's absence, promotion, and referral information (Table 6). Teachers also received at this time a form for reporting **Family Participation in School Activities**, on which they recorded how many times parents of sample children participated in parent conferences, classroom visits, PTA meetings and other parent opportunities (Table 7).

Child Comparisons

Development

Prior to this study the Developmental Rating Scales were factor analyzed using the scores of 214 children randomly selected from the classrooms of 78 teachers. This factor analysis indicated that most of the variance in all five rating scales was explained by a single factor, which was named Development.

To evaluate the reliability of this factor, a new factor analysis was computed using the developmental ratings of the present study. Again, a single factor explained over 82% of the variance in each of the five scales, indicating that the factor Development is reliable.

The prekindergarten and comparison children were compared on teachers' ratings of physical, self-help, social, academic, and communicative development during the kindergarten year by means of a multivariate analysis of variance (MANOVA). The independent variable was group (prekindergarten versus comparison), and the dependent variables were the teachers' ratings of the five areas of development. The MANOVA was significant, $F(5, 528) = 6.46$, $p < .001$. ANOVA's

for all the individual rating scales were also significant. The prekindergarten children had significantly higher ratings in all five areas of development (Table 8).

An ANOVA, computed to compare the prekindergarten and the comparison group on the factor, Development, was significant, $F(1, 533) = 24.94$, $p < .0001$. This analysis provides further support for a significant difference between the prekindergarten and the comparison children on teacher ratings of development.

Absences

Former prekindergarten and comparison children were compared on absences at the end of the school year by means of a one-way ANOVA. The difference between the two groups was significant, $F(91, 532) = 4.90$, $p.<.05$. Children with prekindergarten experience had significantly fewer absences than comparison children. Perfect attendance was reported for 21 prekindergarten and 11 comparison children: and attendance for five or fewer days occurred for 40% of the prekindergarten children and 35% of the comparison children. Some children were chronically absent. Approximately 15% of prekindergarten children and 19% of comparison children missed 18 days or more, the equivalent of almost one month of school (Table 9).

Referrals

The information provided by teachers on the number of referrals for special services identified children in both groups having severe problems. Although the comparison group appeared to have more referrals (72) than the prekindergarten group (64), the difference was not statistically significant.

Most children in both groups had no referrals. However, 20.6% of the prekindergarten children and 18.7% of the comparison children were referred for at least one problem. A few children

were referred for more than one problem. Children were referred most frequently for academic problems (Table 10).

Promotion and Retention

The prekindergarten and comparison children were compared on promotion and retention at the end of the kindergarten year. Teachers indicated whether each child would be legitimately promoted, "placed" in the higher grade (socially promoted), or retained in kindergarten (Table 11). Children who were "placed" were advanced to first grade for reasons other than academic readiness.

A chi square was computed to compare the two groups on the three levels of promotion decision. The Mantel-Haenszel test for linear association yielded a significant difference between the two groups of children, χ^2 (1) = 7.60, $p < .01$. Using Kimball's (Kimball, 1954) procedure, the contingency table was partitioned, and the groups were compared on retained versus promoted and retained and placed combined versus promoted. Adjusting the alpha level for the two tests as Kimball recommended to .025, the differences between the two groups of children were significant for both analyses: retained versus promoted, χ^2 (1) = 5.55, $p < .02$; and retained and placed combined versus promoted, χ^2 (1) = 7.13, $p < .01$. Significantly more prekindergarten than comparison children were promoted. Thus, a greater number of comparison children did not meet the academic criteria for promotion.

Family Comparisons

Family Demographics

The Family Information Form was developed and used to obtain information about both former prekindergarten and comparison families. The prekindergarten and comparison families did not differ on mothers' and fathers' educational levels, employment status, adult configuration of the

household, number of the child's siblings, number of other children in the home, total number of adults and children living in the household, federal and state assistance, and the type of dwelling in which they live.

The only difference between the two groups was mothers' occupational level. The jobs held by the parents were classified according to the Hollingshead-Redlich Occupational Scale (Hollingshead and Redlich, 1958). A Mann-Whitney test yielded a Z of -3.11, $p < .01$, indicating that the prekindergarten mothers held jobs requiring a greater level of skill than the comparison mothers.

Family Participation in School Activities

The Family Participation in School Activities form, completed by the teachers, had two parts to assess parents' involvement with the school. Prekindergarten and comparison parents did not differ on any aspect of their involvement with the school. Both groups of parents were for the most part involved directly with various activities in their child's classroom, but only about 20% were involved in school-wide activities such as PTA.

Because the six questions on the second part of the form were highly intercorrelated, we computed a factor analysis. This analysis yielded one factor which we named Parent Participation. The two groups did not differ on this factor.

Correlations: Development, Absences, Referrals, Promotion, and Parent Participation in School Activities

The relationships among teacher ratings of development in the five areas, the development factor score, kindergarten absences, referrals for special services, promotion decisions, and the parent participation factor score were examined by correlating every variable with all other variables for both the prekindergarten and comparison groups. Because the correlations were essentially identical for

the two groups, the data for the groups were combined, and the variable "group," with comparison group equal to 0 and prekindergarten group equal to 1, was added.

Table 12 presents a correlation matrix for the combined groups. Except for the correlations between two of the variables and "group," all correlations are significant. The high correlations among the developmental rating scales indicate that teachers perceive a great deal of consistency in the different types of development. This is confirmed by one factor score that represents all five developmental areas. The significant negative correlations between absences and both the developmental scores and promotion indicates that school attendance is very important to children's success. The significant correlations between "group" and the other variables indicate that prekindergarten has a significant impact on children's development and school performance. These correlations confirm the results of the MANOVA's and ANOVA's reported earlier.

Conclusions

The results of the evaluation during the kindergarten year are very robust, indicating that the prekindergarten program had a positive effect on the children. However, an effect was not found for the families. Continued assessment of these families and children as they progress through school will occur during the course of the evaluation.

References

Hollingshead, A. B., & Redlich, F. E. (1958). Social and mental illness. New York: John Wiley.

Kimball, A. W. (1954). Short-cut formulas for the exact partition of χ^2 in contingency tables. Biometrics, 452-457.

TABLE 1

Comparison Group Selection Form

Name of School:______________________________

Name of Teacher:______________________________

Name of Prekindergarten Child:______________________________

Child's Name, Address and Date of Birth	Gender	Ethnicity
NAME: Address: Birthdate:	❐ M ❐ F	❐ African American ❐ Asian ❐ Hispanic ❐ Caucasian ❐ Multiracial
NAME: Address: Birthdate:	❐ M ❐ F	❐ African American ❐ Asian ❐ Hispanic ❐ Caucasian ❐ Multiracial
NAME: Address: Birthdate:	❐ M ❐ F	❐ African American ❐ Asian ❐ Hispanic ❐ Caucasian ❐ Multiracial
NAME: Address: Birthdate:	❐ M ❐ F	❐ African American ❐ Asian ❐ Hispanic ❐ Caucasian ❐ Multiracial
NAME: Address: Birthdate:	❐ M ❐ F	❐ African American ❐ Asian ❐ Hispanic ❐ Caucasian ❐ Multiracial

TABLE 2

Kindergarten Family Information Form

Child's name:_____

Child's social security number:_____

Parents' name: _____

If child has a guardian,
Guardian's name: _____

Parent or Guardian social security number:_____
(This is needed so you can be paid)

Telephone Number:_____

Child's address:_____

_____

Has your child ever attended daycare/preschool?

- ❑ No
- ❑ Yes

If yes, how old was your child when he or she attended? (check (✔) all that apply)

- ❑ 1 year old
- ❑ 2 years old
- ❑ 3 years old
- ❑ 4 years old

If your child attended daycare/preschool at the age of 4:

What was the name of the center?_____
How many months? (circle one) 1 2 3 4 5 6 7 8 9 10 11 12

Provide the following information for the parents or guardians living in the child's home.

MOTHER/STEPMOTHER/FEMALE GUARDIAN INFORMATION

Does mother/stepmother/female guardian work? (Check (✔) one)

- ❑ Yes, Full-time — If yes, where does she work?_____
- ❑ Yes, Part-time
- ❑ No — What kind of work does she do there?_____

Please circle the level of education that mother/stepmother/female guardian completed?

Grade 1 2 3 4 5 6 7 8 9 10 11 12

Technical School Some College Completed College Graduate/Professional School

Table 2, continued

FATHER/STEPFATHER/MALE GUARDIAN INFORMATION

Does father/stepfather/male guardian work? (Check (✔) one)

❑ Yes, Full-time
❑ Yes, Part-time
❑ No

If yes, where does he work?_____

What kind of work does he do there?_____

Please circle the level of education that father/stepfather/male guardian completed?

Grade 1 2 3 4 5 6 7 8 9 10 11 12

Technical School Some College Completed College Graduate/Professional School

CHECK (✔) BELOW ALL THE PEOPLE WHO LIVE IN YOUR CHILD'S HOME.

❑ Mother
❑ Stepmother
❑ Grandmother
❑ Aunt
❑ Other adult/adults

❑ Father
❑ Stepfather
❑ Grandfather
❑ Uncle

❑ Twin of this child
❑ Older brothers (How many?___)
❑ Younger brothers (How many?___)
❑ Older sisters (How many?___)
❑ Younger sisters (How many?___)
❑ Other older children (How many?__)
❑ Other younger children (How many?__)

Is your child eligible for free/reduced lunch?

❑ Yes
❑ No

Please check (✔) the following types of assistance you receive:

❑ AFDC
❑ WIC
❑ Food Stamps
❑ Supplemental Security Income (SSI)
❑ Housing

Please check (✔) which of the following best describes your housing:

❑ Duplex
❑ Apartment
❑ House
❑ Mobile Home

All of this information is confidential and will not be shared with your child's school.

TABLE 3

Ethnicity, Gender & Free/Reduced Lunch Eligibility

CHARACTERISTIC		PREKINDERGARTEN		COMPARISON	
		Frequency	Percent	Frequency	Percent
Ethnicity	African American	166	62.2	166	62.2
	Caucasian	87	32.5	87	32.5
	Hispanic	8	3.0	8	3.0
	Other*	6	2.3	6	2.3

*Nigerian, Asian, and Multi-racial.

CHARACTERISTIC		PREKINDERGARTEN		COMPARISON	
		Frequency	Percent	Frequency	Percent
Gender	Males	152	56.9	152	56.9
	Females	115	43.1	115	43.1

CHARACTERISTIC		PREKINDERGARTEN		COMPARISON	
		Frequency	Percent	Frequency	Percent
Free/Reduced Lunch Eligibility	Yes	218	81.6	218	81.6
	No	49	18.4	49	18.4

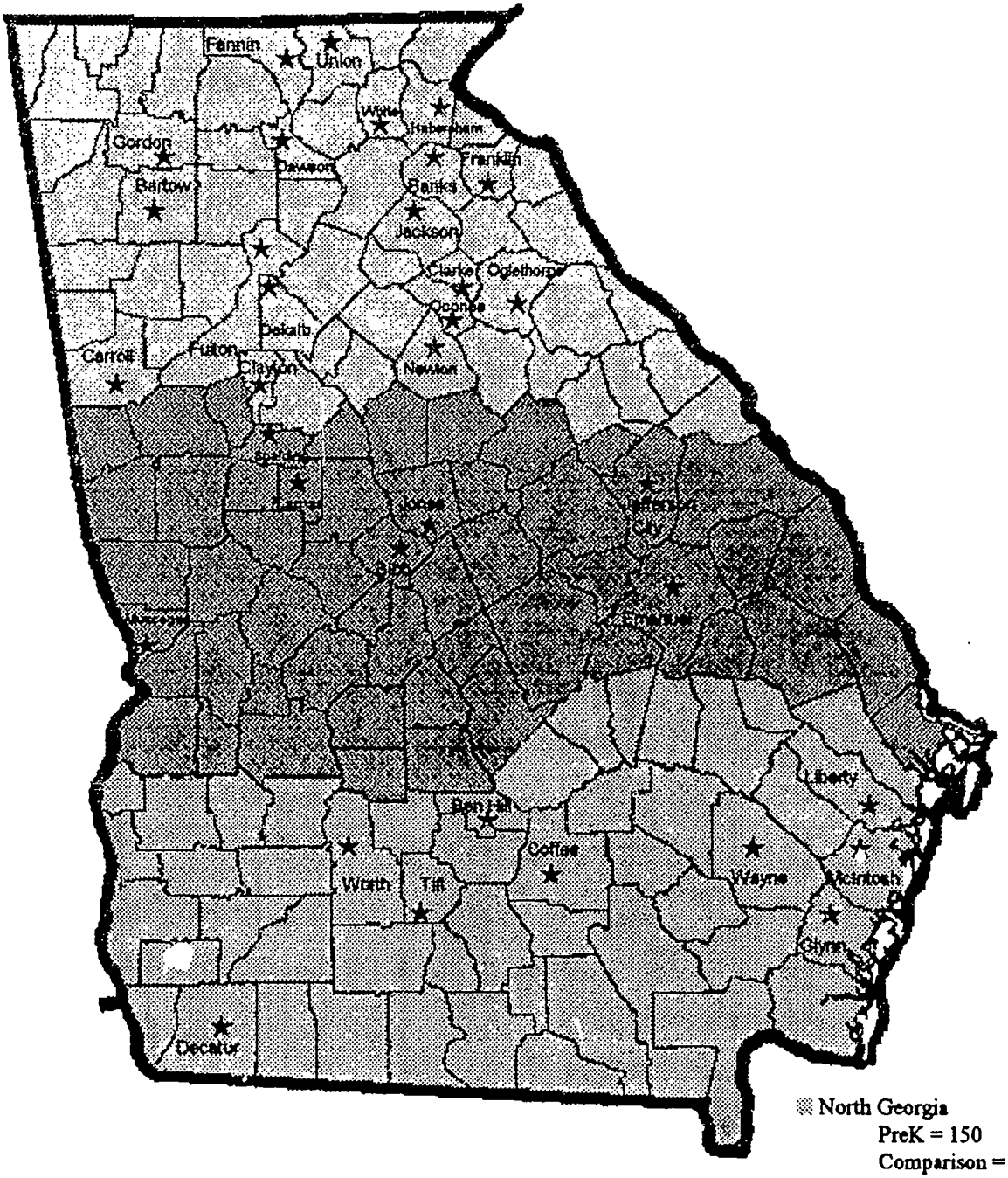
TABLE 4

Highest Level of Education in the Family

LEVEL OF EDUCATION	PREKINDERGARTEN		COMPARISON	
	Frequency	Percent	Frequency	Percent
Did Not Finish High School	50	18.7	51	19.1
Completed High School	92	34.5	98	36.7
Attended Technical School	43	16.1	38	14.2
Completed Some College	64	24.0	64	24.0
Completed College	17	6.4	13	4.9
Completed Graduate/ Professional School	1	0.4	3	1.1

FIGURE 1

Geographical Regions of Georgia



North Georgia
PreK = 150
Comparison = 149

Central Georgia
PreK = 50
Comparison = 52

South Georgia
PreK = 67
Comparison = 66

★ Indicates the counties in which schools are located.

TABLE 5
Developmental Rating Scale (Academic)

Teacher's Name _________ **School** ________

INSTRUCTIONS:
1) Write the names of all children in your class below.
2) Identify one or two children in your class with the highest level of **Academic Performance.** Circle the number 8 for that child or children.
3) Identify one or two children in your class with the lowest level of **Academic Performance**. Circle the number 1 for that child or children.
4) Rate each of the other children in your class using the numbers between these extremes. Please use each number on the scale at least once.

CHILDREN'S NAMES	SCALE Lowest Highest							
	1	2	3	4	5	6	7	8
	1	2	3	4	5	6	7	8
	1	2	3	4	5	6	7	8
	1	2	3	4	5	6	7	8
	1	2	3	4	5	6	7	8
	1	2	3	4	5	6	7	8
	1	2	3	4	5	6	7	8
	1	2	3	4	5	6	7	8
	1	2	3	4	5	6	7	8
	1	2	3	4	5	6	7	8
	1	2	3	4	5	6	7	8
	1	2	3	4	5	6	7	8
	1	2	3	4	5	6	7	8
	1	2	3	4	5	6	7	8
	1	2	3	4	5	6	7	8
	1	2	3	4	5	6	7	8
	1	2	3	4	5	6	7	8
	1	2	3	4	5	6	7	8
	1	2	3	4	5	6	7	8
	1	2	3	4	5	6	7	8
	1	2	3	4	5	6	7	8
	1	2	3	4	5	6	7	8
	1	2	3	4	5	6	7	8

TABLE 6

TEACHER QUESTIONNAIRE

Absence, Promotion, Referral Form

Teacher's Name: **School:**

DIRECTIONS:

✎ **Date Child Started in Your Class:** *Fill in the date the child started in your classroom.*

✎ **Number of Absences:** *Provide the number of absences from the date of entrance through* ***MAY 19, 1995.*** *If child withdrew, give date of withdrawal.*

✎ **Level of School the Child Will Attend Next Year**: Check (✔) one.

Promoted to 1st grade: *Exhibits academic readiness for 1st grade.*
Placement in 1st grade: *Promotion to 1st grade for any other reason than academic readiness. Please provide reason in comments section.*
Retained in Kindergarten: *Will remain in kindergarten. Please provide reason in comments section.*

Child's Name	Date child started in your class	Number of Absences through May 19	Check (✔) the level of school child will attend next year	Comments
			❒ Promoted to 1st grade ❒ "Placed" in 1st grade ❒ Retained in Kindergarten	
			❒ Promoted to 1st grade ❒ "Placed" in 1st grade ❒ Retained in Kindergarten	
			❒ Promoted to 1st grade ❒ "Placed" in 1st grade ❒ Retained in Kindergarten	
			❒ Promoted to 1st grade ❒ "Placed" in 1st grade ❒ Retained in Kindergarten	
			❒ Promoted to 1st grade ❒ "Placed" in 1st grade ❒ Retained in Kindergarten	
			❒ Promoted to 1st grade ❒ "Placed" in 1st grade ❒ Retained in Kindergarten	

Table 6, cont.

SPECIAL SERVICES REFERRALS

✎ Describe any special services referrals and their resolutions. Use the additional space for any comments.

Child's Name	Special Services Referrals	Comments

REASONS FOR EXCESSIVE ABSENCES

✎ If child was absent more than 18 days, give reason.

Child's Name	Reason

TABLE 7

FAMILY PARTICIPATION IN SCHOOL ACTIVITIES

Child's Name:
School: **Teacher:**

I. Fill in the number of times the child's parent(s) or guardian(s) engaged in the activities listed below. Report activities through MAY 19, 1995.

ACTIVITY	NUMBER OF TIMES
Attended parent conferences	____
Volunteered to help in classroom	____
Visited classroom	____
Did things at home to support school (e.g., raised funds, prepared treats or decorations)	____
Chaperoned field trips	____

II. Circle the response that indicates how well each statement describes the participation of the parent(s) or guardian(s) during the school year up to MAY 19, 1995.

1: *consistently (almost always when opportunity arises)*
2: *frequently (more often than not)*
3: *occasionally (or with persistent reminders)*
4: *rarely (only a few times, even with encouragement)*
5: *never*
NA: *does not apply/no opportunity/never asked*

1. Responded to written requests for information/permission for activities ..... 1 2 3 4 5 NA

2. Responded to discipline notices from teacher/school ..... 1 2 3 4 5 NA

3. Supported child in timely completion of homework ..... 1 2 3 4 5 NA

4. Supported child in getting to school regularly and on time ..... 1 2 3 4 5 NA

5. Followed through on suggested contacts or child activities ..... 1 2 3 4 5 NA

6. Participated in parent meetings/committees/organizations held by the school (e.g., PTA)..... 1 2 3 4 5 NA

III. Was the parent or guardian a room parent (check one)?

YES ☐
NO ☐

TABLE 8

ANOVA's for Developmental Ratings

SCALE	DEGREES OF FREEDOM	F	p
Academic	1, 532	23.72	.000
Communication	1, 532	21.77	.000
Physical	1, 532	25.48	.000
Self-Help	1, 532	23.13	.000
Social	1, 532	11.44	.001

TABLE 9
Number of Days Absent

NUMBER OF DAYS ABSENT	PREKINDERGARTEN[a]	COMPARISON[b]
0	21	11
1	13	15
2	16	14
3	26	19
4	19	21
5	13	13
6	16	19
7	17	13
8	14	12
9	11	7
10	8	16
11 - 15	43	42
16 - 20	25	26
21 - 25	10	17
26 - 30	5	9
31 - 35	8	4
36 - 40	1	2
41 - 45	0	2
46 - 50	1	1
51 - 55	0	1
56 - 60	0	3

[a]n = 267. [b]n = 267

TABLE 10

Number of Referrals by Category

REFERRAL	PREKINDERGARTEN		COMPARISON	
	Frequency	Percent	Frequency	Percent
Academic	30	46.88	37	51.39
Behavioral/Emotional	14	21.88	15	20.83
Family Indifference [a]	4	6.25	7	9.72
Physical [b]	1	1.56	0	0.00
Speech/Hearing	15	23.44	13	18.06

[a]Referred to social services because of excessive absences and tardiness. [b] Occupational therapy for motor coordination problem.

TABLE 11

Promotion Decisions

PROMOTION DECISION	PREKINDERGARTEN		COMPARISON	
	Frequency	Percent	Frequency	Percent
Promoted	234	87.6	211	79.0
Placed [a]	21	7.9	31	11.6
Retained	12	4.5	25	9.4

[a]Placed indicates child did not meet academic criteria for promotion.

TABLE 12

Correlation Matrix for Kindergarten Variables

CRITERIA	Academic	Communication	Physical	Self-Help	Social	Development Factor	Kindergarten Absences	Referrals	Promoted	Parent Participation Factor
Academic	1.00									
Communication	.75**	1.00								
Physical	.61**	.61**	1.00							
Self-Help	.71**	.70**	.70**	1.00						
Social	.59**	.64**	.58**	.68**	1.00					
Development Factor[a]	.86**	.87**	.82**	.89**	.82**	1.00				
Kindergarten Absences	-.19**	-.20**	-.16**	-.21**	-.21**	-.23**	1.00			
Referrals	-.30**	-.32**	-.26**	-.32**	-.27**	-.35**	.15**	1.00		
Promoted[b]	.50**	.46**	.37**	.45**	.37**	.51**	-.18**	-.37**	1.00	
Parent Participation Factor	.30**	.27**	.22**	.23**	.25**	.30**	.22**	.30**	.29**	1.00
Group	.21**	.20**	.21**	.20**	.15**	.23**	-.10*	-.03	.12*	.06

*p < .05. **p < .001.