



Research Article

Parent Involvement and Student Achievement in the Gulf Cooperation Council Countries: Evidence from PIRLS 2016 Data

مشاركة الأهل وتحصيل الطلبة في دول مجلس التعاون الخليجي: أدلة من بيانات بيرلز ٢٠١٦

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Abstract

Numerous studies have shown that parental involvement has a significant influence on student achievement. However, most of these studies have been conducted in Western Europe and North America. In the Gulf Cooperation Council (GCC) region, we find that quantitative research that examines parents' behavior is limited. In order to design efficient parent engagement programs and family policies, we need to understand how parents interact with their children's education in this area. Data from PIRLS is the only open-access data that allows us to study parent involvement by using a large sample that may reveal parents' behavior patterns. This work investigates elements of parental involvement addressed in the parent questionnaire of PIRLS and studies its relationship to student reading achievement. The results showed a positive influence of parents' practice of educational activities and expectations of their children's educational achievement, and a negative association between student reading achievement and parents' help with homework. Implications are discussed from the perspective of the social context in the GCC.

الملخص

أظهرت دراسات عديدة أن مشاركة الأهل لها أثر ذو دلالة إحصائية على تحصيل الطلبة. بالرغم من ذلك، معظم هذه الدراسات أجريت في دول غرب أوروبا أو في شمال أمريكا. في دول مجلس التعاون الخليجي، نجد أن البحث الكمي الذي يختبر سلوكيات الأهل محدود. ولكي يتم تصميم برامج مشاركة الوالدين والسياسات المتعلقة بالعائلة، فنحن بحاجة إلى فهم كيف يتفاعل الأهل مع تعليم أبنائهم في هذه المنطقة. البيانات المستخلصة من بيرلز هي المصدر الوحيد المفتوح والذي يمكن أن يسمح للباحثين بدراسة مشاركة الأهل عن طريق استخدام عينة ذات حجم واسع والتي يمكن أن تظهر لنا نمط سلوكياتهم. الدراسة الحالية تختبر بعض عناصر مشاركة الأهل والتي تم التطرق إليها في استبيان الوالدين في اختبار بيرلز. كذلك تبحث الدراسة علاقة هذه العناصر بتحصيل القراءة. أظهرت النتائج علاقة إيجابية لأثر ممارسة الأهل للأنشطة التعليمية توقعاتهم لمستوى التعليمي لأبنائهم وأظهرت كذلك علاقة سلبية بين تحصيل القراءة ومساعدة الأهل لأبنائهم في أداء الواجبات. ختاماً، تم مناقشة الاستنتاجات في ظل السياق الاجتماعي لدول مجلس التعاون الخليجي.

Keywords: Parent involvement; PIRLS; Large-scale Educational Assessment; GCC

الكلمات المفتاحية: مشاركة الأهل، بيرلز، اختبارات التعليم ذات النطاق الواسع، دول مجلس التعاون الخليجي

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1. Introduction

Home and school are separate institutions that both share and differ in their goals. Although the role of educating children has been delegated to schools, research shows that in the latter half of the twentieth century, parents increased their participation in activities that stimulate their children's cognitive development, such as teaching alphabet letters and numbers and reading books aloud (Schaub, 2010). This trend indicates that the social construction of the role of a parent has shifted to include the tasks of an educator in addition to the tasks of child-rearing .

Numerous studies have acknowledged the positive influence of parent involvement on educational achievement. Stevenson & Baker (1987) analyzed parental involvement in school activities to be associated with higher student achievement. Additionally, Muller (1993) found that parents' educational expectations, discussions about school experiences and high school programs, and checking homework are associated with their children's academic performance. Ho & Willms (1996) demonstrated that different categories of parent involvement are associated with higher student achievement. In particular, practices categorized as home discussions about school activities, home supervision (limiting TV time, limiting going out, and monitoring homework), and school participation all influence student performance. Desimone (1999) reported that even when race and income level are controlled for in a study, parents' discussions with children about school is always associated with higher performance. However, other variables, such as discussions about post-high school plans and participation in Parent-Teacher Organizations (PTOs), vary by race. Each of these studies demonstrated how parent involvement is positively associated with educational outcomes.

The major theories regarding parental involvement in education arose from studies that took place in the United States. By using representative data, such as those from the National Education Longitudinal Study, these studies provided an abundance of information about how constructs representing parental involvement influence student performance. However, the application of these theories is limited in international studies. For this reason, the current study investigates key practices of parent involvement in the region of Gulf Cooperation Council countries.

Driven by the key inquiry of the influence of parent involvement on achievement in the Gulf Council Countries (GCC), the paper interrogates if similar effects exist as those established through previous findings. The paper's analysis makes key contributions to the literature, as previous findings cannot be generalizable to the GCC, given the different cultures and social structures across the region.

2. Theoretical Background

Parent-school partnership has been investigated thoroughly as a multidimensional phenomenon (Epstein & Dauber, 1991; Epstein & VanVoorhis, 2001; Sheldon & Epstein, 2005). The major value of Epstein's theory lies in the categorization of parental involvement activities. Epstein categorized several forms of parental intervention in children's

education, namely: parenting, communicating with the school, volunteering in child-related activities, supervising children's at-home learning, educational decision-making (for example, by participating in PTOs), and collaborating with the wider community, for example, by involvement with non-governmental organizations (NGOs). This categorization helped researchers look at how each kind of activity impacted student performance differently.

Lareau (1989, 2011) further investigated the relationship between parents and their children's education through a detailed ethnographic investigation. This investigation deconstructed the differences in how middle-class parents versus working-class parents approach their children's cognitive development. Lareau found that, in middle-class families, parents demonstrated sustained efforts to stimulate their children cognitively and nourish their growth which she refers to as "concerted cultivation" (2011, p. 20). Parents in working-class families allowed their children's growth to unfold spontaneously, not interfering heavily with their children's education and delegating to the school. This practice is termed the "accomplishment of natural growth" (2011, p. 20). Lareau's analysis detailed how these two approaches are influenced by the availability or lack of resources in each group.

The findings of Hoover-Dempsey & Sandler (1995) relate to those of Lareau and are described in their model. The model explains the motives that drive parents to get involved in their children's education and the mechanism through which this involvement influences educational outcomes. Their model aimed to answer the questions, "why parents choose to become involved in their children's education, what forms their involvement will take, and why their involvement influences their children's educational outcome" (p. 329). The advantage of their model lies in its conception of parent involvement as a "process" rather than a set of random activities. Moreover, it provided a holistic perspective on how the parent, child, school, and culture all contribute to this process.

Cultural capital theory is another area of research that discusses how parents might influence their children's education. It is distinct from theories of parent involvement in that it explains how parents transmit socioeconomic status to their children. The value in this theory is that it highlights how socioeconomic status is reproduced through the medium of culture and education. It explains how parents can pass on cultural codes, tastes, and preferences (such as valuing educational attainment) that translate into high academic achievement for their children. These cultural codes may then help them navigate their way to excellence in the education system. Several studies analyzed parental practices from this perspective, highlighting the academic privilege that children may acquire as a result of being born to educated, middle-class parents (Lareau, 2011). Especially in cross-national, comparative studies, parental interaction with education is regarded as both "embodied cultural capital" that is activated by parents' cultural discussions, and "objectified cultural capital" activated by parents' cultural possessions (Bodovski et al., 2017; Byun, et al., 2012 ; Xu & Hampden-Anderson, 2012).

Parents' role in transmitting cultural capital share some characteristics with parental involvement in education. For example, cultural communication could include discussions about school experiences. However, parental involvement, as discussed by Epstein (2011) and Hoover-Dempsey & Sandler (1995), is more targeted in the forms that parents choose purposefully to influence their children's education. Moreover, Epstein (2011) and Hoover-Dempsey & Sandler (1995)'s theories take into consideration the contexts of school and community that influence parental involvement. These additional contexts are not considered by the theory of cultural capital.

Park (2008) stretched the notion of cultural capital to encompass more of the conceptual territory employed in parental involvement research by looking at the influence of home literacy on student achievement using Progress in International Reading Literacy Study (PIRLS) 2001 data. He evaluated the home literacy environment using several variables, including early home literacy activities, parents' attitudes towards reading, and the number of books in the home. His purpose was to build on the extant literature that claimed that parental reading behaviors and the home literacy environment were more influential on student outcomes than participation in *beaux-arts* activities (De Graaf, et al., 2000). In the present study, the concept of a preparatory literacy environment is extended by considering variables not studied by Park, such as parents' expectations of children's education. Bodovski & Farkas (2008) considered parents' expectations of children's educational attainment as an attitude that supported their "concerted cultivation" practices; parental disposition thus helps children maintain a "habitus" of prioritizing educational attainment. Hill & Tyson (2009, p. 5) also stated that parents who convey the value of education to their children are contributing to their "academic socialization," a process that includes (but is not limited to) discussions of academic and occupational aspirations.

3. Comparing Parent Involvement in the GCC Region

The present study focuses on the Gulf Cooperation Council (GCC) countries: Saudi Arabia, the United Arab Emirates (UAE), Bahrain, Oman, and Qatar (Kuwait was excluded because it did not administer the parent questionnaire). These countries represent a rapidly changing region with an unusual demographic composition that is worth investigating. In the region, the population of citizens constitutes a relatively small percentage of its total population. Most of the population consists of residents staying in the country based on work contracts. Those with jobs that pay well enough to support their families can apply for residential visas for their dependents to live in the GCC countries. Therefore, parents of most of the children residing in the GCC countries have high occupational and educational attainment, providing a unique case study for parental involvement in children's education.

The present study will compare parental involvement practices in GCC countries with other countries that have been included in studies of parental involvement. Based on the research of Xu & Hampden-Thompson (2012), who studied cultural reproduction and cultural mobility in different countries, the present investigation includes parental involvement practices in Finland and Canada. Finland has welfare policies targeted to

minimize SES class distinctions allowing the influence of cultural mobility to be stronger than cultural reproduction in that context. In contrast, Canada is considered a liberal country where class distinctions are more pronounced so that cultural reproduction is stronger than cultural mobility. This work seeks to determine where parents in the GCC countries fall on the continuum between cultural mobility and cultural reproduction.

4. Method

4.1. Dataset

The current study used The Progress in International Reading Literacy Study (PIRLS), a comparative international assessment that measures the reading skills and literacy knowledge of 4th graders (with an average age of 9.5 years old). PIRLS data from 2016, the fourth round of the assessment, was used.

4.2. Sample

The population of each country ranged from 4,896 students in Saudi Arabia to 18,237 students in Canada. Table 1 lists the number of students who participated according to the countries included in this study. In each sample, almost half of the students are female. The mean score of achievements was calculated by using the `pv` command in Stata software, as it calculates the mean in a way that considers the unique condition of plausible values. In terms of achievement, the highest among the Gulf Cooperation Council (GCC) countries is the UAE, and the lowest is Oman. Bahrain, Qatar, and the UAE are at a similar level. Finland and Canada have mean levels that vary substantially from the GCC countries.

The sampling design seemed to recruit children, the majority of whom were born in the country, as opposed to children who are not born in the country. In the samples of Saudi Arabia, Finland, and Canada, this group comprised more than 90 percent. In Bahrain and Oman, this group comprised more than 75% of the sample. However, in the sample of Qatar and the UAE, a relatively large portion, more than 40%, represented students who were *not* born in the country.

4.3. Variables

To investigate the influence of parent involvement on achievement, reading achievement scores have been selected as the dependent variable. Independent variables that represent parent behavior have been selected from PIRLS parent and student questionnaires.

Table 1

Descriptive statistics of the sample

	Bahrain		Oman		Qatar		Saudi Arabia		UAE		Finland		Canada	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
Total number of students	5,480	100	9,234	100	9,077	100	4,741	100	16,471	100	4,896	100	18,237	100
Number of boys	2,779	50.71	4,670	50.57	4,389	48.35	2,376	50.12	8,436	51.22	2,479	50.63	9,136	50.1
Number of girls	2,701	49.29	4,564	49.43	4,688	51.65	2,365	49.88	8,035	48.78	2,417	49.37	9,101	49.9
Number of students born in country	3,986	77	7,214	81	4,599	59	4,152	92	8,544	57	4,373	96	13,583	91
Number of students not born in country	1,158	23	1,666	19	3,151	41	372	8	6,358	43	187	4	1,295	9
Reading achievement score	M	S.E	M	S.E	M	S.E	M	S.E	M	S.E	M	S.E	M	S.E
	445.1	0.92	418.48	0.88	442.25	0.81	430.3	1.11	450.1	3.29	566.01	0.56	543.1	0.41
	M	S.E	M	S.E	M	S.E	M	S.E	M	S.E	M	S.E	M	S.E
Reading achievement score	445.1	0.92	418.48	0.88	442.25	0.81	430.3	1.11	450.1	3.29	566.01	0.56	543.1	0.41

4.4. Early literacy activities

The early literacy activities variable assessed the educational practices that parents demonstrate in their interaction with their children before their enrollment in primary education. These practices include reading stories and playing with educational toys. PIRLS's interest in these questions may be to capture the effect of early exposure to literature. Park (2008) also focused on these variables as a factor influencing the literacy environment at home. I use these items to determine the parent's role in that exposure. In the current study, these variables from PIRLS were selected because they gauge the educational role through which parents could engage with their children such as reading stories, playing educational games and providing educational materials for the activities.

4.5. Parental educational expectations

This question in the home questionnaire asks the parent about the level of education they expect their child to attain. Hill & Tyson's (2009) research showed that parents communicate such expectations within their "academic socialization" with their children, which they found to be the most influential type of parent involvement in their children's achievement. The meta-analysis of Fan & Chen (2001) which studied the influence of varied forms of parent involvement on student outcome found that parents' educational expectations of their children have a strong association with student achievement.

4.6. Help with homework

Literature has mixed results regarding this variable depending on how the survey was designed, and what the variable measures. The study of Sheldon & Epstein (2005) implied that parents' help with homework undergoes the type of parent involvement "learning at home." Their findings showed that this type of involvement is highly related to positive student achievement. However, Muller (1992) indicated that parents' help with homework is associated negatively with student achievement. For this reason, I include the items related to homework in PIRLS to examine how these items relate to achievement in the selected countries.

This is a composite variable that is derived from three questions in the Home Questionnaire. It asks parents: "How often do you or someone else in your home do the following things: Ask if your child has done his/her homework; help your child with homework; and review your child's homework to make sure it is correct."

4.7. Reading outside of school

Laureau (2011) asserted that parents who practice 'concerted cultivation' style of parenting tend to arrange for their children to do additional educational activities outside of school such as extra-curricular activities. PIRLS does not ask about these types of activities directly in its questionnaires. However, we can look at the amount students

read outside of school time as an indicator of how much time they spend in an education related activity.

4.8. Control variables

Literature has shown that there are additional aspects that can interfere with parents' influence on their children's education such as their own education attainment and occupation (Lareau, 2011; Sirin, 2005), their attitudes towards reading (De Graaf et al., 2010; Park, 2008), their interaction with the school staff and its events (Epstein, 2005; Ho & Willms, 1996) and whether they attended early childhood education (Melhuish, et al., 2012). Therefore, the current study controlled for these aspects as they were measured in the parent questionnaire. Additionally, it was essential to control for demographic variables including gender, whether the student was born in the country in which they took the PIRLS assessment, and home possessions as a wealth indicator.

All the independent and control variables have been standardized to have a mean of 0 and a standard deviation of 1.

4.9. Missing data

Missing data is a characteristic of almost every survey study, and all methods of dealing with it have advantages and disadvantages (Allison, 2001). Given the complex sampling design of the study, I used the method of "list-wise deletion." This method considers removing an individual case/observation from the analysis if any of the variables related to this person is reported missing. Although convenient, the downside of this method is that it shrinks the sample size and discards usable data. In the case of the current study, this problem is less critical as the sample size is large even after removing the cases with missing data.

4.10. Hypotheses and Analysis procedure

The study ran Ordinary Least Square to test the following hypotheses:

- H1: Parents' early literacy activities have a positive, significant effect on student achievement.
- H2: Parents' expectations of educational attainment have a positive, significant association with student achievement.
- H3: Children's reading time outside of school has a positive, significant association with their educational achievement.
- H4: Parental assistance with homework has a negative, significant association with student achievement.

I used the following model that included the main independent variables and control variables:

$$\begin{aligned}
 Y_{ij} = & \beta_{0ij} + \beta_1(\text{early literacy activities})_{ij} + \beta_2(\text{parents help with homework})_{ij} \\
 & + \beta_3(\text{parents expectation of education attainment})_{ij} \\
 & + \beta_4(\text{reading outside of school})_{ij} + \beta_5(\text{Gender})_{ij} \\
 & + \beta_6(\text{child born in country})_{ij} + \beta_7(\text{parent education})_{ij} \\
 & + \beta_8(\text{Parent occupation})_{ij} + \beta_9(\text{home possessions})_{ij} \\
 & + \beta_{10}(\text{number of preschool years})_{ij} + \beta_{11}(\text{parents like reading})_{ij} \\
 & + \beta_{12}(\text{parents perceptions of school})_{ij} + \epsilon
 \end{aligned}$$

In this model, Y_{ij} is the predicted reading achievement score for the student i in school j . The model was run for each country separately using clustered regression to account for the fact that students are nested within schools. Tests for homoscedasticity, linearity, and normality were conducted and indicated that regression assumptions are met.

5. Results

5.1. Descriptive analysis

Canada had the largest sample size of any country ($N = 18,237$), followed by the UAE ($N = 16,471$). The distribution of gender was even in all countries (almost 50% each male and female). The mean achievement scores of Finland ($M = 566$, $SE = .56$) and Canada ($M = 543$, $SE = .41$) were much higher than the mean score of all the GCC countries. The highest mean score among the GCC countries was in the UAE ($M = 450$, $SE = 3.29$), and the lowest was in Oman ($M = 418$, $SE = .88$). Table 1 shows the average score in each country, which was calculated using all plausible values of reading achievement.

In each of the countries sampled, female students have higher scores of reading achievement than male students. The gap between the two groups varies among countries with Saudi Arabia having the largest gap (68 points difference in achievement). The UAE has the smallest gap among GCC countries (25 points difference), and its gap is similar to the one found in Finland (23 points). Canada has a smaller gap than the UAE and Finland (14 points). Table 1 in Appendix B shows the gap between females' and males' achievement.

All countries sampled had a majority of students who were born in the country (Table 1). However, the distribution varied substantially from a country to another. The sample of Finland, Saudi Arabia, and Canada had the largest percentage of students born in the country (96, 93 and 91, respectively) while Qatar and the UAE had the smallest percentages of students born in the country (59 and 57, respectively).

In general, parents in Qatar, the UAE, and Canada are more highly educated than parents in Finland and the rest of the GCC countries. However, more parents in Finland work in prestigious occupations, according to the International Standard Classification of Occupations 08 (which is used for ranking occupations in PIRLS). The most engagement in early literacy activities is found in Canada. Parents expecting the highest level of

educational attainment are found in the UAE and Qatar. Parents provide the least amount of help with homework in Finland and the most amount of help with homework in Oman. Children in the UAE spend the most time reading outside school (Table 2).

5.2. The influence of the independent variables

The results show that parents engaging in early literacy activities can significantly predict student achievement. Its influence in the model, however, varies from one country to another (Table 3). The influence of parents' engagement in early literacy activities on achievement is the strongest in Bahrain ($\beta = 12.42$, $p < .001$) and the UAE ($\beta = 10.93$, $p < .001$) and is the least strong in Canada ($\beta = 4.17$, $p < .001$).

Parental expectations of their child's educational attainment have a substantial influence on their achievement, where it was found to be significant in all countries and displayed a stronger effect than all other variables. It is the strongest in Bahrain ($\beta = 22.22$, $p < .001$), Oman ($\beta = 21.79$, $p < .001$), the UAE ($\beta = 21.17$, $p < .001$) and Qatar ($\beta = 20.01$, $p < .001$). However, in Canada ($\beta = 12.26$, $p < .001$), Saudi Arabia ($\beta = 10.68$, $p < .001$) and Finland ($\beta = 8.77$, $p < .001$), the association is much weaker.

The variable of time spent in reading outside of school is insignificant in Oman ($\beta = 0.36$, $p = .83$) and Bahrain ($\beta = 1.86$, $p = .22$). It is also insignificant in Qatar and Saudi Arabia. However, it is significant and positive in the UAE ($\beta = 5.29$, $p < .01$), Finland ($\beta = 13.15$, $p < .001$) and Canada ($\beta = 10.69$, $p < .001$). The effect of reading outside of school on reading scores achievement is much stronger in Finland and Canada than the UAE.

The variable, helping with homework, is negatively associated with student achievement in this model, indicating that parents usually practice this type of involvement when the student's achievement is low. The negative association is the strongest in Finland ($\beta = -22.66$, $p < .001$), Qatar ($\beta = -22.85$, $p < .001$) and the UAE ($\beta = -19.29$, $p < .001$) while it is the weakest in Saudi Arabia ($\beta = -10.91$, $p < .001$) and Oman ($\beta = -10.30$, $p < .001$). Although it is negative, this variable is substantially associated with students' achievement compared to the strength of the association between other variables.

5.3. The influence of the control variables

Parental education and occupation were also entered into the model as control variables. Parental education is much more strongly associated with student achievement than parents' occupation. It is most influential in Qatar ($\beta = 20.89$, $p < .001$) followed by the UAE ($\beta = 16.50$, $p < .001$). Interestingly, its influence is very limited in Finland ($\beta = 4.47$, $p < .05$) and insignificant in Saudi Arabia ($\beta = 2.33$, $p = .43$).

Parent occupation varies in its influence on reading achievement from one country to another. It has a large influence in the UAE ($\beta = 9.49$, $p < .001$) and in Qatar ($\beta = 5.87$, $p < .001$). In Bahrain and Saudi Arabia, it is associated with less than 5 points in reading achievement ($\beta = 4.25$, $p < .05$ and $\beta = 4.66$, $p < .05$ respectively) while in Finland, it does not have any influence ($\beta = 2.97$, $p = .09$).

Table 2

Descriptive statistics of the variables.

Variables	Bahrain		Oman		Qatar		Saudi Arabia		UAE		Finland		Canada	
	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD
Parent education	-0.208	(1.01)	-0.524	(1.22)	0.197	(0.96)	-0.435	(1.24)	0.167	(0.98)	0.158	(0.77)	0.186	(0.67)
Parent occupation	-0.255	(1.07)	-0.36	(1.24)	0.095	(0.95)	-0.38	(1.28)	0.136	(0.94)	0.16	(0.75)	0.151	(0.79)
Early literacy activities	-0.042	(0.88)	-0.281	(0.91)	-0.137	(1.01)	-0.278	(0.91)	-0.06	(0.96)	-0.025	(0.82)	0.409	(1.07)
Parents attitudes towards reading	-0.043	(0.93)	-0.124	(0.81)	-0.069	(0.93)	-0.166	(0.93)	-0.069	(0.9)	0.239	(1.21)	0.171	(1.16)
Parents help with homework	0.276	(0.73)	0.367	(0.66)	0.1	(0.79)	0.187	(0.78)	0.093	(0.81)	-0.663	(0.81)	-0.19	(0.86)
Parents perceptions about child's school	-0.095	(1.01)	0.137	(0.92)	0.106	(1.03)	0.213	(0.96)	-0.086	(1.04)	-0.34	(0.88)	0.021	(1)
Expectation of child's educational attainment	-0.027	(1.06)	0.081	(1.01)	0.278	(0.88)	0.033	(0.99)	0.28	(0.84)	-0.625	(1.29)	-0.274	(0.92)
Time spent in reading outside school	0.054	(1.06)	0.047	(1.07)	0.017	(1.04)	-0.02	(1.02)	0.096	(1.03)	-0.11	(0.83)	-0.101	(0.92)
Amount of years attending preschool	0.128	(0.99)	-0.369	(0.95)	-0.037	(0.98)	-0.77	(0.81)	-0.044	(0.91)	0.779	(0.74)	0.231	(1)
Home possessions	-0.285	(0.93)	-0.61	(1.13)	-0.05	(0.98)	-0.304	(1.12)	-0.309	(0.9)	0.482	(0.63)	0.612	(0.67)
Number of children's books	-0.356	(0.82)	-0.553	(0.73)	-0.302	(0.88)	-0.755	(0.63)	-0.174	(0.92)	0.717	(0.78)	0.791	(0.85)

Students who have more home possessions are not advantaged academically in Bahrain ($\beta = 0.14$, $p=.95$), Oman ($\beta = -1.13$, $p=.51$) and Saudi Arabia ($\beta = -1.3$, $p=.56$). Home possessions are substantially associated with higher achievement in Finland ($\beta = 8.84$, $p < .001$) and Canada ($\beta = 9.05$, $p < .001$). The results show that students who have more possessions have lower achievement in the UAE ($\beta = -4.64$, $p < .05$). The negative association could be explained by the situation seen in UAE schools where citizen students are more affluent yet achieve lower levels than their non-citizen peers.

Although the variable examining the number of children's books at home may appear similar to the variable of home possessions, the influence of the number of children's books seems to be much stronger in this model. Its influence is significant in all countries and is high in countries like Qatar ($\beta = 18.30$, $p < .001$) and the UAE ($\beta = 22.37$, $p < .001$).

Another control variable that stands out in this model is parents' perceptions of their child's school which was significant in all the GCC countries but not in Finland ($\beta = 2.17$, $p=.13$) or in Canada ($\beta = 1.41$, $p=.21$). Its influence on reading achievement in the GCC is moderate, where it is associated with 8-11 points of achievement.

6. Discussion

The current study investigated hypotheses concerning parent involvement and student achievement. Parental involvement variables varied in their influence on achievement. In all countries, parents' expectation of a child's educational attainment was significant, and it had the strongest influence. Parents' help with homework was negative in all countries, and it was strongly associated with low reading achievement. The influence of early literacy activities was significant in most countries but with weaker association than the previously mentioned parent involvement variables. The time a child spends in reading outside of school was inconsistent in its significance across countries.

6.1. "Learning at home"

The significant positive association of the variable of early literacy activities emphasizes Epstein's perspective on the type of parental involvement referred to as "learning at home." This involvement includes parents practicing instrumental, curriculum-related activities such as reading books, playing educational games, and discussing subject-related issues. Early literacy activities, in the current study, are associated positively and significantly with student achievement. This finding is aligned with that of Sheldon & Epstein (2005) who found that involvement type "learning at home" is associated with higher math achievement; "learning at home" was the most influential type of parent involvement. Unlike the study of Sheldon & Epstein (2005), the current study did not find early literacy activities to be the most influential factor with regard to achievement. One explanation could be that parental activities measured in the current study took place several years before the time of assessment and therefore might not have a direct influence on achievement. The behaviors which comprised the variable of early literacy activities could function as an indication of how parents see their educational role. However, even with this condition, the positive influence of early literacy activities still

Table 3

The influence of parent involvement variables on reading achievement

	Bahrain	Oman	Qatar	Saudi Arabia	UAE	Finland	Canada
Parent involvement variables							
Early literacy activities	12.42*** (2.68)	9.50*** (2.22)	7.15*** (1.29)	4.19 (2.84)	10.93*** (1.60)	6.09*** (1.72)	4.17*** (1.14)
Help with homework	-14.76*** (2.58)	-10.30*** (2.60)	-22.85*** (1.77)	-10.91** (3.44)	-19.29*** (1.78)	-22.66*** (1.58)	-13.10*** (0.99)
Reading outside school time	1.86 (1.48)	0.36 (1.69)	-0.30 (1.54)	-2.71 (2.26)	5.29* (1.56)	13.15*** (1.19)	10.69*** (1.02)
Expectation of education	22.22*** (2.39)	21.79*** (2.13)	20.01*** (2.57)	10.68** (3.80)	21.17*** (2.15)	8.77*** (0.97)	12.26*** (1.47)
Control variables							
Female	28.76*** (3.78)	32.32*** (3.13)	20.70*** (3.60)	49.88*** (6.10)	18.52*** (4.23)	14.09*** (1.85)	10.83*** (2.23)
Child born in the country	-26.24*** (6.28)	-19.05*** (4.62)	-46.11*** (3.57)	-23.04* (8.91)	-52.42*** (3.35)	22.84*** (6.29)	-6.33 (4.12)
Parent education	15.57*** (2.33)	14.29*** (1.73)	20.89*** (2.09)	2.33 (2.97)	16.50*** (1.94)	4.47* (2.05)	8.35*** (2.16)
Parent occupation	4.25* (2.08)	5.87*** (1.31)	7.13*** (1.80)	4.66* (2.12)	9.49*** (1.51)	2.97 (1.73)	6.26** (1.89)
Home possessions	0.14 (2.43)	-1.13 (1.72)	5.31** (1.68)	-1.30 (2.20)	-3.51 (2.00)	8.84*** (1.80)	9.05*** (1.56)
Parents attitudes towards reading	2.80 (1.83)	5.89** (2.21)	5.21*** (1.40)	3.63 (2.44)	3.69 (1.96)	4.14** (1.20)	2.83** (0.95)
Attended preschool	1.10 (2.04)	5.88* (2.25)	0.86 (1.24)	7.91* (3.24)	2.90 (1.52)	-2.49 (1.65)	1.59 (1.29)
Parents perceptions of schools	10.32*** (2.33)	10.43*** (2.16)	11.27*** (1.94)	8.57** (3.10)	10.77*** (1.13)	2.17 (1.41)	1.41 (1.10)
Children's books at home	11.48*** (2.98)	9.68** (2.96)	18.30*** (2.31)	6.78* (3.00)	22.37*** (1.95)	5.22** (1.69)	8.48*** (1.37)
intercept	471.88*** (6.83)	451.18*** (4.84)	472.64*** (5.26)	458.92*** (8.56)	483.40*** (3.50)	526.62*** (6.51)	536.75*** (3.79)
Percentage of explained variance	29.18%	25.1%	31.94%	15.24%	34.49%	32.29%	18.96%

Note. Standard errors in parantheses.

* $p < 0.05$. ** $p < 0.01$. $p < 0.001$ significant at 0.001.

implies that these practices matter. Further research on parental educational activities at the time of assessment would give a clearer picture of their influence.

6.2. The embodied influence of parental expectation

The results showed that parental expectation was more strongly associated with achievement than early literacy activities, time spent in reading outside the school, and the number of children's books at home. This finding implies that much of the parental influence is less instrumental and more embodied. Bodovski & Farkas (2008) emphasized this implication when they also found that parental expectations of student achievement had a strong influence on achievement. Parental expectations of their child's educational attainment can also be explained by the concept of "habitus" in the theory of cultural capital (Bourdieu, 1986). Such expectations become a trait of the family's identity and lifestyle where parents raise their children to internalize this identity through their interaction with their children's education.

Such interaction between parent expectation of child's educational attainment and his/her achievement brings us back to the theory of "academic socialization" proposed by Hill & Tyson (2009), who found in their meta-analysis that academic socialization is the most influential practice of parent involvement on achievement. Hill & Tyson (2009) defined this term as "communicating parental expectations for education and its value or utility" and assumed that this practice is most influential for adolescents (p. 5). The current study, however, indicates that it is also effective in earlier stages of human development, namely middle childhood, the age targeted by PIRLS.

The findings from this study correspond with other studies that found parental expectations to be highly influential on student achievement. Tan (2017) found this variable to be the strongest in its influence on math performance in other countries, and its positive association is stronger than variables of home educational resources, parent educational level, occupational status, attitudes towards math learning, and expectations of schools. Barone (2006) tested a similar variable, students' occupation aspirations, and found that it is a strong predictor of performance in all the countries included in his investigation.

The influence of parents' expectations for educational attainment is higher in the GCC than in Finland and Canada. This finding could imply that attaining educational credentials is highly emphasized in the GCC countries. Although the higher education system in the GCC region is much younger and potentially less mature than in Finland and Canada, it is possible that the higher education system's outreach to students and parents is much stronger in the GCC. It is also possible that higher education institutions place stronger emphasis on families to encourage their children to pursue post-secondary and tertiary education. Further inquiry could focus on the cultural perspective of higher education credentials in addition to the demand for them in the job market in this region.

6.3. The negative association of homework supervision

An important consideration when discussing the negative association of the variable helping with homework with achievement is that such an association may differ according to the design of survey items. In the current study, as well as in other studies such as Desimone (1999) and Muller (1993), the items focused on the supervisory role of parents in the process of homework completion. In the study of Ho & Willms (1996), the relationship between helping with homework and achievement was insignificant, which implies that this variable is not associated with improved student results. The design of the items used in Desimone (1999), Muller (1993), Ho & Willms (1996) in addition to the current study, captures a type of parent involvement that occurs when a student is struggling with his/her achievement and requires additional support to complete his homework.

The findings in these studies are contrary to the findings of Sheldon & Epstein (2005), who found that parental involvement at home (help with homework was given as an example) was associated positively with achievement. As noted earlier, Sheldon & Epstein (2005) found that learning at home was the most influential type of parent involvement. However, the way they measured parent involvement with homework differs from the previously mentioned studies. Sheldon & Epstein (2005) studied parent involvement in context of an intervention program that guides teachers on how to involve parents. Therefore, parents were not only supervising homework but doing so within a partnership with the teachers through its process. It might be more accurate to describe Sheldon and Epstein's focus as a "partnership" where parents are involved in children's education in an interactive fashion, in which the interests of both teachers and parents are addressed. Parents become more knowledgeable and resourceful in their involvement with their child's education at home, which created more valuable support for his/her achievement.

6.4. Varied influence of reading time

Among the GCC countries, reading outside of school was found to have a positive influence on achievement only in the UAE. This could be related to the availability of quality printed material. Potentially, the market for children's books in the GCC does not provide products that may effectively contribute to children's learning. This problem of limited availability might also be causing this variable to be an insignificant predictor of student achievement in the GCC countries, but not in Canada and Finland.

6.5. The influence of parent education

In the current study, parental education has been found to have a varying effect on achievement across countries. It was the strongest in Qatar and the UAE and had a substantial influence in Bahrain and Oman. The variable had a much weaker but still significant influence in Canada and Finland which leads to questioning whether Western educational systems limit the influence of parent education. The case of Saudi

Arabia requires further investigation because while it runs a similar education system compared to the rest of the GCC, parent education has no influence on Saudi students' achievement.

The variation we see in the influence of parent education across countries is aligned to the findings in other studies. For example, Barone (2006) investigated the influence of cultural capital on student achievement and looked at parent education as a control variable. In his study, he found that the influence of parent education is insignificant in Belgium, Portugal, Norway, Sweden, Russia, and Ireland. Although the influence is significant in France, Finland, Switzerland, Greece, Italy, Iceland, and New Zealand, Barone (2006) found that it was relatively low.

The dataset used in the current study does not provide ways to investigate the reasons behind the varying influence of parent education on achievement. However, a compelling question remains: do educated parents in one country interact differently with their children than parents with the same level of education in another country? It could also be a question of resources available to only educated parents in a particular country. The availability of resources could function as a means through which parental education is transformed into a change in students' outcomes. For example, if more public libraries are available, educated parents will use their knowledge and skills to access the libraries' resources and use it to support their children's education.

6.6. The advantaged non-local

The findings from the current study showing that students who were not born in the country achieve significantly better are consistent with Wiseman et al. (2013)'s findings that also demonstrate that students who do not hold citizenship status in the GCC countries have higher math achievement. Interestingly, the results in this study found that parents of students without GCC citizenship practice more early literacy activities; they have a higher expectation of children's educational attainment and spend less time helping with homework. Further research may explain how the parental education level of this particular population contributes to their practices of parent involvement.

Based on this contrast between the populations of national and expatriate families, further research in the GCC should always account for this difference. Data may show large variation among the students or schools; researchers should consider the contrast between these two populations as a major factor influencing achievement levels.

In some of the GCC countries, UAE and Qatar, expatriate students are not granted free public education which leads to a clustering of national students with citizenship in public schools, and expatriates in private schools. National students whose parents choose to pay for private education may also enroll in private schools. Even in countries that allow expatriate students to enroll in public schools (such as Saudi Arabia, Bahrain, and Oman), those students, yet, tend to cluster in private schools. One of the reasons is that public schools use the Arabic language as a medium of instruction and therefore, students who do not speak the language go to private schools.

This condition provides a reason that requires further research to investigate how public versus private schools operate differently and how school quality and teacher

qualifications vary among schools. The challenge in such an inquiry is even more emphasized when one realizes that national students perform at a lower level in public schools which receive government funding while expatriate students perform better in schools that are privately funded. More focus should be placed on whether public funding is benefiting academically disadvantaged students in public schools. Research should compare public to private schools and investigate if school quality and teacher development in private schools are related to students' achievement. It would be interesting to see if the achievement is related more to parents' socioeconomic status rather than to school quality.

Studying samples of non-citizens by using a dataset like PIRLS should be undertaken with caution because the IEA's sample consisted of majority of students who were born in the country. For example, in Oman, Canada, Saudi Arabia, and Finland, this sample is 81%, 91%, 92%, and 96% respectively. Such a dataset is purposefully biased towards local students. It would yield more accurate results if future research used local datasets (if available) where samples can be drawn based on the actual proportion of the population of national citizens and expatriate non-citizens. Especially in the case of the GCC countries, local datasets may be more accurate in categorizing the students as citizens or expatriates instead of the location of their birth like used in PIRLS.

6.7. Gender gap

The findings of the current study also demonstrate the substantial gap between male and female students. Data from PIRLS have showed that females demonstrate higher achievement. However, according to Ridge (2014), the gap is exaggerated in the GCC countries. Indeed, the gap in the current study reaches a 50-point difference in Saudi Arabia, while the lowest is 18 points in the UAE. In addition, parents do more early literacy practices with females than males in all countries. Parents have a higher expectation of educational attainment for females in Bahrain, Oman, Finland, and Canada while they have less expectation for females in Saudi Arabia. Parents have a similar educational expectation for both genders in Qatar and the UAE. Females also spend more time reading outside of school in all countries except Qatar.

7. Conclusion

The findings show that parental involvement in the GCC countries is not particularly different from the trends that appear in the United States or the countries investigated in major comparative studies. This implies that policies promoting school partnerships with parents and promoting more meaningful investment in their children's education could be as effective in the GCC area as it is effective in other nations. The literature has shown some promising results from programs like Teachers Involve Parents which was implemented by Hoover-Dempsey et al., (2002) and Teachers Involve Parents in Schoolwork implemented by Epstein & Van Voorhis (2010).

The varied influence of parent involvement variables implies that parent-targeted programs designed by schools and districts should respond to the unique features and

demand in their communities. Programs should especially consider the hard to reach parents who might have economic and social barriers to their involvement in their children's education, such as having low educational qualifications or working for long hours. Children of those parents are more likely to have educational needs that must be supplemented at home. This explains why children of parents with low socioeconomic status receive more help with homework. However, school-parent partnerships can be more meaningful and enriching than merely encouraging parents to supervise homework but rather to interact with what their child learn in specific subject areas.

Such a policy implementation process should be informed by research that analyzes the influence of socioeconomic status on parent involvement. The socioeconomic status could have distinct dynamics in different groups of the population in the GCC. As mentioned earlier in the study, this region has a unique demographic composition with a majority of its population being expatriates. The findings from this study showed how parent involvement varied substantially between parents whose children were born in the country and those who were not. An investigation of this phenomenon should consider the fact that socioeconomic status also varies between these two groups of the population. For example, citizens receive welfare support, which raises their income. However, this higher income does not necessarily mean that they received a better education than their expatriate counterparts. Such a characteristic would have different implications for parent-school partnership programs that are designed to address each population group based on its individual features.

Biography

Shefa AlHashmi completed her Ph.D at Pennsylvania State University majoring in Educational Leadership. Her research focuses on using Educational Large-Scale Assessments to study the relationship between family factors and student performance. More specifically, she looks at the factors that are related to family background, resources, and parents interaction with their children's education. She certifies that the current study had no financial interest or involvement with any organization. The study in this article was part of the author's dissertation that she completed as a partial fulfillment of the requirements of the Ph.D. degree.

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