



The effect of family literacy programs on the development of children's early literacy in kindergarten settings



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ABSTRACT

The present study was conducted to investigate the effect of family literacy programs on developing kindergarten children's early literacy skills in Qatar. Three hundred and twenty kindergarten children (166 girls and 154 boys; mean age = 4.721 years) participated in the study. The sample was divided into two groups: the experimental group with (162) children whose parents participated in family literacy programs and the control group with (158) children whose parents did not participate. For the purpose of the study, the researchers designed an early literacy test that included five literacy skills: concepts of print, phonological awareness, letter knowledge, vocabulary, and emergent writing. The children in each group were pre-tested and post-tested. The findings indicated that there were statistically significant differences between the two groups as children in the experimental group had higher scores in the early literacy test compared to the control group. Among the sample studied, boys' and girls' early literacy scores were not markedly differentiated. Furthermore, the findings indicated that there was no difference due to the interaction between group and gender. In light of these results, recommendations for establishing family literacy programs in Qatari kindergarten settings are addressed.

1. Introduction

Family literacy programs (FLPs) are a highly effective way of promoting children's literacy skills (Fatonah, 2019; Swain & Cara, 2019a), as they have been correlated to significant effects on children's literacy development in kindergarten and school settings (Crosby, Rasinski, Padak, & Yildirim, 2014; Jeynes, 2012; Saracho, 2017). For instance, research studies have indicated that family involvement improves children's reading and writing skills (Sonnenschein & Munsterman, 2002), enhances their phonological awareness and print awareness skills (Ihmeideh, 2014), improves their concepts of print, story comprehension, and storytelling (Jordan, Snow, & Porche, 2000), increases their vocabulary and helps develop their writing skills (Saint-Laurent & Giasson, 2005). In general, children's literacy learning is enhanced when the family is involved in literacy-related practices (e.g. reading to children, writing with children, providing children with literacy materials, etc.) (Buhs, Welch, Burt, & Knoche, 2011; Fatonah, 2019; Nutbrown, Hannon, & Morgan, 2005). Moreover, FLPs help families increase their sense of self-affirmation and confidence in their role in promoting their children's literacy development (Swain & Cara, 2019b).

Due to the known importance of family in promoting children's literacy development and learning, schools have established FLPs that

empower families and help them support their children's literacy skills (Swain & Cara, 2019a). The critical aim of FLPs is to build strong relationships between home and school and help family members support their children in literacy activities. Thus, this present study aims at examining the effect of FLPs on children's early literacy development in Qatari kindergarten settings.

In 2012, the First Annual Literacy Conference was held at Qatar University in collaboration with the Middle East Partnership Initiative (MEPI), the International Reading Association (IRA), and Bloomsbury Qatar Publishing. This conference revealed that Qatari students have a low level of literacy and continued to score low on Math and Science because of their poor literacy skills. This conference drew attention to fact that inappropriate teaching methods are still used in teaching literacy in schools (Middle East Partnership Initiative, 2012). The conference recommended developing national plans and strategies to improve students' literacy learning in all stages and to motivate students to read in both home and school settings as well as establish further programs to improve children's reading and writing skills from an early age (Middle East Partnership Initiative, 2012). Additionally, the results of the Progress in International Reading Literacy Study (PIRLS) (from 2006 and 2011) indicated that Qatari children scored low in reading literacy tests as their literacy level was below average (The Progress in

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International Reading Literacy Study (PIRLS), 2006).

Although in recent years Qatar has witnessed a growing interest in children's learning and development and has started establishing programs and projects aimed at improving reading and literacy among younger school-age children (e.g. Qatar University's Reading Together for Qatar Project, Bloomsbury Qatar Foundation Publishing's Literacy Motivations Projects, Childhood Cultural Center's reading and writing activities), parents were not included in most of these projects or activities, and FLPs, in part, were absent in Qatari educational context. The combination of literacy experiences and increasing the involvement of family members in children's schooling are both strong factors to be considered in promoting children's early literacy learning (Jeynes, 2012). Studies investigating the Qatari parental involvement in children's learning have demonstrated that parents are not involved in their children's learning due to lack of interest or time (Romanowski, Cherif, Al Ammari, & Al Attiyah, 2013). Therefore, there is a need for systematic programs to involve families in their children's literacy learning. This is an experimental and exploratory study designed to examine the effect of FLPs on young children's literacy learning in Qatari kindergarten settings. This study is timely and important because it is in line with the education pillar of Qatar Vision 2030, which places great emphasis on developing students' literacy learning at all levels as well as expanding parental involvement in all educational stages in Qatar (The Qatar General Secretariat for Development Planning, 2011). Thus, the importance of improving parental participation in K-12 education and developing students' literacy learning are recognized as important goals in addressing quality education in Qatar.

2. Family involvement in early literacy

Literacy learning begins long before young children start school (Hannon, Morgan, & Nutbrown, 2006; Jarrett, Hamilton, & Coba-Rodriguez, 2017). Early literacy skills are the foundational skills and knowledge that young children need in order to develop the ability to read and write (Whitehurst & Lonigan, 1998). The literature on early literacy skills has emphasized five components strongly linked to kindergarten children's early literacy skills: the concept of print, phonological awareness, letter knowledge, vocabulary, and emergent writing (Lonigan, Schatschneider, & Westburg, 2008; Spira & Fischel, 2005).

Over the last 30 years, the role of family members in developing their young children's literacy abilities has been well-recognized (Hannon, 1998; Timmons & Pelletier, 2014). Indeed involving parents in early education of their children is beneficial for all youngsters in all areas of education (Takin, 2011). A host of studies indicates that families have a significant effect on the child's success or failure in literacy learning (Nord, Lennon, Liu, & Chandler, 1999; Teale, 1986). Research investigating the role of the family in children's literacy learning is not a recent phenomenon in the educational literature (Haussler & Goodman, 1984). Since the 1950s, early literacy researchers have examined the efficacy of parent-child reading concerning reading skills, emergent literacy skills, and language growth (Bus, Van IJzendoorn, & Pellegrini, 1995). The results of these studies definitively demonstrate positive relationships between home literacy experiences and children's literacy learning. Thus, based on the results of over 60 years of research, "family literacy" has become the lens that early literacy researchers use to describe home literacy experiences and the role of parents and family in supporting children's literacy learning (Morrow, 2011).

The concept of "Family Literacy" has emerged as a result of its impact on children's literacy learning. It refers to beliefs and practices related to reading and writing activities that occur within the child's daily home environment (Sowers, 2000). It includes a wide range of literacy practices and relationships between children and parents, or more broadly, children and adults within families (Gadsden, 2017). Such activities could include, but are not limited to, drawing or writing to share ideas, composing notes or letters to communicate messages,

keeping records, making lists, following written directions, or sharing stories and ideas through conversation, reading and writing (Morrow, 2011).

3. Family literacy programs

A large body of existing studies has shown the important role that the FLPs play in developing children's literacy skills (Christie, Enz, & Vukelich, 2010; Hannon, 1998; Jeynes, 2012; Morgan, Nutbrown, & Hannon, 2009; Morrow, 2011; Nutbrown, Hannon, & Morgan, 2005). After reviewing many studies regarding family literacy programs, Anderson, Anderson, and Sadiq (2017) concluded that FLPs had a positive impact on children's literacy development because these FLPs were viewed as effective in increasing children's early literacy knowledge in the dominant or mainstream language and in promoting home language maintenance. Researchers revealed that research on FLPs has been extremely beneficial from two aspects: 1) literacy activities as practices at home could be successful in school settings, and 2) parents play a crucial role in supporting the development of children's literacy (Morrow, 2011). In order to establish FLPs, schools need to build effective relations with families and to develop comprehensive and individualized ways to help families improve their children's literacy skills (Delgado-Gaitan, 1993).

Despite all the interest and programs developed to involve families in school-based FLPs, we have to face the fact that not all families are actively involved in such programs (Ihmeideh & Oliemat, 2015; Takin, 2019). A sizable body of literature concerned with FLPs in early years found that when schools offer FLPs there is often low parent turnout and participation (Moorman, 2002). Moreover, poverty and illiteracy have been found to influence family participation (Christie et al., 2010). Furthermore, not all home involvement approaches meet with great success over the long term on very practical grounds (Feiler, 2010; Pomerantz, Moorman, & Litwack, 2007). Some parents may be unwilling to involve their children in family literacy practices in the home, even when asked, as they believe that they lack the requisite knowledge to teach their children how to read and write correctly (Rodriguez-Brown, 2010). Finally, although most if not all families engage in some form of literacy activities at home, they do not all do so in the same way, or with the same resources (Hannon, Weinberger, & Nutbrown, 1991).

Educators have increasingly explored family-school relationships regarding the development of children's literacy learning. For instance, in a longitudinal study performed in the United States, a school-based parental involvement program in early literacy over three years was assessed. It was found that the school-based parental involvement programs were positive as the program was associated with higher levels of children's achievement in foundational literacy competencies (Crosby et al., 2014). In the same context, the effect of FLPs on children's early literacy learning was examined (Steiner, 2014). The sample consisted of two groups: treatment and control. Pre- and post-tests were administered to determine children's growth in early literacy learning. The results indicated that parental and teacher participation led to significant differences in children's scores on the concepts of print assessment compared to their counterparts in the control group (Steiner, 2014). In a study conducted by Swain and Cara (2019a), the effects of school-based FLPs on children's literacy learning were investigated in England. Based on a large-mixed methods approach, the results demonstrated that parental participation in FLPs was transferred into the home setting. In the Arabian context, only one study (Ihmeideh, 2014) examined the impact of a training program for Jordanian kindergarten teachers to help parents improve their children's literacy skills and found the training program was beneficial in developing children's literacy.

There are gender differences in literacy development amongst children in their early life (Below, Skinner, Fearington, & Sorrell, 2010; Lee & Al Otaiba, 2015). Research studies indicated that parents

deal differently with boys and girls, thus reinforcing their literacy and language skills to a different extent (Umek & Peklaj, 2017). Although the impact of gender differences was not steady over different ages or various aspects of language development, researchers investigating gender differences in early literacy development indicated that girls display higher scores (Chatterji, 2006; Lee & Al Otaiba, 2015; McCoach, O’Connell, Reis, & Levitt, 2005). However, some studies indicated that that girls and boys do not differ significantly in early literacy skills (Harper & Pelletier, 2008; Ihmeideh, 2014; Matthews, Ponitz, & Morrison, 2009). According to Barbu et al. (2015), socialization factors could affect gender differences. In Qatar, families have varied expectations about their children’s gender roles and behavior, thus may affect the development of literacy when they get involved with them in the literacy activities being at home. Given the limited research on the differential early literacy achievement between FLPs and gender difference among children in Qatar, this present study extended this research line by examining examine the gender differences among kindergarten children when implementing FLPs.

4. ORIM conceptual framework

Many theoretical models or frameworks of FLPs have emerged in family literacy literature (see Hannon, 1998; Morrow, 2011; Partridge, 2004). One of the most common models in home–school relations, introduced to the literature of FLPs, is known as the ORIM conceptual framework (Opportunities, Recognition, Interaction and Model) (Hannon, 1998; Nutbrown et al., 2005). This model was first introduced by Hannon (1995) and was later elaborated by Nutbrown and Hannon (1997). This framework model aims to describe how parents and/or family members can support children’s early literacy development. The framework includes four strands: 1) providing opportunities for literacy (e.g. providing children with paper and writing materials, exposing children to and helping them interpret the environment print, joining the library, sharing storybooks and other written materials); 2) showing a recognition of the children’s literacy progress (e.g. displaying some writing, understanding logos, discussing with the child what they have achieved); 3) sharing times of interaction with the children during literacy activities (e.g. reading a book together, turning the page of a book, playing an alphabet puzzle); and 4) providing a model of literacy users (e.g. reading a recipe, a newspaper, a magazine, or books, writing letters, completing a form, writing a note) (Morgan et al., 2009).

The ORIM conceptual model is a useful framework to help children develop self-confidence and achieve success in literacy skills. In the current study, the researchers have adopted this conceptual framework in designing and implementing FLPs.

The general theme arising from the FLPs and/or family literacy strategies studies suggest that family literacy needs to be transferred into practice (Christie et al., 2010; Hannon, 1995; Jeynes, 2012). In other words, although early years educators have accepted the idea of getting family members involved in children’s literacy learning and are interested in collaboration, the question raised is how to develop productive mutual partnerships between the family and schools regarding children’s literacy development. As demonstrated, teachers of young children need to work closely with families to support their involvement in developing children’s literacy skills (Morgan et al., 2009). Although establishing FLPs in most schools in the western countries is common, establishing such programs in most Arab countries in general, and in Qatar, in particular, is still lacking. Thus, this study was conducted to investigate the effectiveness of FLPs on children’s literacy learning, and whether gender differences affect early literacy progress. This line of research would offer educators a deeper understanding of the usefulness of these programs in the Qatari educational context.

5. Research questions

This study aims to examine the effect of FLPs on children’s literacy

learning within Qatari early years education. More specifically, the following research questions guided the current study:

- Is there a significant difference between the experimental group and the control group due to the implementation of FLPs on children’s mean scores in early literacy test?
- Is there a significant difference in children’s early literacy test due to gender?
- Is there a significant difference between children’s early literacy test due to the interaction between group and gender?

6. Significance of the study

FLPs are important for their potential in helping families develop their children’s literacy learning. Parents, as their children’s first (and most important) teachers, should not be excluded in the process of literacy development and, indeed, their involvement is significant. This study is also vital because the Qatar National Development Strategy emphasizes the importance of improving and fostering students’ language and literacy skills and expanding parental involvement in schools (The Qatar General Secretariat for Development Planning, 2011). Moreover, the importance of improving parental participation in K-12 education and developing students’ literacy learning is recognized as a significant goal in addressing quality education in Qatar.

This study is also valuable in that it will provide research-based evidence regarding the influence of FLPs in supporting children’s literacy learning. Moreover, it will examine the possibility of gender differences on children’s early development during FLPs that can fill the gap in terms of gender difference. Given the scarcity of experimental and comprehensive studies on FLPs in the local level in Qatar, the current research, being the first of its kind, will try to experimentally investigate the effectiveness of FLPs on children’s literacy learning within Qatari early years education.

7. Method

7.1. Sample

Initially, four kindergarten settings were purposely chosen from the Ministry of Education (MoE) schools because they are considered to be an average in terms of the number of children and teachers’ characteristics as well as family income. The researchers randomly assigned two (out of 4) kindergarten settings to the experimental groups, and two to the control group. In each assigned kindergarten, two classrooms were randomly selected. The FLPs were established only in the experimental groups where teachers and parents worked together to facilitate children’s literacy learning, while the teachers in the control study continued their regular contact with parents and literacy instruction without receiving any specific treatment regarding family involvement in literacy learning. Table 1 presents the study participants.

Table 1
Participants’ characteristics per group.

Gender	Group				Total	
	Experimental group (FLPs)		Control group (Non-FLPs)		N	%
	N	%	N	%		
Boys	87	53.7	67	42.4	154	48.1
Girls	75	46.3	91	57.6	166	51.9
Total	162	100	158	100	320	100

7.2. Family literacy programs (FLPs)

The FLPs in this study were designed based on the ORIM conceptual framework (Hannon, 1995; Nutbrown & Hannon, 1997), previously mentioned, which conceptualizes families as supporting their children's literacy learning through providing *Opportunities* for learning, showing *Recognition* of children's activities, *Interaction* with children in terms of literacy activities and providing a *Model* of a literacy user. The aims of the FLPs were to 1) provide a collaborative effort between family and kindergarten settings; 2) develop children's literacy abilities; 3) motivate children to participate voluntarily in literacy-related activities for pleasure and information; and 4) approach literacy as a social activity, by engaging in literacy with family members. The FLPs were implemented in each assigned kindergarten (the experimental group). All parents of children in the experimental group (N = 162) participated in the program with an attendance rate of (88%). Most parents that participated were mothers while there were seven siblings.

Kindergarten teachers were trained and they delivered the FLPs. The programs were activities-based, and included eight workshops/sessions as follows: 1) the importance of family literacy in children's literacy development; 2) creating environmental print; 3) the importance of books in children's literacy development; 4) storybook and storytelling strategies; 5) developing children's oral language; 6) writing in early years; 7) how to provide opportunities and recognition to develop children's literacy; and 8) how to provide interaction and a model of literacy to develop children's literacy. All workshop activities was held in the kindergarten settings after the school day and on weekends, where parents come to all of the sessions.

Each workshop session lasted around one hour. In addition to these workshops/sessions, regular parent-teacher meetings were held in the kindergarten settings (the experimental group). These meetings were focused on issues related to developing children's literacy learning in both home and kindergarten. According to Nutbrown et al. (2005), children showed more progress in literacy when FLPs taught parents explicit methods for teaching literacy. Thus, teachers in this study provided families with explicit methods to enact family literacy practices as mentioned in the ORIM conceptual framework (e.g. providing children with paper and writing materials, handling books, adding their name to a greeting card, writing letters). After having participated in each workshop session, family members get to practice activities that were modeled.

Data were collected from four kindergarten settings: two kindergarten settings for the experimental group, and two for the control group. Consent was sought from the MoE, teachers, and parents of the children to conduct this research. Principals and teachers were informed of the aims of the study and were allowed to discuss the research project. Before including children in this research, the research team met with the parents of the children to inform them of the aims of the study. Furthermore, the researchers asked for verbal consent from the children prior to their participation in the study. The participants were ensured confidentiality and anonymity.

A pilot sample of teachers, parents, and children from the Early Childhood Center at Qatar University was asked to respond to the instrument to determine whether any problems occurred in the administration of the research instruments. Then, children in the experimental and control groups were pre-tested together to assess their early literacy skills prior for the treatment. This procedure was implemented to determine the equivalence of the two groups in their abilities and readiness before the implementation of the FLPs. Tests were given to children individually and each child was assessed by two raters.

Subsequently, the researchers established FLPs in the experimental groups for four months, while kindergarten settings in the control study continued their regular contact with parents and literacy instruction without receiving any specific treatment regarding family involvement in literacy learning. In the experimental group, all kindergarten teachers received a training program aimed at increasing their awareness

of the benefits of the FLPs, identifying ways for building strong partnerships with families, improving their skills in working with parents, and providing them with strategies for facilitating family involvement in their children's literacy learning. Moreover, in the experimental groups, the researchers invited the parents of the children to participate in FLPs in which they would learn how to be involved in their children's literacy learning at home and in the kindergarten. Trained teachers guided parents on the process of involvement. The FLPs were fully implemented by the kindergarten administrators under the direct supervision of the research team. After the implementation of the FLPs in the experimental groups, a post-test was administered, by the teachers of the children, to the two groups of children employing the same procedures used in the implementation of the post-test.

7.3. Early literacy test

An early literacy test was adopted by the researchers after a thorough review of the literature related to early literacy skills in early childhood education (e.g. Ihmeideh, 2014; Clay, 1979; Heroman & Jones, 2010; Morrow, 2011). The purpose of using the early literacy test is to assess the impact of FLPs on children's literacy learning. The early literacy test was used as both a pre-test and a post-test. In the early literacy test, the following five sub-tests were developed: 1) concept of print, 2) phonological awareness, 3) letter knowledge, 4) vocabulary, and 5) emergent writing. In each sub-test, seven questions were designed to measure each skill. The test was written and administered in the Arabic language as the participants were native speakers of Arabic.

To examine the test validity, the early literacy test was sent to ten experts specializing in early childhood education. Changes made by the experts were incorporated into the test. Moreover, the inter-rater reliability of the test was examined by two raters using Cohen's kappa. The alpha score of the test was 0.80 for concepts of print, 0.79 for phonological awareness, 0.86 for letter knowledge, 0.82 for vocabulary and 0.81 for emergent writing. In the five mentioned sub-tests, each correct answer was scored 1, while each incorrect answer was scored 0. The total range of scores for each sub-test was (0–7). Hence, the total scores for all sub-tests ranged from 0 to 35.

7.4. Data analysis

The data that emerged from the children's scores were coded, entered to the Statistical Package for the Social Sciences (SPSS) spreadsheets, and analyzed using the SPSS software package. Data collected from the pre-tests and post-tests were analyzed using A Univariate Analysis of Covariance (ANCOVA).

8. Findings

8.1. Findings pertaining to research question 1

Research question 1 asks about the existence of statistically significant differences ($p < 0.05$) between the mean scores in early literacy testing for children in the experimental group compared to children in the control group. As shown in Table 2, the means and standard deviations of both groups for the early literacy post-test indicates that there were differences between the mean scores on the early literacy post-test in all test domains for both groups and for the gender as children had higher scores in the post-test. A Univariate Analysis of Covariance (ANCOVA) was utilized to examine the significance of the differences between children in the experimental groups (whose parents participated in FLPs) and children in the control groups (whose parents did not participate in FLPs).

As presented in Table 3, the findings of ANCOVA do not show statistically significant differences ($p < 0.05$) in the children's mean scores that could be due to the pre-test. This indicates the equivalence of the children in the experimental and the control groups in their

Table 2
Means and standard deviations in the pre-test and post-test for children's literacy test.

Early literacy Dimensions	Group	Experimental (FLPs) 2				Control (None-FLPs) 1			
		Pre-test		Post-test		Pre-test		Post-test	
		M	SD.	M	SD.	M	SD.	M	SD.
Concepts of print	Boys	3.79	2.23	6.29	1.35	3.85	1.38	4.56	1.55
	Girls	3.44	2.44	6.08	1.64	3.71	1.59	4.62	1.32
	Total	3.62	2.33	6.19	1.49	3.77	1.50	4.60	1.42
Phonological Awareness	Boys	2.48	2.28	5.02	1.73	1.43	1.46	4.43	1.29
	Girls	2.46	2.47	5.48	1.36	2.98	1.41	4.73	2.34
	Total	2.47	2.36	5.23	1.58	2.32	1.62	4.60	1.96
Letter knowledge	Boys	4.87	1.75	6.54	0.832	4.41	1.62	5.76	0.922
	Girls	4.49	1.67	6.58	0.469	5.18	2.20	5.64	1.79
	Total	4.69	1.72	6.60	0.690	4.86	2.00	5.69	1.48
Vocabulary	Boys	4.01	1.83	6.27	1.17	3.80	1.71	5.19	1.58
	Girls	3.74	1.94	6.02	1.41	3.73	2.29	5.24	2.31
	Total	3.82	1.89	6.16	1.29	3.76	2.06	5.22	2.03
Emergent Writing	Boys	3.71	1.57	5.44	1.11	3.26	1.53	4.74	1.46
	Girls	3.36	1.42	5.17	1.54	3.90	1.25	4.86	2.33
	Total	3.54	1.51	5.32	1.33	3.63	1.41	4.81	2.00

M = Mean; S.D = Standard Deviation.

literacy skills before the implementation of FLPs in kindergarten settings. However, it has shown significant differences ($p < 0.05$) in the post-test between the mean scores of children in the experimental groups and those counterparts in the control groups. These differences were noted in all test dimensions. This means that children's scores were significantly improved from pre-test to post-test.

The (F) value of all early literacy domains is statistically significant at ($p < 0.05$). This proves that there is a significant effect of FLPs on children's early literacy skills in favor of the experimental groups, which includes children whose parents participated in FLPs. In other words, children in the kindergarten classrooms that implemented FLPs performed significantly better than the children in the kindergarten

classrooms which did not implement FLPs.

8.2. Findings pertaining to research question 2

Research question 2 asks whether there were statistically significant differences ($p < 0.05$) between the mean scores in early literacy testing that attributed to gender (boys & girls).

Although the children achieved higher scores on the post-test, the analysis of ANCOVA findings, as shown in Table 3, reveal that there are no statistically significant differences ($p < 0.05$) between the mean scores of both boys and girls in the post-test. The (F) value of all dimensions was not statistically significant at ($p < 0.05$). This means

Table 3
Results of ANCOVA for early literacy dimensions in the post-test.

Early literacy Dimensions	Source of variance	Some of square	df	Mean square	f	p	eta ²
Concepts of print	Pre-test	0.370	1	0.370	0.173	0.678	0.001
	Group	198.881	1	198.881	92.794	0.000*	0.228
	Gender	0.555	1	0.555	0.259	0.611	0.001
	Group *Gender	1.564	1	1.564	0.730	0.394	0.002
	Error	675.124	315	2.143			
	Total	881.372	319				
Phonological Awareness	Pre-test	6.968	1	6.968	2.208	0.138	0.007
	Group	32.858	1	32.858	10.415	0.001*	0.032
	Gender	7.881	1	7.881	2.498	0.115	0.008
	Group *Gender	1.404	1	1.404	0.445	0.505	0.001
	Error	993.824	315	3.155			
	Total	1044.200	319				
Letter knowledge	Pre-test	0.082	1	0.082	0.061	0.804	0.000
	Group	64.694	1	64.694	48.202	0.000*	0.133
	Gender	0.011	1	0.011	0.008	0.928	0.000
	Group *Gender	1.328	1	1.328	0.989	0.321	0.003
	Error	422.773	315	1.342			
	Total	490.188	319				
Vocabulary	Pre-test	0.299	1	0.299	0.103	0.748	0.000
	Group	68.878	1	68.878	23.733	0.000*	0.070
	Gender	0.842	1	0.842	0.290	0.591	0.001
	Group *Gender	1.774	1	1.774	0.611	0.435	0.002
	Error	914.186	315	2.902			
	Total	987.597	319	987.597			
Emergent writing	Pre-test	0.876	1	.876	0.301	0.584	0.001
	Group	19.847	1	19.847	6.822	0.009*	0.021
	Gender	0.402	1	0.402	0.138	0.711	0.000
	Group *Gender	3.585	1	3.585	1.232	0.268	0.004
	Error	916.492	315	2.909			
	Total	941.347	319				

* $p < 0.05$.

that the children achieved higher scores on the post-test regardless of gender, which did not affect their achievement.

8.3. Findings pertaining to research question 3

Research question 3 asks about the existence of statistically significant differences ($p < 0.05$) between the mean scores in early literacy testing that attributed to the interaction between group and gender.

ANCOVA findings indicates that there are no statistically significant differences ($p < 0.05$) between the mean scores of the interaction between group and gender. The (F) value of all test dimensions was not statistically significant at ($p < 0.05$). No significant differences attributable to the interaction between group and gender means that the implementation of FLPs is not preferred to use for one gender without the other, but can be used for both boys and girls.

9. Discussion

The present study was conducted to investigate the effect of FLPs on the development of children's early literacy among children in two independent kindergarten settings located in Doha, the capital of Qatar. The pre and post data were collected on early literacy test to measure the effect of FLPs. ANCOVA findings indicated that there are statistically significant differences in the post-test between the experimental group which employed FLPs and the control group which did not employ FLPs. These differences were in favor of the experimental group.

This result reveals that FLPs implemented in kindergarten settings helped promote children's early literacy skills. This may be because the FLPs were well-prepared and implemented and thus achieved their aims effectively. Furthermore, the reason why children in the experimental group performed significantly on all test dimensions is that their parents might be keen to work with schools to develop their children's early literacy. In other words, parents' awareness of early literacy and their role may be increased after being exposed to FLPs. It is notable that before the implementation of FLPs, the parents' participation in kindergarten was very limited and therefore they did not get involved in their literacy children's activities. Another possible explanation is that FLPs include many literacy-related activities that can help children improve their early literacy skills. When comparing this result with the results of prior studies, it can be found that this study is consistent with the findings of many previous studies (e.g. Ihmeideh, 2014; Buhs et al., 2011; Jordan et al., 2000; Nutbrown et al., 2005; Saint-Laurent & Giasson, 2005). For example, this study is consistent with the work of Ihmeideh (2014) who examined the effect of a training program to help parents promote their children's early literacy development in the Jordanian educational context.

The findings of the study also indicated that there are no significant differences attributed to the gender variable. This means that both genders have shown significant improvement in early literacy skills. A possible explanation for this finding is that parents of both boys and girls were interested in participating in their children's early literacy (Ihmeideh, 2014; Harper & Pelletier, 2008; Matthews et al., 2009). The activities practices with both boys and girls were identical. Moreover, parents of children, regardless of their children's gender, were more serious in developing literacy skills for their children. This result is inconsistent with prior studies, which has suggested that females tend to have superior language abilities to males (Chatterji, 2006; Lee & Al Otaiba, 2015; McCoach et al., 2005).

Finally, the findings of ANCOVA for the scores of the post-test indicated there are no statistically significant differences attributed to the interaction between group (experimental vs. control) and gender (boys and girls) in all the study dimensions as well as the overall. This indicates that the FLPs employed in this current study are not appropriate to use for a specific gender, but rather the FLPs can be used for both boys and girls. One can say that the effect of the FLPs implemented in

this current study and the activities used in both home and kindergarten used were beneficial for both boys and girls. This result was supported by Ihmeideh's (2014) study on FLPs in Jordan, which did not find significant differences due to the interaction between group and gender.

10. Conclusion and recommendations

Once involved in their children's literacy learning, parents and/or family members can support, reinforce and complement in the home setting what teachers do in the kindergarten setting (Swain & Cara, 2019b). This study tested the effect of FLPs on promoting children's early literacy skills. Based on the findings discussed above, it can be concluded that FLPs have the potential to develop children's early literacy. Additionally, there were no significant differences between children's mean scores in early literacy attributed to gender on the one hand and the interaction between group and gender on the other hand. In light of the results of the study, we suggest several practical and theoretical recommendations. From a practical angle, the MoE should establish FLPs in its public schools as well as in the private schools. The early years curriculum in Qatar should be revised to include activities that require family involvement in these activities. Furthermore, the MoE should provide teachers with in-service training on effective FLPs. Also, early childhood teacher education programs in universities need to provide courses related to parental involvement in school programs. These courses are important to increase student teachers' awareness of how to establish FLPs in schools.

From a theoretical standpoint, the researchers recommend conducting more experimental studies into the effect of FLPs on different aspects of Qatari children's learning. One limitation of this study is that parent satisfactions with the FLPs was not considered in this study as the study's focus was on the effect of FLPs on children's literacy development. It would be worth exploring parent satisfaction in further research as well as exploring parents' practices of literacy activities based on ORIM model. It would be beneficial to utilize the structure of the FLPs implemented in this study to develop FLPs and examine their impact on children's literacy skills in different countries worldwide. Finally, it would be worthwhile conducting comparative studies to investigate the effectiveness of FLPs in Qatar when compared to different countries around the world.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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Appendix A. Supplementary material

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.childyouth.2020.105462>.

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