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# The Effectiveness of A Pre-First Grade Program on Later Academic Achievement

## Master's Thesis

**Submitted to the Faculty  
Of the School Psychology Program**

College of Liberal Arts  
ROCHESTER INSTITUTE OF TECHNOLOGY

By

## Betsey Grossman

**In Partial Fulfillment of the Requirements  
for the Degree of Master of Science**

Rochester, New York

July 15, 1997

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Running head: EFFECTS OF PRE-FIRST

The Effectiveness of A Pre-First Grade  
Program on Later Academic Achievement  
Betsey Grossman  
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### Abstract

Extra-year programs are widely used to help students who are deemed "unready" to master the curriculum of the next grade. This study investigated the academic effectiveness of a pre-first grade program in a suburban, predominantly Caucasian, upper middle class school system. Twenty-five matched pairs of children were selected for the study based on a readiness score on the Brigance K & 1 screening. Children who spent an extra year in pre-first grade were matched with youngsters who proceeded directly to the first grade based on gender, date of birth, and Brigance score. While no significant differences were found between the two groups of students on the basis of Iowa achievement test scores in reading and language, a significant difference was found between the two groups in mathematics (fourth grade) .

### **Effects of Pre-First Grade Placement on Academic Achievement**

At a time when school districts are slashing budgets, eliminating programs, and laying off teachers, one expensive program area is booming: Extra year programs. Schools often state that they implement extra year programs in order to reduce school failures. However few studies support this idea (Gredler, 1992; May & Kundert, 1992; Bell, 1972; Talmadge, 1981; May & Welch, 1984; Hagbord et al, 1991; Johnson, et al, 1990; Kilby, 1982; Shepard & Smith, 1987; Ferguson, 1991; Shepard, 1989; Buntaine & Costenbader, 1997).

Proponents of extra year programs such as programs for children between kindergarten and first grade commonly called pre-first believe that not all children are ready for first grade and that the extra year will give the child a chance to mature emotionally, socially, and intellectually. The premise is that after the extra year, the child will be better able to cope with academic tasks (Gredler, 1992)

According to Harris (1970) transition rooms were utilized in many large city schools in the 1940's. However this extra year program was not widely implemented until several decades later (Gredler, 1984). There has been a dramatic increase in the use of the transition room as an educational placement for at risk students within the last thirty years (Gredler, 1992). Along with transitional rooms, the use of retention has been given increased attention

Extra-year programs are widely used to help students who are deemed "unready" to master the curriculum of the next grade. These extra year programs take on several forms:

- Pre-kindergarten programs typically consist of an extra year of schooling before entering kindergarten.
- Pre-first grade programs are generally a year of instruction between kindergarten and first grade.

- Transitional Class is a term used to describe both pre-kindergarten programs and pre-first grade programs. The common characteristic of these classes is that they provide an extra-year of school between two traditional grades.

Extra year programs are expensive to operate primarily because schools typically try to limit class size to 15 students. According to research conducted in 1992 by May and Kundert (1992) for a school district to operate two transitional classes for 15 students each at New York State's average yearly per-pupil allocation of \$8,254 per child, the district is spending \$247,620 annually on these programs.

May and Kundert (1992) surveyed 359 of New York state's 718 school districts to determine how prevalent school-readiness programs were. Of the 260 schools that responded, more than half reported having some type of extra-year program: 57% said that they had a pre-first grade program, 46% said that they recommend delaying school entry one year when the child appears unready for first grade and 83% said that they had a developmental/readiness kindergarten (May & Kundert, 1992).

School personnel who support the use of extra year programs reason that transitional programs reduce school failure (Gredler, 1984). Advocates of extra-year programs believe that some children need more time to mature before they are ready for the demands of the classroom (Gesell Institute of Child Development, 1980). Horm-Wingerd, Carella and Warford (1993) investigated teachers' perceptions of the effectiveness of transitional classes. The investigators had teachers fill out a questionnaire assessing the perceived effectiveness of transition programs. The results of the study indicated that teachers perceived the transitional program as effective in facilitating academic achievement, social-emotional development and improved attitude toward school (Horm-Wingerd, Carella and Warford, 1993). However, most studies on pre-first programs show no educational advantages (Gredler, 1984; May & Welch, 1984; Shepard & Smith, 1987; Ferguson, 1991; Shepard, 1989).

While most of the research on the effectiveness of extra year programs compares first-grade academic performance of the retained child with that of an at-risk peer, who instead of being held for a year, went directly on to the next grade, some studies include additional comparison groups, and others compare academic performance several years after the early school experience.

Some studies have found that when allowed to progress normally through the grades, a student judged to be "at risk" will perform better on group achievement tests than a student similarly found to be "at risk" who was retained in a transitional room. In assessing the effectiveness of the transitional program, Bell (1972) compared the scores on the Stanford Achievement Test for an "at-risk" population and for a transitional group at the end of both first and second grades and found that the scores of the "at risk" group were higher than those of the transition room group both years (Bell, 1972).

The effects of extra year programs on students self-concept has also been investigated. Bell (1972), along with assessing academic achievement, investigated the students' self-concept. The results of the self-concept measurement found that after both first and second grades, the at risk group's self-concept score increased slightly but the transition room group's score dropped significantly (Bell, 1972).

Talmadge (1981) compared the reading achievement of students in a transitional program with those who were identified as "at-risk" but who progressed normally through the grades. The reading achievement of students in the transitional room were no higher than the "at-risk" students (Talmadge, 1981).

Gredler (1984) reviewed five studies evaluating pre-first-grade/transitional classes and found that in four of them, the children in extra-year classes were no different in achievement after the extra year than children considered "potential first grade failures" who were placed in the regular first grade. In the one study that did support the use of a transitional class, the results were "washed out" by fourth grade (Gredler, 1984).



May and Welch (1984) compared the achievement test scores of children who were placed in an extra-year program and other high risk children who were recommended for the program but did not take part. The results indicated that there were no differences on achievement test data nor on reported number of referrals or placements in special services (May & Welch, 1984).

Kilby (1982) also investigated the long-term effects of a pre-first program. No significant differences between the groups on measures of achievement at the end of first, second, and fourth grades were found. Furthermore, children who had spent an extra year in a pre-first grade placement were consistently behind in achievement compared to a group of typical students in grades four through eighth (Kilby, 1982) .

Buntaine and Costenbader (1997) compared a group of children identified by the Gesell School readiness test as being developmentally immature at the time of the kindergarten screening and attended a transitional, pre kindergarten program, with a group of children who scored similarly on the Gesell School Readiness test but were placed in a regular kindergarten program. Again, no significant differences in elementary academic achievement between the two groups was found.

The impetus for transitional programs and for retention are identical: To give the child more time in order to learn the curriculum. While several studies of extra year programs have focused on pre-first placements, other research has looked at the effects of retention. Hagbord, Masella, Palladino and Shepardson (1991) looked at high school students with a prior history of grade retention and compared them to a group of non retained students. On school-record data, retained students were significantly lower on measures of academic achievement, had higher rates of absenteeism from school, and were lower on three subscales of a self-esteem measure (Hagbord et al, 1991).

In their review of research on retention, Jackson (1985) and Carstens (1985) both found that there was no evidence to suggest that grade retention was any more beneficial than grade promotion for students experiencing academic difficulties. Similarly, Shepard

and Smith (1986) concluded that the outcomes of elementary school grade retention are negative.

Johnson, Merrell, and Stover (1990) examined the effects of early grade retention on the academic achievement of fourth-grade students. The study compared fourth-grade students who were retained at the kindergarten or first grade level with both a group of fourth grade students who were recommended for retention at the kindergarten or first grade level but were not actually retained and with fourth-grade students who had made normal progress through the grades. No significant differences in academic achievement between the retained and recommended for retention but not retained groups were found. However, both groups were significantly lower on several academic achievement measures than were the comparison group of typical youngsters (Johnson, et al, 1990).

Given the recent cutbacks in funding for education and the emphasis of policy makers on the early identification of children who are likely to experience learning difficulties in school, it is important that school administrators base retention and promotion decisions on well executed evaluation studies. Unfortunately, there have been relatively few empirically sound studies to guide educators in these decisions.

The purpose of the present study was to give some information about the academic achievement level of children who spent an extra year in a pre-first grade placement and to compare these children to similarly matched students who were promoted to the first grade. With increased understanding and better ability to identify students at risk, interventions tailored to prevent and control risk factors can be designed and implemented.

## Method

### Subjects

The original subject pool for this study was all sixth, seventh, eighth, and ninth grade students in a single middle school in Western New York. The population of the

district was fairly homogeneous and consisted of predominately Caucasian, upper middle class children.

The cumulative record files of approximately 75 sixth, seventh, eighth, and ninth grade students were examined. Children who left the public school system, as well as those who entered the district after kindergarten or first grade were excluded.

Subject selection was based on a "readiness" score on the Brigance K & 1 Screen at the kindergarten screening. In the spring prior to kindergarten enrollment, the Brigance was individually administered to all children who were eligible for school entry the following year (age 5 by December 1). All subjects were enrolled in a regular kindergarten program in the district. Following kindergarten, children were offered placement in the pre-first grade program on the basis of kindergarten teacher recommendation, readiness and social/emotional development. Recommendations for the pre-first grade program were generated by a committee consisting of kindergarten teachers, pre-first grade teachers, the school psychologist, and a school counselor. Placement in the pre-first room was finally determined by parental approval.

The children in the two groups were matched on three variables: Sex, date of birth, and Brigance K & 1 readiness score. A total of 25 pairs of children were obtained through this matching procedure (N=50). In any pair, total Brigance readiness scores differed no more than 1.5 points. Matched pairs were within three months of each other in chronological age at the time of screening.

### Measures

*Brigance K & 1 Screen for Kindergarten and First grade* (Brigance, 1987). The Brigance K & 1 Screen for Kindergarten and First grade (Brigance K & 1) is a criterion-referenced screening instrument which purports to measure several broad key skill areas: Language, motor ability, number skills, body awareness, and auditory and visual discrimination. Raw scores on the test are recorded in the left column of the section and this number is multiplied by the point value in the second column to derive the

student's score for each assessment. The total score is tallied by adding the number in the students score column. Due to district procedures, the assessment is scored out of a possible score of 82.5 points. The manual for the Brigance K & 1 provides no reliability or validity data. Norms used in preparing the test are not specified (Brigance, 1987).

*Iowa Tests of Basic Skills.* The Iowa Tests of Basic Skills (Iowa) is a group administered, norm-referenced achievement battery. The Iowa batteries are well known, widely standardized achievement measures purporting to assess the development of general cognitive skills. It was routinely given to district students in the Spring of second, fourth, and sixth grades. Percentiles on the Iowa (reading, language, and mathematics) were obtained for both the experimental and control groups. According to a review in 1992, the Iowa was developed on "...sound measurement practices and meets high standards of technical qualities" (Lane, 1992).

#### Procedure

The cumulative records of each of the matched pairs were reviewed and the Brigance K & 1 readiness score, chronological age, sex, and score on the outcome measures were recorded. Because of missing data in school records, students in eighth and ninth grades were eliminated. Outcome measures included: Iowa percentile scores in reading, language, and mathematics (fourth grade). To ensure the confidentiality of the information, all data were number coded.

#### Treatment

The treatment in the current study was a pre-first grade program established in 198 . The pre-first program was designed to meet the needs of a specific group of students who were determined to be chronologically, but not developmentally "ready" for a regular first grade curriculum. Children were identified after kindergarten by a committee consisting of kindergarten teachers, pre-first teachers, a school psychologist, and a school counselor. The number of children in a pre-first grade class never exceeded 15,

approximately half the size of a typical first grade class in the district.

### Results

A dependent t-test was used to compare the performance of the two groups of children on the achievement measures. No significant differences between the pre-first group and those who went directly to first grade were found in Iowa achievement test scores in reading,  $t(23) = .29$ ,  $p = .77$ . Similarly, no significant difference in Iowa achievement test scores in language between the two groups were found,  $t(23) = .59$ ,  $p = .56$ . However, a significant difference in Iowa achievement test scores in math between the two groups was found,  $t(23) = 2.71$ ,  $p = .01$ . Those children who went through a pre-first grade program had significantly lower Iowa math percentiles as compared to the control group. Achievement scores in percentiles in reading, language, and mathematics on the fourth grade Iowa are compared in Table 1.

### Discussion

All children in this study were compared at the fourth grade level of achievement as measured through the Iowa group achievement test. While this study finds no significant differences in elementary academic achievement in the areas of Reading and Language between those who went through a pre-first program and those who went directly on to the first grade, a significant difference was found in the area of Mathematics. Reasons for this finding may be due to the emphasis of the treatment. A variety of variables may have contributed to this significant difference. The program may have focused on acquiring reading and language skills. Furthermore, the children identified as benefiting from the program may have been ones who demonstrated perceptual organizational difficulties. Finally, this group could have just had poorer math achievement as compared to other groups of students.

Given the recent emphasis on policy towards the early identification of children who are likely to experience learning difficulties in school, it is important for school administrators to base retention and promotion decisions on well planned evaluation

studies. Unfortunately, there have been relatively few well planned studies to guide educators in these decisions. Additionally, there is a great deal of disagreement on the academic and social/emotional effects of both transitional programs and the retention of students. Therefore, the primary purpose of the present study was to provide information about the academic achievement of children who were not promoted but spent an extra year in a pre-first placement. The study was designed to compare children who received a year in pre-first grade to a matched sample of children promoted to the first grade. With increased understanding and better ability to identify students at risk, interventions tailored to prevent and control risk factors can be designed and implemented.

The present study involved a homogeneous, predominately Caucasian, upper middle class suburban district. Future studies might expand this investigation over various geographic regions and/or socioeconomic groups. Further analysis to determine long-term academic effects of the pre-first placement along with self-concept and attitudinal measures would provide additional information on the impact of extra year programs.

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Table 1

Academic Achievement Means and Standard Deviations for Pre-first Grade Students and a Matched Sample of Children Promoted to the First Grade

	Pre-First Grade (n=24)	Control (n=24)	t
Iowa Reading			
M	75.66	74.16	.29
S.D.	22.44	19.32	
Iowa Language			
M	67.71	70.33	.59
S.D.	20.74	20.80	
Iowa Mathematics			
M	67.42	81.42	2.71*
S.D.	24.64	16.02	

\*p=.01