

**EFFECT OF SCHOOL ENTRANCE  
AGE ON ACADEMIC SUCCESS**

**BY**

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EFFECT OF SCHOOL ENTRANCE AGE ON  
ACADEMIC SUCCESS

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Master of Arts  
in Psychology

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by  
Patricia Kington Johnson  
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To the Graduate Council:

I am submitting herewith a Research Paper written by Patricia Kington Johnson entitled "Effect of School Entrance Age on Academic Success." I recommend that it be accepted in partial fulfillment of the requirements for the degree of Master of Psychology.

Elizabeth H. Stokes  
Major Professor

Accepted for the Council:

William H. Ellis  
Dean of the Graduate School

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## CHAPTER I

### INTRODUCTION

It is the purpose of the present study to determine the effect of school entrance age on academic success as measured by the teachers' ratings of the children's relative standing in reading in the classroom, teachers' subjective ratings of overall level of achievement, and promotion (or non-promotion) through the early primary grades. Subjects were 662 kindergarten, first and second graders enrolled at Oakmont Elementary School in the Dickson County school system during the 1978-1979 school year.

#### Review of the Literature

The debate over the age at which children should begin formal education has been long-running and fraught with controversy. Recently, California has taken the first giant step toward early childhood education with the passage of Senate Bill 1302, proposing to take schooling down to four-year-olds (Lewis, 1973). In a critique of such a proposal, Moore, Moon and Moore (1972) have cited research studies comparing early and later school entrants, neurophysiological research, and maternal deprivation studies. They conclude that the California planners have either overlooked or ignored the literature, as

all the research cited by Moore, et al., indicated that such a plan to admit children to formal education before the age of six would be fruitless, if not damaging to the children.

The Gesell Institute of Child Development has discovered that, since its inception in 1950, almost every child referred to them because of trouble in school was overplaced (Ilg, 1972). Their findings indicate that such children often have fall birthdays. Most schools require that a child be six by September 1 in order to enroll in the first grade; however, the Gesell Institute's findings would suggest that July 1, or even June 1, would be a more effective cutoff date.

In recent years, the trend toward an earlier entrance age to first grade has become more pronounced as parents have exerted more pressure in this direction (Gabbard, 1960). According to Hefferman (1960), all the research evidence of the twentieth century opposes forcing formal instruction upon children at an early age. Requiring children to make such refined adjustments before they are ready is fraught with serious results inimical to the welfare and future of young children (Hefferman, 1960).

In a study comparing 50 underage and 50 normal age



sixth graders, Carter (1956) found the difference between grade-equivalent achievement test scores to be significant, the higher scores being attained by the normal age group. Such was the case for both boys and girls. According to his data, 87% of the underage children did not equal the scholastic achievement of normal age children.

King (1955) found significant differences between Stanford Achievement scores of younger and older sixth graders, favoring the latter. The study also found that whereas only one out of the 50 older students had been retained, ten of the 54 younger students had repeated a grade. Of the eleven retainees, only three were girls.

Baer (1958) compared the achievement of 73 high school pupils admitted early to first grade because their mental ages exceeded five years upon entrance into kindergarten with 73 pupils born in January and February and admitted at the usual time. In reading, the older pupils were significantly superior to the younger pupils in third, sixth, and eighth grades. In arithmetic, the older group was superior in the fourth, sixth and eighth grades. Also noted was the significantly greater number of retentions among the younger pupils.

In a comparison study of reading achievement of early and late school starters, Hampleman (1959) found

that older sixth graders had a mean Stanford Achievement score about four months higher than that for the younger group. Although such a difference is in the expected direction with regard to other similar studies, the results were not statistically significant. Hampleman posited that had the groups been larger, significance may have been attained.

The Nassau County Elementary Principals' Association in 1949 requested its Research Committee to investigate entrance age, grade placement, and promotion policies of the Nassau County elementary schools (Hamalainen, 1952). The committee sent questionnaires to the principals in the schools. Responses indicated that 16.5% of all kindergarten children entered when they were younger than four years and nine months. Nearly one-fourth of this younger group encountered difficulty adjusting to school, as compared to six percent of the normal age children.

A state-wide study conducted in 1958 by the Legislative Research Commission of Kentucky (cited in Halliwell, 1966) indicated that students who enter first grade late have a general advantage over students who enter early. The result of the study was a recommendation by the Commission that the state law be amended to require that

a child be six years of age on or before October 1 of the school year in which he is to enter first grade. More recently, the Illinois Association for Childhood Education was prompted, by failure of a bill in the state legislature requiring that children entering first grade be six by September 1 or October 1, to conduct a study comparing younger and older children along the dimensions of reading achievement, retardation rate and emotional adjustment (Johnston, 1964). Results indicated that success in reading seems to be positively related to older entrance, regardless of ability level. Students in the youngest group were found to be significantly more likely to experience retardation than their older classmates. Although differences by age groups in emotional adjustment were not significant, differences between boys and girls were highly significant in this area, as well as in retardation rates.

More recent research has, in general, paralleled the earlier findings. Halliwell and Stein (1964) compared the achievement of early and late starters in reading related and non-reading related areas, based on California Achievement Test scores in the fourth and fifth grades. Their findings confirmed superiority of the older students at both grade levels in the areas of vocabulary, reading



comprehension, spelling and language. Differences in mean IQ scores of the older and younger fourth graders required the adjustment of the achievement scores. Even so, the differences between the two groups in achievement were significant at the .01 level of confidence.

In a study of underaged and modal-aged boys in elementary school, Clarke and Drowatsky (1972) compared the groups on scholastic achievement as measured by the Gates Primary Reading Test, the Gates Advanced Primary Reading Test, and the Stanford Achievement Test, as well as grade point average. Such measures were taken for samples in the second through sixth grades. Of the 34 statistical comparisons made, seven were significant at or beyond the .05 level. In all cases where significance was found, the difference was in favor of the modal-aged boys. Four of the seven significant differences came out of the fourth grade group.

Halliwell (1966), in reviewing the literature regarding early school entrance, cites several articles, reviews and pamphlets which erroneously conclude that research on early school entrance supports the position that early admission results in no adverse effects. Such an observation echoes the conclusion made by Moore et al. (1972) in response to the California plan for early admission.

Halliwell's conclusion from the data related to the problem is that the advantages of postponing early entrance to first grade programs, as they are presently conducted, are very real.

Despite Halliwell's generalized statement (1966), there is some research evidence that early entrance benefits certain populations, specifically those pupils of relatively high or low mental ability. For example, out of 5,000 sixth graders, Norman, Clark, and Bessemer (1962) selected those students having IQ's of 130 or over on the California Tests of Mental Maturity (CTMM). This select group totalled 215. The students were identified as achievers or non-achievers based on anticipated achievement as measured by the California Achievement Test. The resulting comparison revealed that the achievers were significantly younger than the non-achievers. Furthermore, the achievers were much more consistent both in their means on the two parts of the CTMM and in their anticipated achievement profiles. The gifted boys (n=125) were more variable in several measures, and gifted girls (n=90) were superior in verbal achievement measures.

Nimnicht, Sparks, and Mortensen (1963) gathered data on first graders' birthdates, occupation of the fathers, sex of the child, and Lorge-Thorndike IQ scores,

in order to determine those factors most relevant to predictions of school success. School success was measured by teacher ratings of each child. The children were rated as "above average," "average," or "below average" in academic success. The authors found a significant relationship between IQ and success in first grade, the bright children being rated more highly. Such a relationship was found in every district included in the study. In no more than one-third of the districts was age at entrance found to be a related factor. In most of the districts, significant relationships between sex of the child and success and father's occupation and success were noted, and girls were rated as higher achievers. The authors conclude that age is the least reliable predictor, despite their admission that the rating criteria used by the teachers may have varied considerably. They do state, however, that on the whole there was nothing in their study to suggest that a child suffers from delayed admission to school. On the contrary, the results showed some relationship does exist between entrance age and success, suggesting that a child benefits from a delay. They posit that a possible exception to such a general statement would be the highly gifted students who learn to read before entering school.



Durkin (1964) addressed the issue in her study of early readers. In September of 1958, 49 of the children entering first grade in the Oakland, California, schools were identified as having some ability in reading. The 29 girls and 20 boys were found to have reading achievement scores ranging from 1.5 to 4.5, based on grade-level norms, and IQ's ranging from 91 to 161 with a median IQ of 121. The students' achievements were followed through their fifth year of schooling. In general, the data show the increasing importance over time of high intelligence for high achievement in reading. Five of the six early readers who were below grade level in reading at the end of the fifth grade were among those with the lowest IQ's in the total group. Durkin also compared the reading achievement of the 49 early readers with the reading achievement of 201 children who started school with them, had the same teachers in grades 1 through 3 and were of comparable mental ability, but were not reading at entrance. The data indicated that the lower the IQ of the child in the early reading group, the greater the advantage over his nonreading peers due to early admission. Durkin cautions her readers not to jump to unwarranted conclusions from the data. Moving from her positive findings about children who first learned to read at

home to a recommendation for earlier instruction in reading would be taking "a big step over a wide gap." For the most part, children who learn to read early do so because they desire to learn.

Another article dealing with early instruction for a special population (Ahr, 1967) describes the Early School Admission Program of Stokie, Illinois', District 68. To begin with, Stokie ranked first in the nation in family income, first in least unemployment, and tied for first in the number of years of residents' education (Representative Rumsfield, cited in Ahr, 1967). The mean IQ of students in the district, based on Lorge-Thorndike scores, is about 114. In the spring of each year, parents having children who will be five on or between December 2 and May 28 are invited to register their children for kindergarten admission in the fall. These children would not be routinely allowed to enter school because they would be younger than the cut-off date for school entrance. A preschool group screening test is then administered to those potential pupils. Those passing the screening are then given individual assessments by the school psychologist. Generally, the group screening reduces by at least half the number of candidates eligible for further consideration. Individual

assessment includes administration of the Stanford-Binet, Wide Range Achievement Test, Draw-a-Man test, and an interview to evaluate social and emotional factors. Ahr obtained subjective teacher ratings for all early entrants attending school at the time of the study. On intellectual ability, 97% of those pupils were rated average or above, and ratings of social, emotional, and physical and motor development indicated that early entrants were average in these areas as compared to regular entrants in the top classes. Achievement (as measured by the Iowa Test of Basic Skills) of this group in grades 3 through 6 was shown to surpass that of the national sample and pupils from the district as a whole.

Although there is some conflict in the literature on the effects of early school entrance, it would appear that early entrance benefits only special populations of children having superior ability (Ahr, 1967; Durkin, 1964; Norman et al., 1962) or low average ability (Durkin, 1964). Most of the literature indicates that children of average ability would benefit from a delayed entrance. Halliwell and Stein (1964) found that reading is the area in which most early entrants encounter difficulty. The Kentucky study (cited in Halliwell, 1966) reported similar findings. However, it should be noted that many



of the studies cited were conducted in the 1950's and 1960's. Even though the problem still exists, there has been a paucity of research in the last 10 years.

Many of the studies already cited have used teacher ratings as the dependent variable (Ahr, 1967; Hamalainen, 1952; Nimnicht et al., 1963). Recent research shows evidence of the validity of such ratings. White and Simmons (1974) found that teachers' perceptions of their first grade students' academic maturity were significant predictors of children's readiness for first grade work. A correlation of .71 was obtained between the teacher ratings and Metropolitan Readiness Test scores. The rating scale used in the study was developed from items on the Vineland Social Maturity Scale (Doll, 1935). A study by Glazzard (1977) found teacher ratings in nine readiness areas (Kirk, 1966) to be more effective predictors of students' scores on the Gates-MacGinitie Reading Test's vocabulary and comprehension measures obtained at the end of first grade than either the Gates-MacGinitie reading readiness test or the Gates-MacGinitie Reading Test (alternate form).

The present study also employs teacher ratings of students' overall level of achievement, of the type

used by Nimmicht et al. (1963). Teachers rated their students as high, average, or below average in achievement. Data were also collected as to reading group membership of the students in each classroom and whether or not each child had been retained during their school careers. All the above served as dependent variables in the study. Birthdate information was gathered on each student, who was then classified as either old, average or young in age on the basis of the Tennessee, November 1 cutoff date for school entrance.

#### Limitations of the Study

As noted by Nimmicht et al. (1963), the simplicity of the teacher ratings was a limitation, as there were likely to have been many different criteria of judgment operating. The limited scope of such ratings is also a limitation. Those studies investigating the utility of teacher ratings (Glazzard, 1977; White & Simmons, 1974) involved much more detailed teacher rating scales. However, because of the teachers' time that would have been required in completing such scales, it was decided that simplified ratings would facilitate greater response. The present study was further limited in that only grades kindergarten through 2 are taught in the Oakmont School. No achievement or readiness test data were available on

the children, as the Dickson County system has discontinued administration of standardized tests at these grade levels. The study did not take into account other variables which may have affected school performance, such as intelligence, motivation, health factors, and the socio-economic levels of the homes from which the children come. Since the child's success in the school program in this county is dependent on the teacher's evaluation of the child's achievement, it was considered appropriate to use the teacher's rating of the child's level of achievement.

### Hypotheses

The null hypotheses were tested by statistical analysis of the data collected and are stated below:

1. There is no significant difference in the number of young first and second grade students in high, middle, and low reading groups as compared to old and average-aged first and second graders.

2. There is no significant difference in the number of young kindergarten, first, and second graders rated by their teachers as being high, average, or below average achievers as compared to old and average-aged kindergarten, first, and second graders.

3. There is no significant difference in the number of retentions among the young students as compared to old and average-aged students.



4. There is no significant difference between boys and girls on all variables.

Definition of Terms

1. Young students are defined as those who have July, August, September, or October birthdates.
2. Average-aged children are those who have March, April, May, or June birthdates.
3. Old students are those whose birthdays fall in November, December, January, or February.
4. Modal age students are those whose ages are appropriate for their grade placement. They have not been retained or accelerated.

## CHAPTER II

### METHOD

#### Subjects

Data were collected on kindergarten, first and second grade students enrolled in the Oakmont Elementary School in the fall of the 1978-1979 school year. The total enrollment of the school was 687; however, 25 students were omitted from the study due to insufficient information in the cumulative records of those children. Many of those not included in the study were transfer students. Subjects were divided into groups based on sex and age at school entrance. Those students having birthdates in November, December, January or February were classified as older children, on the basis of the Tennessee November 1 cut-off date for school admission. Children born in March, April, May or June were assigned to the average-aged group. Those whose birthdates fall in July, August, September or October were designated as young students. The number of subjects falling into each category is presented in Table 1.

Table 1

Group	Grade			Totals	Retentions
	K	1	2		
Females					
Old	26	34	39	99	3
Average	27	40	43	110	10
Young	40	45	26	111	9
Males					
Old	32	30	44	106	7
Average	22	49	36	107	12
Young	38	45	46	129	39

### Materials

A questionnaire was designed for the purpose of obtaining data from the teachers on each child. Each questionnaire was numbered. Across from the number was a space for the teacher to fill in the child's name. Below these entries was another space for the number assigned to the child, so that the name could be detached from the questionnaire once all data had been collected. Two sections were constructed for collection of the data: One was designed for recording of information from the cumulative records by the researcher; the other section



was designed for recording of teacher ratings and reading group membership of the children. The questionnaire in its entirety is reproduced in Appendix A.

### Procedure

Permission for the study was obtained from the principal of Oakmont Elementary. The researcher obtained a roster of the teachers in the school and their class enrollments. Packets of questionnaires and instructions for completing them were assembled for each teacher, the quantity of questionnaires being dictated by the number of students in their classes. The packets were then placed in the teachers' boxes by the principal's secretary. Teachers returned the completed questionnaires to the office. The researcher then began collecting the sex, birthdate, entrance date, and retention information from the cumulative records. Note was made on each record examined as to date and purpose of examination, sections of record viewed, and signature of the examiner. Once all data had been obtained, the questionnaires were grouped, as in Table 1, by sex, grade, and age characteristics. For each resultant group, summary charts were constructed for observed frequencies of pupils falling into each category under the dependent variables: (a) high, middle, or low reading group; (b) high, average, or below average

achievement; (c) nonpromotion or promotion through the grades. Only those students who were of the appropriate age for their grade placement were considered in statistical analysis of the data, except in comparison of the number of retentions in the groups. Hence, those students who had been retained were omitted in comparisons of the old, average and young groups (see Table 1). Comparisons between females and males, however, included all students on whom data were collected.

## CHAPTER III .

### RESULTS

The Chi square statistic was used to determine significant differences between the expected and observed frequencies of students being placed in categories of the dependent variables. All comparisons made between females and males resulted in significant differences. Table 2 shows the observed frequencies of females and males in high, middle, and low first and second grade reading groups. Analysis of the data indicated that there was significant discrepancy between the observed and expected frequencies,  $\chi^2(2) = 13.73, p < .05$ . More females and fewer males were found in the high reading groups than would be expected; and fewer females and more males were found in the low reading groups than would be expected if there were no real differences in reading ability of females and males.



Table 2  
 Number of Females and Males in High, Middle, and Low  
 First and Second Grade Reading Groups

Group	Reading Group			Totals
	High	Middle	Low	
Females	97	83	47	227
Males	83	77	90	250
Totals	180	160	137	477

Similar discrepancies were noted in the comparison of teacher ratings received by females and males as shown in Table 3. The difference between observed and expected frequencies was significant,  $\chi^2(2) = 16.28, p < .05$ . More females and fewer males were rated as high in overall achievement; and fewer females and more males were given below average ratings than would be expected if there were no real differences in academic achievement of females and males.

Table 3

Number of Females and Males Rated  
as High, Average, or Below Average in Achievement  
by Kindergarten, First, and Second Grade Teachers

Group	Ratings			Totals
	High	Average	Below Average	
Females	80	197	43	320
Males	63	192	87	342
Totals	143	389	130	662

Comparison was also made of the number of retentions in the female and male groups. These data are presented in Table 4. The Chi square computation indicates that there is a significant difference between the observed and expected frequencies of retentions in the two groups,  $\chi^2(1) = 15.83$ ,  $p < .05$ . Fewer females and more males were retained than would be expected if there were no true differences between the two groups.

Table 4  
 Number of Retentions Among Female and Male  
 Kindergarten, First and Second Graders

Group	Repeaters	Non-Repeaters	Totals
Females	22	298	320
Males	58	284	342
Totals	80	582	662

None of the comparisons of the reading group status of old, average age, and young students in the Modal-age groups revealed significant differences between observed and expected frequencies. Comparisons of teacher ratings of old, average age, and young students did not yield significant differences in the first and second grade groups. Data on teacher ratings of kindergarten students were pooled, both females and males being considered at once, because in five of the nine cells for the female students and four of the nine cells for the males, the expected frequencies were less than five, so that analysis by Chi square was not possible. The data for this comparison, as shown in Table 5, was then found to contain discrepancies between the observed and expected frequencies,  $\chi^2(4) = 32.49, p < .05$ . More of the old pupils were



given high ratings than would be expected. Fewer old children and more young children were rated as below average in overall achievement than would be expected. Furthermore, more of the average age children and fewer of the young children were rated as average in achievement than expected by chance.

Table 5

Teacher Ratings of Old, Average Age, and Young  
Kindergarten Students

Group	Ratings			Totals
	High	Average	Below Average	
Old	13	43	1	57
Average	1	42	5	48
Young	6	45	23	74
Totals	20	130	29	179

A comparison of the number of retentions in the old, average age, and young groups from all grades, as shown in Table 6, yielded significant differences between observed and expected frequencies,  $\chi^2(4) = 24.95$ ,  $p < .05$ . Fewer of the old students and more of the young students were retained one or more years.

Table 6

Number of Retentions Among Old, Average Age,  
and Young Kindergarten, First and Second Graders

Group	Repeaters	Non-Repeaters	Totals
Old	10	195	205
Average	22	195	217
Young	48	192	240
Totals	80	582	662

## CHAPTER IV

### DISCUSSION

None of the comparisons made of old, average, and young students' reading levels resulted in significant differences, indicating that age is not a factor in children's ability to read. Durkin (1964) noted the increasing importance over time of high intelligence for high achievement in reading. Nimnicht et al., (1963) concluded that age is the least reliable predictor of school success, as indicated by teachers' ratings. The present study did find that for kindergarten students, age and teachers' ratings were related. More of the old pupils were given high ratings than would be expected, and more young pupils were rated as below average than would be expected if there were no real differences between the age groups. However, no significant differences were found between the age groups at the first and second grade levels on the teacher ratings assigned the students. Finding differences at the kindergarten level, but not at the first and second grade levels, might indicate that differences evident during the first year of schooling are minimized by the time the children are promoted to the first grade. On the other hand, it may also reflect differences in the ways that kindergarten and first and second grade teachers rated their students.



For instance, kindergarten teachers' criteria may have involved impressions of the children's maturity and general readiness for schooling, and first and second grade teachers may have focused more on actual performance of the children on academic tasks in the classrooms.

The present study found that fewer old students and more young students had been retained than would be expected. Also, fewer females and more males were retained than would be expected if there were no differences in the groups. King (1955) found similar differences between young and old and male and female pupils. Baer (1958) also found that a significantly greater number of retentions occurred in the group of younger pupils involved in the study. Thus, the data from the present study lend further support to the contention that younger pupils, especially males, may be expected to encounter difficulty in school. However, reasons for such difficulty cannot be stated conclusively from the data under consideration. Johnston (1964) found that students in the youngest group studied were significantly more likely to experience retardation and that boys were more likely to encounter problems in emotional adjustment than girls. Since these variables were not controlled for in the present study, it is possible that their influence may be reflected in the data.

The finding that more females and fewer males were reading in the high reading groups, and fewer females and more males in the low reading groups might indicate one factor contributing to the higher number of retentions among males. Once the retainees were pulled from the data, no differences were found in reading group status between the age groups, which would enhance the likelihood that retainees were not promoted because of reading difficulties. Sex differences were also observed in comparisons of teacher ratings received by females and males in kindergarten, first, and second grade. More females and fewer males were rated as high in overall achievement, and fewer females and more males were given below average ratings than would be expected if there were no real differences between the groups. Such would magnify the apparent disadvantage that males have in the school situation, at least in the early grades.

### Conclusions

The data from the present study do provide some evidence that younger pupils are more likely to encounter difficulty in school than older pupils. Such was found to be true specifically in the case of probability of retention; however, reading achievement as determined by teacher ratings, did not appear to be affected by

age. Comparisons of females and males on all dependent variables indicated that males were more likely to experience academic difficulties. The implication of the study, then, would be that age alone is insufficient in predicting school success. Therefore, the age-related criteria for school admission adhered to in the majority of school systems in the nation may be viewed as limited in ability to delay entrance of those pupils not yet ready for academic work. More flexible and comprehensive screening is needed.

#### Recommendations for Further Study

It is suggested that further research in the comparison of young and old students' academic ability be done, especially at the local school system level, to determine the need for altered school admission policies. Age variables should not be considered alone, as the present study and previous research indicate that other variables may be operating. Research has recently investigated the use of perceptual-motor measures in predicting academic success. One such study found that portions of the Marianne Frostig Developmental Test of Visual Perception (1963) correlated highly with teachers' evaluations of their pupils on a complex teacher rating scale (Chissom, Thomas & Biasiotto, 1972). Similar results were obtained in a second study (Chissom, Thomas & Collins, 1974).



The Early School Admission Program of Stokie, Illinois, is one example of flexible, comprehensive admission policy (Ahr, 1967). The screening involves assessment in intellectual, social, emotional, physical and motor development. Further research in the area of school admission policy may well consider seeking out and testing of basic screening instruments or batteries. Although the current age criterion is attractive due to cost and simplicity, more effective screening procedures may "pay off" in the long run by assuring that those students entering school are prepared to take full advantage of the educational program provided for them.

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## APPENDIX A

## Teacher Questionnaire

Number \_\_\_\_\_ Name \_\_\_\_\_

\*\*\*\*\*  
 DO NOT WRITE IN THIS SPACE TO BE OBTAINED BY THE RESEARCHER

Number \_\_\_\_\_ Sex \_\_\_\_\_ M \_\_\_\_\_ F \_\_\_\_\_ Date of Birth \_\_\_\_\_

Date of school entrance \_\_\_\_\_ (Kg. \_\_\_\_\_ 1st \_\_\_\_\_) Current grade \_\_\_\_\_

Has child been retained? If yes, did child repeat kg. \_\_\_\_\_ or 1st \_\_\_\_\_

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## TEACHER DATA:

Is this child reading in your high \_\_\_\_\_ middle \_\_\_\_\_ or low \_\_\_\_\_ reading group?

What is your overall rating of this child's level of achievement?

High \_\_\_\_\_ average \_\_\_\_\_ below average \_\_\_\_\_

Thank you for your time and cooperation. The information you've provided above will be used in a research project for partial fulfillment of the requirements for the master's degree at Austin Peay. To maintain an optimal degree of objectivity on the ratings of the children's achievement, it has been decided to withhold particulars of the study at this time. However, results will be communicated to the school.