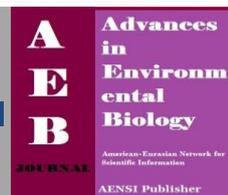




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## Preschool course effect on students' adaptive behavior according to the intelligence control

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### ABSTRACT

This study performed to study the effect of preschool course on students' adaptive behavior. The populations concluded all first elementary school students (N= 1290) in Andimeshk city in the academic year of 2012-2013. The study sample consisted of 320 first and second grade students selected by stratified sampling technique. They were divided into two groups of students who have passed the pre-school period (160 totals) and the students who have not passed it (160 totals). The Rutter Children's Behavior Questionnaire (Rutter, 1967) is a form by behavioral problems children aged from 6 to 13 identified by teachers or parents was completed by only teachers in this study. Student academic performance was measured through their correct answers to the standard questions developed by Department of Education with regard to content and purpose of the training of first class. Raven's colored Progressive Matrices Test (Raven et al., 1990) was also used in this research. Results showed that first and second grade students who have passed the pre-school had significantly higher academic performance and adaptive behavior than those students who have not passed with the intelligence control.

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## INTRODUCTION

Rapidly evolving preschool education poses challenges for local, state, and federal education policy. In 1960, just 10% of the nation's 3 and 4-year-olds were enrolled in any type of classroom. Less than a half century later, nearly three-quarters of children enroll in a preschool classroom at age 4 and about half do so at age 3 [1]. These trends have been accompanied by growth in private preschool education and child care, state-funded pre-K, preschool special education, and the federal Head Start program [2]. Public programs currently enroll about half of those in programs at ages 3 and 4. Children are therefore served by programs that vary widely in enrollment, program design and operation, and this is true across and even within states. Issues of quality also arise out of this miscellany. A recent study in California, for example, revealed that state pre-K offered the highest educational quality, but that educational quality averaged across all programs, public and private, was relatively low [3].

It seems that the activity of preschoolers is not very important because they work with young audiences. However, 75 percent of a child's brain and 90 percent of their abilities are formed in the first 6 years of their life [4]. Also with growing the child and getting into the development social, he/she need to adapt the environment. Preschool programs are a community resource that promotes the well-being of young children [5]. Some believe that children who are suffering from lack of social skills (adaptive behavior) have very problems in adaptation with classroom environment [6]. In fact, the base of self-confidence, responsibility, independence and creativity in children is created in pre-school course and the kindergartens and teachers of these centers play an important role in the development of children and achieve the above objectives. The authors have shown that strengthening primary childhood experiences can be effective in increasing children's intelligence [7]. They believe that a preschool program improve children's mental and intelligence skills who are deprived of adequate facilities for the necessary experience. High quality early childhood programs improve the cognitive and social-

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emotional functioning of preschool children, which, in turn, influences readiness to learn in the school setting [8-9]. Goes on the note that high quality early childhood education programs influences future school success.

Most previous studies of preschool have focused on the question of whether or not preschool attendance influences future school success [11]. Indicated that pupils with pre-school education experience significantly out-performed their counterparts without such experience in all the school subject areas surveyed by the study. According to [11], the reading level of children who passed the preschool course was higher than the groups who were at home during this period [12]. Concluded that Well-designed preschool education programs produce long-term improvements in school success, including higher achievement test scores, lower rates of grade repetition and special education, and higher educational attainment [13], Revealed that pre-school education equip children with prerequisite skills which make learning easier and faster for children so exposed. They are very much responsible and take active part in curricular and co-curricular activities. A 2009 study found a significant difference between pupils who had pre-primary education and those without in their academic performances-cognitive ability, and motor skills [14].

Others found that preschool programs produced better long- term cognitive and social adjustment outcomes. A few recent reviews also wondered whether the effects of preschool programs differ by gender [15]. Concluded that students who have passed the pre-school period were very better in social development and compatibility and they have fewer emotional problems in their education period. A comparative study by Sylva & Pugh showed that children attended pre-school in comparison with those didn't passed the course had high academic achievement in all courses, but social behavior there was no difference between them [16]. They also found that girl students with preschool skills are better than the girls who have not passed preschool, in cognitive skills, cooperation, independence, focus and responsiveness in courses [17]. Demonstrated that attending pre-primary school had a large positive effect on third grade standardized Spanish and Mathematics test scores and non cognitive behavioral skills. Their attention, effort, discipline, and participation were positively affected by pre-primary school attendance that results in student's self-control [18]. Found that there was a significant difference between the performance of students in math, science, reading, writing and the average of these courses in terms of preschool education and adaptive behavior and the average of girls' scores was more than the boys.

In spite of all the benefits of preschool programs, TIMSS and PIRLS international study in 2011 conducted among 35 participating countries estimated the Iranian boy and girl students' ability in reading as average and relatively favorite [19]. It seems that preparation of special programs for pre-school children with the aim of developing a culture of storytelling to foster listening skills, comprehension and retelling concepts is a key requirement.

#### *International Evidence:*

Research in other countries confirms many of the U.S. findings regarding short- and long-term outcomes of pre-K. A randomized trial with long-term follow-up of high-quality half-day pre-K in Mauritius finds short-term improvements in children's learning and behavior, and reduced crime rates into adulthood. 81 Rigorous quasi-experimental studies in Latin America find increased test scores through third grade, as well as decreased school failure, increased educational attainment, and positive effects on attention, class participation, and discipline [20]. Several studies in the United Kingdom that are similar to the National Institute for Child Health and Human Development (NICHD) and ECLS-K studies in the United States find modest positive effects on cognitive development that persist for at least several years into school and mixed (but weak) effects on social development and behavior [21]. In the UK, entering school prior to age 5 has been linked with cognitive gains through age 16 and increased employment at age 33 [22]. Both early schooling and preschool attendance were associated with increased wage rates (about 3%) at age 33 [23]. Effects in these studies are similar for children from all economic strata (11). A New Zealand study finds positive long-term effects on cognitive abilities and some protection from getting into trouble through age 16 for children from all backgrounds [24]. UK and New Zealand studies found larger gains when 14 of 35 programs contained more middle class families [25] Finally, international comparisons find that increased duration of preschool education is associated with higher achievement test scores through age 15 and that very high participation rates are associated with less within-country inequality in test scores [26]. Initially, understanding the effect of preschool education on boy and girl children's performance can be a best way to enrich the content of these centers' training. Therefore, the following hypotheses were formulated:

*First hypothesis:* there is a significant difference between the academic performance of first-grade students who have passed or have not passed the pre-school course with controlling intelligence.

*Second hypothesis:* there is a significant difference between the adaptive behavior of the first-grade students who have passed the pre-school or have not passed it, with controlling intelligence.

*Third hypothesis:* there is a significant difference between the academic performance of second -grade students who have passed the pre-school or have not passed it, with controlling intelligence.

*Fourth hypothesis:* there is a significant difference between the adaptive behavior of second -grade students who have passed the pre-school or have not passed it, with controlling intelligence.

#### Methods:

The populations studied in this research concluded all first and second elementary school students (N=1290) in Andimeshk city in the academic year of 2012-2013. Using (27) table (1970), the study sample consisted of 320 persons selected by stratified sampling technique. They were divided into two groups of students who have passed the pre-school period (160 total) and the students who have not passed it (160 total).

The Rutter Children's Behavior Questionnaire (28) is a form by which behavioral problems children aged from 6 to 13 identified by teachers or parents was completed by only teachers in this study. Student academic performance was measured through their correct answers to the standard questions developed by Department of Education with regard to content and purpose of the training of first class. Teachers estimated students' performance in the form of the words as "require more effort" (from 0 to 12), "acceptable" (12 to 15), the "good" (15 to 17), "very good" (18 to 20). Raven's colored Progressive Matrices Test (29), recognized as a culture fair or culture reduced test of non verbal intelligence for young children, was also used in this research.

#### Findings:

This research has four hypotheses that the results of each hypothesis with the analysis of them has been explained below. Before considering the hypothesis for observing the default equality of variance of research variables was used Leuven test.

**Table 1:** Leuven's test results for Leuven default equality of variances in the scores of groups in research variables.

Significant level	second degree of freedom	first degree of freedom	F	Variable
0/152	158	1	1/78	Academic performance first grade
0/001	158	1	2/20	Adaptive behavior of second grade
0/91	158	1	0/019	Academic performance of first grade
0/24	158	1	1/82	Adaptive behavior of second grade

As seen in Table 1, assuming equal variances of scores confirmed in academic performance variables for the two groups first grade , also academic performance and adaptive behavior confirmed for two groups of second grade , but assuming equal variances are not met in the adaptive behavior variable for the two groups of second grade students.

To compare and test the hypothesis, the average of groups in research's variables (academic performance and adaptive behavior) with controlling student's IQ by analysis of univariate covariance (ANOVA) was used. We will mention the results of analysis and testing the hypothesis after.

First hypothesis: there is a significant difference between the academic performance of first-grade students who have passed or have not passed the pre-school course with controlling intelligence.

**Table 2:** the results of analysis of univariate covariance on academic performance scores of the two groups of first grade students who have passed or have not passed the pre-school course with controlling IQ

squares	Significant level	F	Average of squares	degrees of freedom	Sum of squares	The source of variations	Variable
0/04	0/08	2/99	2/02	1	3/01	IQ	Academic performance of female students
0/19	0/001	22/98	13/97	1	14/86	Group	
			0/693	157	98/09	Error	

As seen in Table 2, there is a significant difference between first-grade students who have passed the pre-school and the students who have not passed it in terms of academic performance with controlling IQ. With regard to  $F=22/98$  and significance level  $P<0/001$ , so the first research hypothesis is accepted.

**Table 3:** comparison of the academic performance of first grade students who have passed the pre-school education and the students who have not passed it

Significant level	degrees of freedom	t	average difference	standard deviation	average	Number	Girl students	Variable
0/001	158	6/78	0/79	0/69	3/33	80	students who have passed per-school	students' academic performance not passed per-school
				0/85	3/52	80	students who	

							have not passed per-school	
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According to the data of Table 3 and  $t$  calculated (6/78) and significant level (0/001) can be concluded that there is a significant difference between the academic performance of first grade students who have passed preschool education and the students who have not passed it and search hypothesis is confirmed.

Second hypothesis: there is a significant difference between the adaptive behavior of the first-grade girl students who have passed the pre-school or have not passed it, with controlling intelligence.

**Table 4:** the results of analysis of univariate covariance on the adaptive behavior scores of two groups of first grade students who have passed preschool or have not passed it, with controlling IQ

squares	Significant level	F	Average of squares	degrees of freedom	Sum of squares	The source of variations	Variable
0/11	0/001	19/58	363/34	1	363/34	IQ	Adaptive behavior of female students
0/46	0/001	137/14	2509/82	1	2509/82	Group	
			18/3	157	2873/23	Error	

As seen in Table 4, there is a significant difference between the first-grade girl students who have passed the pre-school and the students who have not passed it, in terms of adaptive behavior with controlling IQ, so regard to  $F=137/14$  and significance level  $P<0/001$ , so the second research hypothesis is accepted.

**Table 5:** comparison of the adaptive behavior of the first grade students who have passed the pre-school education and the students who have not passed it

Significant level	degrees of freedom	t	average difference	standard deviation	Average	Number	Girl students	Variable
0/001	158	15/2	12/56	3/19	79/85	80	students who have passed per-school	Adaptive behavior of students
				5/66	72/28	80	students who have not passed per-school	

According to the data in Table 5 and  $t$  calculated 15/20 and significant level  $P<0/001$  can be found that there is a significant differences between the Adaptive behavior of students who have passed the pre-school education and the students who have not passed it.

Third hypothesis: there is a significant difference between the academic performance of second -grade boy students who have passed the pre-school or have not passed it, with controlling intelligence.

**Table 6:** the results of analysis of univariate covariance on the Academic performance scores of two groups of second grade students in who have passed or did not pass it, with controlling IQ

squares	Significant level	F	Average of squares	degrees of freedom	Sum of squares	The source of variations	Variable
0/001	0/65	0/22	0/168	1	0/17	IQ	Academic performance of male students
0/05	0/002	8/99	7/81	1	7/79	Group	
			0/87	157	131/49	Error	

As seen in Table 6: there is a significant difference between the second -grade students who have passed pre-school and students who have not passed it, in terms of academic performance, so according to  $F=8/99$  and significance level  $P<0/002$ , the third hypothesis is accepted.

**Table 7:** comparison of the academic performance of second grade students who have passed Preschool education and the students who have not passed it

Significant t level	degrees of freedom	t	Average difference	standard deviation	average	Number	Boy students	-
0/001	158	5/89	0/83	0/9	3/23	80	students who have passed per-school	Male students' academic performance
				0/89	2/40	80	Students who have not passed per-school	

According to the data in Table 7 and  $t$  calculated (5/89) and significant level (0/001) can be found that there is a significant difference between the academic performance of boy students who have passed Preschool education and the students who did not pass it.

Fourth hypothesis: there is a significant difference between the adaptive behavior of second -grade students who have passed the pre-school or have not passed it, with controlling intelligence.

**Table 8:** the results of analysis of univariate covariance on the adaptive behavior scores of two groups of second -grade students who have passed preschool or have not passed it, with controlling IQ

squares	Significant level	F	Average of squares	degrees of freedom	Sum of squares	The source of variations	Variable
0/87	0/001	1114/73	5080/27	1	5080/27	IQ	Adaptive behavior of male students
0/92	0/001	1908/39	8697/28	1	8697/28	Group	
			4/557	157	715/51	Error	

As shown in Table 8 there is a significant difference between the second -grade students who have passed pre-school and students who have not passed it, in terms of adaptive behavior so according to  $F=1114/73$  and significance level  $P<0/001$ , the fourth hypothesis is confirmed .

#### Discussion:

the purpose of this study was to investigate the effect of passing the pre-school period on adaptive behavior and academic performance of students in the first and second grade in Andimeshk city. To achieve this objective four hypotheses have been proposed that we will discuss each of their results in this section. The results of first hypothesis were confirmed as first-grade students who had passed the pre-school had higher academic achievement than the students who had not passed it. The second hypothesis was supported as first grade students' adaptive behavior scores who had passed the pre-school were higher than the students who had not pass it. The study by Abbasian also showed that the students who had passed the pre-school period, in proportion to students who had not passed it were more compatible [30]. It should be noted that having more experience with peers and teachers in preschool contribute to socialization and lead to better preparing for latter formal education[31]. Stated that Preschool Children would experience less anxiety in first class. The third hypothesis showed that second -grade students' who had passed pre-school had higher academic performance those of counterparts who hadn't passed the preschool course. This finding was supported by Amiri & Asadi, and Shahim who found preschool students had high academic achievement and social development scores in all grades of elementary school [32-33]. It should be noted that an enriching preschool program certainly provides opportunities for children to develop their cognitive skills. Particularly, preschool programs develop cognitive skills of boy children who are from poor Families and are deprive of facilities at home to doing the necessary activities for the development of sensory-motor such as the games. The fourth hypothesis with controlling intelligence showed that there was a significantly difference between the second -grade students who had passed or hadn't pass preschool education [34]. Goes on the note that children's socialization process in a coherent and systematic producers begins with pre-school course and the child learns the necessary skills needed to communicate with others.

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