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An Assessment of Preschool Education Options for Rural and Small Village Areas[1]

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The purpose of the study was to determine the effects of four preschool experiences on seven readiness skill areas. The preschool experiences included no treatment, a home based program, a formal preschool program, and a combination of the latter two programs. The seven dependent variable readiness skills were verbal memory, fine motor skill (draw a design), numerical memory, conceptual grouping, gross motor skill (leg coordination), a composite of the five areas and receptive language. Analyses of variance and Scheffé procedures were used to analyze data. The group receiving the combination program differed positively and significantly from the other groups in both numerical memory and conceptual grouping. A similar finding was observed in conceptual grouping for the home based program group. It was concluded that a cooperative home/school bond is important for improving preschool readiness skills. It was further concluded that a home based program can provide important experiences related to child development in geographical areas where formal preschool programs are not available.

Families residing in small villages and rural areas of the country generally have fewer educational alternatives available for their preschool children than their urban and suburban counterparts. Not only are preschools and nursery schools fewer in number and less accessible, but educational television programming may or may not exist. As a result, children entering schools in rural areas may possess fewer academic readiness skills than their peers residing in higher population density regions. Since educational gaps are often difficult to reduce once children have entered schools, alternative preschool educational experiences should be investigated to develop solutions to this problem. While it is true that rural areas sometimes do possess some type of preschool or nursery school programming, it is equally true that this is often not the case. Therefore, research should address both possibilities.

The purpose of the present study was to determine the effects of four different types of preschool experiences on a variety of readiness skills. The preschool experiences included no preschool or nursery school program, a home based program, a formal preschool program and a combination home based/formal preschool program. All possibilities were investigated in a small village setting. The readiness skills used as dependent variables for the study included verbal memory, fine motor skills (draw a design), numerical memory, basic concepts (conceptual grouping), gross motor skills (leg coordination), a composite of these five and receptive language. It was hypothesized that any of the three programs would provide experiences which would enable students to demonstrate significantly greater readiness skills than the group which received no preschool program. It was expected that students in the group which received both the home based program and the formal preschool program would demonstrate significantly greater readiness skills than each of the other three groups.

Research in the area of preschool education has increased over the past several years due, in part, to an increasing interest in identifying and remediating children considered to possess characteristics which are viewed as predicting learning difficulties in subsequent schooling. Reynolds [9] cited an abundance of research which demonstrates the success of early education programs when such programs are matched to the specific deficiencies of individual children.

Many effective preschool programs have operated successfully in nonschool settings. Bronfenbrenner [2] concluded that the results of home based instruction suggest that focusing the program directly on the parent and the child in context can lead to meaningful improvements in the lives of both. Two decades ago, Durkin [4] conducted a study which demonstrated the effectiveness of informal reading instruction of parents of preschoolers. More recently, Sawyer and Sawyer [12; 13] found significant relationships between the informal reading and language instruction provided by parents and a variety of reading readiness skills which included rhyming, letter recognition, school language and listening and quantitative language; this relationship was not found to exist between attendance at a formal preschool program and those same readiness skills.

These are not radical findings considering the results of a number of studies on the attachment behavior of preschool children. These studies [5; 10] demonstrated preschoolers' consistent significant attachment preference for their mothers, even over very familiar daycare teachers, when entering new or strange situations. The instructional potential found in such situations, therefore, should come as no surprise.

On the other hand, conducting research on home based preschool instructional programs abounds with problems including participant selection, instrumentation, attrition rate of participants and research design [7]. Also, the

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large amount of contact time which is generally maintained between the researcher/teacher and the parent can result in an unintended negative effect on the latter in terms of feelings of dependence, passiveness, helplessness and inadequacy [6]. To address this problem, Gray and Wandersman [7] recommend that research on home based instruction of preschoolers focus on those programs which emphasize parent/child interaction, communication and language development, techniques which enhance the parent's sense of self-control, and a provision which assists parents in working effectively with a variety of social agencies. Therefore, the problem for this study was to assess a home based program by itself and in context with other programs, and which also focused upon the specific needs of the child as recommended by Reynolds [9].

Method

A sample of 90 children was used in the study. The sample comprised the incoming kindergarten classes at public and private elementary schools in a small village upstate New York school district. Data were collected at the spring screening; the screening had a 96% participant rate in terms of the number of children who enrolled in kindergarten the following fall. During the fall prior to the screening, 28 of the children enrolled in and attended a formal preschool program for five hours of instruction per week. The program was typical of many preschool programs insofar as it was structured to include language development, number skills, basic concepts, fine and gross motor training, social development and opportunities for free play with other children.

Another 14 children participated in a home based program which was developed specifically for this study. A comprehensive description of the program is described elsewhere [11]. The basic focus of the program was on the development of cognitive, motor and social skills which would form the basis for a successful kindergarten experience. Four specific components of the program were developed to achieve the developmental goals. The first component was evaluation; each of the children was evaluated in the areas identified as dependent variables in the study in order to determine individual child needs. The results of this evaluation were communicated to parents in the form of specific recommendations and activities which were viewed as appropriate for eliminating any identified deficiencies in the skill areas. The second component was a one-half day parent training program. During this session parents were taught how to use the materials provided to them and also how to use the results of the evaluation in increasing their child's readiness skills. The third component was a learning materials kit. It was an expanding envelope which contained many items found in a kindergarten or preschool program and which related directly to the activities found in the resource book. The final component, the resource book, was viewed as the key to the program. It described in clear nontechnical language the important objectives for each skill area and from six to fifteen parent/child activities which would assist children in mastering the objectives.

The remainder of the sample was divided into two equal groups of 24 children each. One group participated in both the formal preschool program and the home based program while the other group participated in neither program. A period of six months elapsed between the commencement of the home based and formal preschool program and the time at which post treatment data were collected.

At the spring kindergarten screening, data were ob-

Table 1

Summary of Means and Standard Deviations for Four Treatment Groups and Seven Variables

Variables	Treatments			
	No Treatment $N=24$	Home Only $N=14$	Preschool Only $N=28$	Home and Preschool $N=24$
Verbal Memory	20.69 (6.29)	22.54 (4.75)	22.75 (5.04)	23.00 (5.02)
Draw-a-Design	5.75 (2.47)	5.07 (2.02)	6.64 (1.89)	6.79 (3.28)
Numerical Memory	6.79 (2.25)	7.14 (1.83)	7.89 (2.67)	9.17 (3.73)
Conceptual Grouping	6.92 (2.69)	8.29 (2.02)	7.93 (2.29)	9.04 (2.54)
Leg Coordination	9.04 (2.35)	9.43 (1.45)	9.54 (2.10)	9.58 (1.74)
Composite (of above 5)	49.75 (10.08)	52.50 (7.07)	54.75 (9.49)	56.33 (13.93)
Receptive Language	73.21 (16.34)	73.50 (8.05)	77.54 (9.51)	81.46 (8.75)

Table 2

Summary of ANOVA *F*-Values
for Four Treatments on Seven Variables

Variables	*df*	MS_b	MS_w	*F*	
Verbal Memory	3,86	20.52	28.69	.72	N.S.
Draw-a-Design	3,86	12.19	6.25	1.95	N.S.
Numerical Memory	3,86	25.16	7.81	3.22	$p<.05$
Conceptual Grouping	3,86	18.50	5.92	3.12	$p<.05$
Leg Coordination	3,86	1.47	3.92	.37	N.S.
Composite (of above)	3,86	195.90	114.87	1.71	N.S.
Receptive Language	3,86	332.62	130.00	2.55	N.S.

tained from all children in the areas of verbal memory, fine motor skills (draw-a-design), numerical memory, basic concepts (conceptual grouping), gross motor skills (leg coordination), a composite of these five skills and receptive language. The first six skills were measured using specific subtests of the *McCarthy Scales of Childrens' Abilities* [8], while receptive language was measured with the *Test of Auditory Comprehension of Language* [3].

Results

Table 1 summarizes the means and standard deviations of the post treatment data. While it appears that children participating in both programs were superior in readiness skills to all other groups, analysis of variance (ANOVA) *F*-values were significant for only two skill areas: numerical memory and basic concepts (conceptual grouping). Table 2 summarizes the ANOVA results for all seven variables.

Table 3

Summary of Scheffé Test *F*-Values
of Numerical Memory Comparisons
for Multiple Comparisons of Four Treatment Groups

	Treatments		
Source	Home Only	Preschool Only	Home and Preschool
No Treatment	.14 N.S.	1.98 N.S.	8.71 $p<.01$
Home only		.67 N.S.	4.68 $p<.01$
Preschool only			2.71 N.S.
No treatment and home only			4.00 $p<.05$
No treatment and preschool only			3.37 $p<.05$
Home only and preschool only			2.29 N.S.
No treatment, home only and preschool only			2.05 N.S.

Using Scheffé Tests to further analyze the initial *F*-values which reached significance provided additional findings with respect to the differences between the four sample groups. As indicated in Table 3, only the children who were administered both programs scored significantly higher in numerical memory. As indicated in Table 4, similar results were obtained in the area of basic concepts (conceptual grouping); however, the group which was administered only the home based program also scored significantly higher in this skill area than the group which was administered neither program.

Discussion

While verbal memory, fine motor skills (draw-a-design), gross motor skills (leg coordination), the composite and receptive language means were not significantly different between groups, it should be noted that there were differences favoring either program as opposed to neither program and that such differences were consistent across skill areas. It should also be noted that the treatment period lasted only six months. Considering the fact that a child engages in a variety of experiences for five years before entering elementary school, it is conceivable that a longer treatment period could produce larger and more significant differences. Even with the short treatment period, one may conclude that non-obtrusive home based instruction in combination with formal preschool instruction is effective in achieving significantly greater means in numerical memory and basic concepts (conceptual grouping).

Due to a number of factors, an increasing percentage of preschoolers are attending formal preschool programs [1; 12; 13]. While this is often done to provide children with the academic readiness skills necessary for successful

Table 4

Summary of Scheffé Test *F*-Values
of Conceptual Grouping
for Multiple Comparisons of Four Treatment Groups

	Treatments		
Source	Home Only	Preschool Only	Home and Preschool
No Treatment	2.81 $p<.05$	2.22 N.S.	9.16 $p<.01$
Home only		.21 N.S.	.84 N.S.
Preschool only			2.67 N.S.
No treatment and home only			4.00 $p<.05$
No treatment and preschool only			3.37 $p<.05$
Home only and preschool only			2.29 N.S.
No treatment, home only and preschool only			2.05 N.S.

participation in a kindergarten program, the findings reported here do not support such an assumption; this is particularly true when a high degree of parent involvement is not formally developed. Rather, the findings reported here lend further support to the nonsignificant findings relating preschool attendance to readiness skill development reported earlier [12; 13].

Over the past several years, educators have recognized the importance of a cooperative home/school environment. This importance, as found here, seems to extend downward into the preschool years. When formal preschool experiences are unavailable to certain children, however, the burden of providing the readiness skills rests with the family. It appears from the data reported here that such a responsibility is not outside of the capability of the family. School districts must develop methods of low cost assistance to such families for the purpose of developing the necessary readiness skills. Research with other age levels, with other skill areas, and over longer treatment periods should also be conducted. Longitudinal studies using multiple regression data analysis techniques are attractive inasmuch as they may provide information which will be both educationally effective and economically effective. In any case, it is imperative that schools in less densely populated areas attend to this problem; the school-supervised, home-based preschool program appears to possess some promising characteristics for meeting this need.

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