

The Interaction Between Socioeconomic Status and Preschool Education on Academic Achievement of Elementary School Students

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Abstract

Preschool education may help increase the academic achievement of school-age students. Still, for a segment in society, this is not feasible and children are not admitted into preschool due to parents' socioeconomic status. The purpose of this study was to measure the interaction between socioeconomic status and preschool education on students' academic achievement in Bahraini government elementary schools. The study adopted a quantitative approach. The sample was 402 girls and boys in grades 1 through 6. The results showed that students who had preschool education had better academic achievement than those who did not. There were no significant differences in students' later academic achievement with reference to socioeconomic status, and there was no interaction between preschool education and socioeconomic status on academic achievement. It was recommended that policymakers should encourage the private and public sectors to invest in preschool education, to conduct further research on the impact of socio-economic status on academic achievement at different school levels and to expand the dimensions of SES to include parents' skills and marital relationships and their impact on children's achievement.

Keywords: socioeconomic status, academic achievement, preschool, elementary schools

1. Introduction

During the last decade, the number of preschool education institutions has increased worldwide (Roser & Ortiz-Ospina, 2017). Bahrain is one of these countries where the number of preschool education institutions has increased rapidly. However, there are inquiries about the inability of a large segment of parents to register their children in this type of education. Many factors affect the achievement of elementary school students. Among such factors are teachers' qualifications, school environment, class peers, parents' social economic status, and enrolment in preschool education. Enrolment in preschool is influenced to a great extent by parents' socioeconomic status in the kingdom of Bahrain particularly because preschool education is not compulsory in this country. Accordingly, the impact of preschool education on later academic achievement, and the interaction effect of parents' socioeconomic status on achievement are worth investigation.

Although the number of children enrolled in preschool education is increasing in the Kingdom of Bahrain, their numbers are still low compared to those enrolled in elementary schools. Based on Bahrain Ministry of Education statistics, there are 1297 teachers in preschool education institutions, all of them are females. They work in 131 preschool education institutions, caring for 34,585 children, 17,664 males, and 16,921 females. The number of students at the elementary level from grade 1 to grade 6 is 113,031 students. According to 2017/2018 statistics, 70,997 students are in public schools and 42,034 students in private schools. According to the same year statistics, approximately 61% of elementary school students were enrolled in preschool education in the Kingdom of Bahrain (Ministry of Education, 2019). Therefore, 39% of cycle 1 students in Bahrain didn't have preschool education.

It is concluded from such statistics that the number of preschool institutions and the number of teachers who work in such institutions do not match their capacity to serve more students. This will create a gap in the country in case preschool education becomes obligatory in the Kingdom of Bahrain. So far, most parents perceive of the preschool as a setting to take care of their children particularly for working mothers. Therefore, the number of specialized preschool teachers currently available is not enough to cover the needs of the society if preschool education is compulsory in Bahrain. Another preschool education issue requires research attention.

In Bahrain's context, the researchers did not find any recent study dealing with the current subject, despite its importance in the Bahraini environment. The studies conducted on preschool level deal with a variety of other aspects. For example, Al-Emran and Al-Junaid (2018) conducted a study focusing on the effectiveness of training program in preschool education. Al Hajeri's (2014) study focused on common behavioral problems among preschool children in the Kingdom of Bahrain. On the other hand, Al-Junaid's (2011) study focused on the relationship between Bahraini preschool children's drawings and their language development and writing skills. The relationship between preschool education and later academic achievement with socio-economic level as a moderator variable is one of the most important aspects that can indirectly measure the quality of preschool education outputs. Consequently, this will be useful in measuring the return on investment with this type of education.

In light of inconsistent research outcome on the relationship between preschool education and achievement in lower elementary grade levels, it is necessary to further investigate this relationship in the context of Bahrain particularly because preschool education is not compulsory in Bahrain. Accordingly, enrolling a child in a preschool depends to a great extent on the parents' income. In this case, the outcome of research on the interactive relationship between parents' socioeconomic status, preschool education and later academic achievement will have implications to education policy makers in Bahrain regarding age at which compulsory education should be provided. Moreover, results of this study will shed light on the dynamics of socioeconomic status in the context of Bahrain and the potential interaction of such dynamics with other factors that contribute to proper development and academic achievement of elementary school students in Bahrain public schools. For all these reasons, the researchers undertook the current study to investigate the relationship between preschool education and later academic achievement as moderated by socioeconomic status in Bahraini government elementary schools.

2. Literature Review

Many researchers have investigated the differences in the academic achievement between students who had attended and those who did not attend preschool. Some of them found that students who attended preschool had better academic achievement than those who did not attend preschool (Singh & Mukherjee, 2018; Hungi & Ngware, 2018; Manfra et al., 2017; Ehibudu, 2017; Aslan & Arnas, 2014; Slaby et al., 2005; Ehibudu & Peter-Kio, 2017; Clark, 2009; Kluczniok et al., 2016; Bursal, 2017; Oniwon, 2015; Aslan & Arnas, 2014; Johnson, 1996). On the other hand, another strand of studies found no significant differences between students who joined preschool and those who did not in terms of academic achievement (Curran, 2019; Slaby et al., 2005). Curran (2019) pointed out that attending preschool is not predictive of science academic achievement of students. Slaby et al. (2005) studied the performance of students from low socioeconomic status and found that students who had attended a preschool got similar results as those who did not.

With a relatively different emphasis, Bursal (2017) and Ansari (2018) found an impact of preschool on students' social skills. In addition, some researches focused on the impact of socioeconomic status on students' academic achievement and some studies found the positive impact of socioeconomic status on academic achievement (Dahie et al., 2016; Geske & Ozola, 2008).

Singh and Choudhary (2015) found that socioeconomic status had a significant positive impact on academic achievement, where students from high and average socioeconomic status got better results than those from low socioeconomic status. On the other hand, many studies found no impact of socioeconomic status on academic achievement (Curran, 2019; McKinney, 2013). Some researchers studied the impact of the level of parents' education on the academic achievement. Geoffroy et al. (2010) found impact of mother's education level on child achievement, where the mother's low education level affected the academic achievement of her children negatively.

From the above discussion, it is clear that there is inconsistent research outcome on the relationship between preschool education, socioeconomic status and academic achievement in lower elementary grade levels. This inconsistency is due to differences in social contexts, samples, or implemented research methods. The current study is based on the findings of Gayden-Hence study, which also recommended repeating the study on a variety of samples from different social contexts (Gayden-Hence, 2016).

Gayden-Hence (2016) points out that the relationship between preschool education and elementary school programs came to light with reform movements in the education system in the late 20th century.

Broadly, many studies focused on preschool education from different dimensions. Curran's (2019) study focused on estimating the relationship between preschool attendance and preschool science achievement. Singh and Mukherjee (2018) focused on the effect of preschool education on cognitive achievement. Hungi and Ngware

(2018) studied the effects of preschool participation on mathematics achievement at grade six students. Bursal (2017) examined the impact of gender and preschool on academic achievement at grade four to eight in the elementary and intermediate school.

In addition to that, the researchers didn't find any Bahraini study on the impact of preschool and the socioeconomic status on the academic achievement of elementary school students in the Kingdom of Bahrain. Besides, no single study measures the effect of both preschool education and socioeconomic on academic achievement of government elementary school students.

3. Purpose of the Study

The main purpose of the current study was to investigate the relationship between socioeconomic status and preschool education on the academic achievement of students in Bahraini government elementary schools. The study addressed the following questions:

- 1) What is the level of academic achievement of Bahraini elementary school students who come from different socioeconomic levels?
- 2) Is there any significant interaction between preschool education and socioeconomic status on academic achievement of elementary school students?

4. Methodology

4.1 Method

A quantitative research design was used to assess the interaction between socioeconomic status and preschool education on academic achievement in Bahraini government elementary schools.

4.2 Ethics Statement

Researchers obtained written, informed consent from the Ministry of Education. It is assumed that the information will be used for scientific research purposes. The Ministry has provided the researchers with the required information without names, or any information through which to identify the students who are represented in the study.

4.3 Sample

A stratified random sample of 402 male and female students in grades 1, 2 and 3 was randomly selected from an initial list of 1000 students provided by the Ministry of Education. Information provided by the Ministry included students' gender, socioeconomic status, and cumulative grade point average (GPA) for each of grades 1, 2 & 3.

4.4 Variables

The variables considered in the study are enrolment in preschool, parents' socioeconomic status, and students' academic achievement in grades 1, 2, and 3. The operational definition of each variable is presented in Table 1.

Table 1. Definition of variables

Variable	Operational Definition
Preschool Education	Yes= had preschool education No= had no preschool education
Socioeconomic Status	High= represented by holders of degrees above Bachelor degree, Post graduate, i.e. MA and PhD, with white collar occupations, e.g. Medicine, Engineering, Law, with an income according to the classification of the Ministry of Labor in the country for highest level income. Average= represented by University degree, BA/BS, all types of office and teaching/training occupations and the classification of the ministry of labor for medium income. Low = represented by high school degree, blue collar occupations.
Academic Achievement	Cumulative grade point average in each of grade 1, 2, and 3 for each student.

The independent variables were socioeconomic status & preschool education. The dependent variable was students' academic achievement in elementary school, grades 1, 2, and 3.

The following is a breakdown of the sample by variable: 66.7% out of 267 students had attended preschool education, while 33.3% (134 students) did not join any preschool. 6.2% (54 students) came from high socioeconomic status, 78.1% (314 students) from average socioeconomic status, and 15.7% (63 students) of low

socioeconomic status.

Means and standard deviations of academic achievement scores were obtained by enrolment in preschool & socioeconomic status. These are presented in Tables 2 and 3. A Univariate analysis was conducted to study the interaction between enrolment in preschool and socioeconomic status on academic achievement. Results of this analysis are presented in Table 3.

5. Findings

Table 2. Descriptive statistics of academic achievement scores by enrolment in preschool

	Yes= (268)		No= (134)	
	Mean	SD	Mean	SD
Academic Achievement	90.18	10.40	81.49	14.16

Table 2 reveals that the academic achievement of those who had preschool education is higher than those who had no preschool education. It means that those who had a preschool education are better in academic achievement.

Table 3. Descriptive statistics of academic achievement scores by socioeconomic status level

	High= (25)		Average= (314)		Low= (63)	
	Mean	SD	Mean	SD	Mean	SD
Academic Achievement	89.50	10.82	87.13	12.40	87.16	13.47

Table 3 reveals no difference in academic achievement scores among students from a high, average, or low socioeconomic status. It means that those who had a high, or average, or low socioeconomic status were similar in academic achievement.

Table 4. Univariate test of interaction between preschool education and socioeconomic status on academic achievement

Corrected Model	7115.312 ^a	5	1423.062	10.204	.000
Intercept	783499.766	1	783499.766	5617.801	.000
Preschool Education	1803.969	1	1803.969	12.935	.000
Socioeconomic	203.175	2	101.588	.728	.483
Preschool Education * socioeconomic	319.022	2	159.511	1.144	.320
Error	55229.070	396	139.467		
Total	3125249.227	402			
Corrected Total	62344.382	401			

a. R Squared = .114 (Adjusted R Squared = .103).

Table 4 shows that there is no significant interaction between the variable preschool education and socioeconomic status on academic achievement of elementary school students in Cycle 1. The “F” values of academic achievement 1.144, whose significance value of 0.320 is higher than alpha= 0.05.

6. Discussion

The gap in students’ academic achievement cannot be eliminated. Many factors contribute to increasing or decreasing this gap (Slaby et al., 2005). Tucker-Drob (2012) concluded that preschool education could help to reduce differences in students’ academic achievement due to reasons associated with various moderating factors such as the level of socioeconomic status.

Results of the current study concur with results obtained by Oniwon (2015), and Bursal (2017) specifically that students who attended a preschool had better academic achievement than those who did not. Besides improving later academic achievement, attending preschool enhances students’ social, emotional, behavioral and cognitive development (Hosokawa & Katsura, 2018). In this regard, Oniwon (2015) suggested that the government needs to support children’s access to preschool education. In a similar vein, Ehibudu and Peter-Kio (2017)

recommended that preschool attendance should be a prerequisite for admission to elementary school.

Moreover, results of this study showed that there is no impact of socioeconomic status on the students' academic achievement. The findings of this study agreed with the research outcome of Curran, 2019 and McKinney, 2013, that found no impact of socioeconomic status on students' academic achievement.

However, the finding of this study disagree with the findings of Dahie et al. (2016), it is important to note that the current study sample students from grade one to the three, whereas in the other study the sample were secondary school students. The study tool was the information that the researchers obtained from the Ministry of Education, while another study was a questionnaire. Also, the current study disagrees with Geske and Ozola (2008), that the differences may sometimes be invisible due to environmental factors, such as school dress code, rules and regulations. These differences are not noticeable in public schools, where the dress should be a uniform and the students from a low socio-economic status work very hard and try their best for high achievement so that education will later help upgrade their socioeconomic status. This is of course, a parental influence. Parents in the Bahraini society value education and motivate their children to study and work hard to earn high degrees. Therefore, it may be inferred that in Bahrain, parenting style, parenting skills, and marital relationships may compensate for any achievement gap caused by socioeconomic status differences. This concurs with the conceptualization of socioeconomic status adopted by Hosokawa and Katsura (2018) who called for the expansion of the construct "socioeconomic status" to include dimensions other than parents' income, occupation, and level of education. Hosokawa and Katsura (2018) explains that practices within the family, family functioning, and family members' relationships are better predictors of children's cognitive, social, emotional development and later academic achievement. This might count for the nonsignificant interaction effect of socioeconomic status on academic achievement in the context of Bahrain public elementary schools.

The results showed that there is a positive impact of preschool education on students' academic achievement; however, there is no impact found of socioeconomic status on students' academic achievement in elementary schools. Based on the results and discussions, the following recommendations are made: (1) Parents should be required to enroll their children in preschool education. (2) The policymakers should encourage the private sector to invest in preschool education. (3) Preschool education should be supported by the government to increase the enrolment. (4) To conduct a study on a more significant sample to focus on the impact of the socio-economic level on academic achievement and at different school levels. (5) A study should also be conducted on the impact of preschool education on the academic achievement of students in higher grades like 4 to 6 (long term effect etc.), as well. (6) Conduct research on the interaction effect of preschool education and an expanded conceptualization of socioeconomic status to include parenting skills, marital and family relationships on later academic achievement.

The findings of the current study have some important implications to increase the effectiveness of the preschool education. First, preschool education institutions should further expand student's experience. Second, the preschool education institutions should restructure their curriculum based on the new global changes.

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