International Journal of Applied Linguistics & English Literature
E-ISSN: 2200-3452 & P-ISSN: 2200-3592
www.ijalel.aiac.org.au

# The Impact of Preschool Education on L1 Vocabulary Development and Sequential Bilingualism: The Case of Arab Schoolchildren

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**ARTICLE INFO**

*Article history*
Received: January 29, 2018
Accepted: March 25, 2018
Published: July 01, 2018
Volume: 7 Issue: 4
Advance access: May 2018

Conflicts of interest: None
Funding: None

**ABSTRACT**

Considerable research has investigated the effect of preschool education on subsequent school success and proposed a positive link between the two. Less research, however, has directly investigated the influence of preschool education on children's vocabulary development. This paper reports on a study that examines the impact of preschool education on children's first language (L1) vocabulary development in early childhood settings and the potential impact this has on the successive acquisition of second language (L2) vocabulary in later school years. To conduct the study, data from 200 Arabic-English successive bilingual children were collected. The data are scores on receptive vocabulary knowledge in L1 and L2 of two groups of fourth grade schoolchildren (with and without preschool education). The results show that: (1) preschool education contributes largely to L1 vocabulary development and L2 vocabulary acquisition; (2) there is a strong link between L1 and L2 receptive vocabulary knowledge; and (3) bilingual mental lexicon size is predicted by preschool education. The present study provides further insights on the relation between preschool education and L1 vocabulary growth and the influence of this on sequential bilingualism. These findings will allow informed decisions on the support for preschool education by parents and educational policymakers.

**Key words:** First Language, Second Language, Vocabulary, Bilingualism, Preschool Education

## INTRODUCTION

Preschool education is a broad term used to describe any type of educational programmes that support children in their preschool years, before they are old enough to enter primary school. Preschool education may vary in different ways but generally includes activities and experiences designed to help in the cognitive and social development of pre-schoolers and to promote their linguistic and literacy skills (Justice & Vukelich, 2008). Although a considerable amount of research has focused on the relationship between preschool education and various domains, including academic success, literacy skills, language, and cognitive development among children (e.g., Barnett, 1995; Entwisle & Alexander, 1998; Hart & Risley, 2003; Snow, Burns, & Griffin, 1998), less research has directly examined the relationship between preschool education and first language (L1) vocabulary development and successive second language (L2) vocabulary acquisition. In Saudi Arabia, the context of the current study, only a few studies (e.g., Alqassem, Dashash, & Alzahrani, 2016; Al-Mogbel, 2014) have touched on preschool education. However, those studies have mainly reported the development of the preschool system and proposals for the adoption of other countries programmes but made no attempt to examine the effect of preschool education on children's vocabulary development. Worth mentioning here is that Arab children grow up in families with distinctive vernaculars which raise the problem of diglossia in the Arabic-speaking world. This led some researchers (e.g., Ayari, 1996; Fender, 2008; Ibrahim, 1977) to argue that native Arabic speaking children learn Arabic as an L2 when they enter schools. This issue makes preschool education for Arab children a necessity rather than a choice if they need to perform well when they enter primary school at the age of six. Thus, examining the impact of preschool education on children's vocabulary acquisition among Arab children is believed significant.

Focusing on native Arabic fourth grade children, where L2 is first taught at this grade, this study examined L1 and L2 vocabulary knowledge and the relationship between the two languages among two groups of children using preschool education factor as the predictive variable. In other words, does preschool education factor have a significant effect on children's L1 vocabulary growth and L2 vocabulary acquisition in later school years? Note that in the context of the current study, L1 is Arabic and L2 is English. Also, vocabulary knowledge referred to in the study is the breadth knowledge of vocabulary – the number of words that children know receptively. To the best of the researcher's knowledge, the current study is the first to systematically explore the effect

Published by Australian International Academic Centre PTY.LTD.

http://dx.doi.org/10.7575/aiac.ijalel.v.7n.4p.121

of preschool education on the development of L1 vocabulary and the impact this has on the sequential acquisition of L2 vocabulary among native Arabic children.

## REVIEW OF RELATED LITERATURE

### Preschool Education and Vocabulary Acquisition

Vocabulary acquisition is one of the major achievements, if not the major achievement, of the early years of human development. Vocabulary knowledge acquired at the early childhood can broaden a child's opportunity to communicate with others and convey thoughts and ideas. It also helps to develop the essential skills of attending, listening, and turn-taking (Tayler, 2015). Research has shown that vocabulary size prior to school well predicts a child's ongoing intellectual attainments (e.g., Fenson et al., 1994; Hutardo, Marchman & Fernald, 2008). Studies also suggest that vocabulary knowledge at school entry is a strong predictor of reading comprehension in the second and third grade (Hemphill & Tivnan, 2008). The quality of input, but not the quantity, was also argued to shape the language a child acquires prior to school age. In a study by Cartmill et al. (2013) of 14-58-month-old children, the quantity of the linguistic input introduced by parents was not found to be the main predictive factor of vocabulary development, but the quality of input was the essential factor. The study shows that children who received high-quality learning conditions provided by their parents achieved better vocabulary outcomes, and this impacted a child's vocabulary size in later school years (Cartmill et al., 2013). Although parental language input is seen as a crucial factor in forming a child's vocabulary development, the case of a native Arabic child is problematic. The issue of diglossia, mentioned in the introductory section of the current study and discussed in more detail later, can be an influential factor in the development of Arab children's vocabulary. The diversity of vernaculars Arab children, without preschool education, bring to primary school at the age of six might put them at risk of a slow vocabulary growth, unlike those who attend preschool education prior to compulsory school age. This issue has not yet been examined among native Arabic speaking children, and the current study is hoped to broaden our understanding and awareness of the importance of preschool education on children's vocabulary development.

Nonetheless, research has shown that children who enter school with more limited academic skills than their advantaged peers, experience difficulties at school and they often lag in their cognitive development in later school years (Stipek & Ryan, 1997). Studies suggest that cognitive effects of attending preschool programmes carry over to school competence and overall educational performance (Reynolds, Mann, Miedel, & Smokowski, 1997). From this perspective, the United Nations have considered preschool education as a main factor for fostering school readiness and it was declared to be the first of six educational goals (UNESCO, 2008). In the same vein, Cortázar (2015) argues that early childhood education has a long-term effect on children's academic achievement during school years. Also, neuroscience research shows that early childhood is a crucial stage for brain development (Shonkoff & Philips, 2000) and that positive effect of early childhood education on future development of children is advocated (Barnett, 2008). Most importantly is that vocabulary acquisition in early childhood is considered the introduction to the most effective element of literacy. Hart and Risley (2003) argue that a vocabulary deficit before school age appears to extend across school years making the task difficult for children with inadequate early childhood vocabulary to bridge the gap between them and children with better vocabulary knowledge. In support of this, Snow et al. (2007, p. 21) suggest a steady relationship between vocabulary scores in kindergarten and vocabulary knowledge and reading comprehension in tenth grade.

There appears to be a consensus that preschool education is particularly important for the development of children's cognition, vocabulary, and skills required for school attainment. However, research on the effect of preschool education in native Arabic speaking children is mostly absent and there is an urgent need for a research of this kind.

### The Relationship between L1 and L2 Mental Lexicons

Research on bilingualism, particularly research that addressed the relationship between L1 and L2 mental lexicons has long suggested a close relation between proficiency in L1 and L2 in bilinguals. Cummins (1991) reported a number of studies that support this notion. These studies suggest that literacy skills and vocabulary knowledge in the two languages of a bilingual are related. One potential reason for this link might most likely be that conceptual information acquired in L1 transfers to L2 and acts as a facilitator of L2 acquisition. Wolter (2006) argues that it is unlikely that L2 learners begin structuring L2 lexical knowledge from scratch when presented with L2 Lexical items, but that "L1 lexical/conceptual knowledge has a massive influence on how the learner structures connections between words in L2" (p. 741). Other studies (e.g., McLaughlin, 1986; Umbel, Pearson, Fernández & Oller, 1992) also point out that children best learn an L2 when their L1 is maintained and developed.

In the light of Common Underlying Proficiency hypotheses (CUP) framework (Cummins, 1976, 1979, 1980, 1991), which states that "support for one language of a bilingual is also beneficial for the other language" (Cummins & Swain, 1986, p. 87), the development of L1 mental lexicon size and the development of conceptual knowledge of bilingual children are associated and this knowledge is advantageous for L2 vocabulary acquisition. In a meta-analysis of research on bilingualism, Collier (1989) concludes that preschool children who begin the acquisition of L2 any time between ages 3 and 5 (referred to as sequential bilingualism) are not at any disadvantage as long as their L1 development is continuously maintained while they are acquiring the L2.

Correlational studies that directly examined the link between L1 and L2 vocabulary size, suggest a moderate to strong correlation between the two. For example, Masrai (2015) found correlations of.64 between L1 (Arabic) vocabulary size and L2 (English) vocabulary size among inter-mediate school learners, and.82 with high-school learners. Also, in a recent study by Daller and Ongun (2017)

with Turkish-English bilingual children, a correlation of.61 between the two languages was observed. These findings clearly indicate the important role of L1 vocabulary knowledge on the acquisition of L2 vocabulary.

### Diglossia in Arabic

The term diglossia was described by the American sociolinguists Ferguson (1959) as the situation where two or more varieties of the same language may be used by a native speaker of a language in different circumstances for different functions. Harris and Hodges (1981) also state that diglossia refers to "the presence of a high and low style or standard in a language, one for formal use in writing and some speech situations and one for colloquial use" (p. 88). In other words, people in a particular speech community may sometimes speak the standard form of the language and sometimes speak the local vernacular of their language conditioned by factors such as the formality of the topic, background of the speakers, and the situation. However, while it is acceptable to use the regional language at home and in the local community (Versteegh, 2004), it may not be appropriate when presenting news on TV or in formal writing. In the Arab world, it is possible to find multiple vernaculars used by people even in one small region. Modern Standard Arabic (MSA), on the other hand, is the language that is systematically taught in school and university and is used in formal media. This form of the language is referred to sometimes as formal language of Arabic or literary Arabic (Kaye, 2001). This section of the paper, however, is not intended for extensive review of diglossia (for details see Ayari, 1996; Kaye, 2001; Saiegh-Haddad, 2003), but to briefly present differences between vernaculars and MSA and the potential impact diglossia might have on children's acquisition of Arabic vocabulary.

One major difference between vernaculars and MSA is that vernaculars are grammatically and lexically less complex, and exclusively used in oral form and are hardly ever appear in writing (Kaye, 2001). Vernaculars are naturally learned by Arab children while MSA is learned formally when children begin school. This puts native Arabic children/speakers in a situation where two forms of the language are acquired, one before the school age (colloquial) and the other that is used in school (MSA). Saiegh-Haddad (2005) summarises this condition by stating that Arab children are in fact born into a distinctive linguistic context where "children grow up speaking a Spoken Arabic Vernacular (SAV), which is an exclusively spoken language, but later learn to read another linguistically related form, MSA" (p. 559).

Taking into account the arguments that Arab children without prior preschool education lack the literary knowledge of Arabic until they begin school (e.g., Holes, 1995; Suleiman, 1986), and that Arab children learn the formal language, MSA, as a second language (e.g., Ayari, 1996; Fender, 2008; Ibrahim, 1977), the importance of preschool education cannot be overstated when considering Arab children. The overview of diglossia thus suggests that children who begin school at the age of six without receiving preschool education are most likely at risk in terms of vocabulary development compared with children who had early educational programmes prior to school. The consequential low vocabulary size is also expected to influence their academic attainment as the relationship between the two is reported in the literature (e.g., Daller & Yixin, 2016; Masrai & Milton, 2017; Masrai & Milton, 2018). There is, however, a gap in our knowledge about the impact of preschool education on L1 vocabulary development and the influence this has on sequential bilingualism among native Arabic speaking children, which this study attempts to fill.

## THE STUDY

This study aims to investigate the influence of preschool education on the growth of L1 vocabulary and the potential advantage of this for young learners' acquisition of L2 vocabulary. As stated earlier in the paper, native Arabic children grow up in families where diversity of vernaculars are mainly spoken by parents and the community which are in fact different from the formal language. This formal version of Arabic language is first encountered by children when they begin schools at the age of six when they begin learning alphabets. Exception to this are children who have the opportunity to attend preschool programmes prior to compulsory school education. Noteworthy is that preschool learning, regardless of parents' preference, is subject to availability of government preschool classes and families' economic status, as families with high economic status can enroll their children in private schools.

To examine the effect of preschool education on learners' vocabulary development in L1 and L2, the study was conducted in a controlled setting. As children in the Saudi context start learning English at grade four, only children at this particular grade were examined. This method was followed to clearly pinpoint the effect of L1 vocabulary knowledge on L2 vocabulary acquisition controlling for other factors such as length of L2 exposure if later grades were included. To this end, two groups of learners, learners who have attended preschool programmes and learners who did not have this opportunity took part in the study. The research questions the study aims to answer are:

1. Is there a difference in L1 and L2 vocabulary size among fourth grade schoolchildren (children with and without preschool education)?
2. Does preschool education have any effect on children's L1 vocabulary knowledge in later school years, and to what extent can this effect be?
3. Does preschool education have any effect on children's L2 vocabulary acquisition when L2 exposure is controlled for, and to what extent can this effect be?
4. Is there a relationship between L1 and L2 vocabulary knowledge?

## METHOD

### Participants

The selection of participants was carefully performed based on data concerning preschool education available from schools' records and questionnaires sent to parents. The questionnaires were sent to a large number of parents but only 400 responses were received back with consent forms

for participation in the study. From these responses only 100 children were confirmed to have attended preschool. The responses were also checked against schools' records for agreement. Thus, to have an equal number of participants in each group (with and without preschool education), the sample for the study consisted of 200 fourth grade school children with 100 participants in each group. Group one (with preschool education) included 32 females and 68 males and group two included 40 females and 60 males. The children were all about the age of 10 when the data were collected.

### Instruments

Two tests were used in the study. The first test is X-Lex designed by Meara and Milton (2003) to measure written receptive vocabulary knowledge of the most frequent 5000 words in English. This test is widely used in studies of L2 vocabulary acquisition and includes vocabulary drawn from different frequency levels. It is a *yes/no* test and contains 100 real English words and 20 pseudowords. The number of real English items that a test taker indicates as known is multiplied by 50 to compute a raw vocabulary score. Also, the number of *yes* responses to pseudowords is calculated and multiplied by 250 and deducted from the raw score to compute the total vocabulary size of the test taker. The pseudowords are included in the test to adjust for any guesswork performed by a test taker.

The second test is a shortened version of Arabic-Lex designed by Masrai and Milton (2017) to measure written receptive vocabulary knowledge in Arabic. The test is a *yes/no* test and measures the knowledge of the most frequent 50 000 words in Arabic. However, as the original test is well expected to measure vocabulary knowledge far beyond the participants' level an adapted version measuring the most frequent 10 000 words was used in the current study. The adapted version of Arabic-Lex comprised 100 real Arabic items arranged by frequency in 10 columns and 20 pseudowords intermixed with the real vocabulary. To calculate a test taker's vocabulary size, the number of real items indicated as known is multiplied by 100 to get a raw vocabulary score. Then, the number of *yes* responses to pseudowords is calculated and multiplied by 500 and is deducted from the raw score to give a total adjusted score.

### Procedure

The two vocabulary size measures were administered to the participants in normal class time with help from schools' teachers. Prior to tests administration, clear instructions to the children in their native language were given. The order of the tests administration was not important, but the participants were given a short break between the two tests. The tests were not time limited, but each test should take about 15 to 20 minutes for young children to complete. As education system in Saudi Arabia has separate schools for males and females, the researcher did not collect the data from female schools himself, but clear instructions were given to the school teachers, volunteered for help in the data collection, on the purpose of the tests and how to administer them.

After the data were collected, they were marked by the researcher and prepared for analysis using SPSS version 24.

## ETHICAL CONSIDERATION

Prior to data collection, parents, school teachers and children were informed of the research purposes and the consent was obtained from parents and teachers before the start of the study.

## RESULTS

### Vocabulary Knowledge in L1 and L2

The results of the schoolchildren's vocabulary knowledge in both L1 and L2 are reported in Table 1. The results show that schoolchildren who had preschool education have higher vocabulary knowledge in both Arabic and English than those with no preschool education. Although the mean scores are generally low in both groups, they still indicate that children who had preschool education know approximately 32% more words in their L1 and about 50% in L2 than children who had no education prior to school age. Figures 1 and 2 illustrate the comparison between the two groups in their Arabic and English vocabulary knowledge, respectively.

The gap between the groups in terms of vocabulary knowledge in both languages seems large, and whether this gap can be narrowed down is another interesting research question.

To examine the differences in means between the two groups in terms of their vocabulary knowledge in L1 and

**Table 1.** Groups vocabulary knowledge in L1 and L2

| Groups | X-Lex score | Arabic-Lex score |
|---|---|---|
| With preschool education | | |
| Mean | 321 | 5020 |
| N | 100 | 100 |
| Standard deviation | 83.24 | 1096.18 |
| Without preschool education | | |
| Mean | 150 | 3435 |
| N | 100 | 100 |
| Standard deviation | 75.55 | 790.27 |

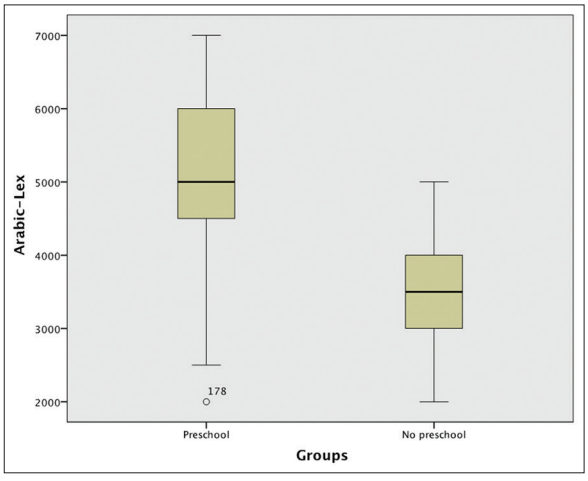


**Figure 1.** Arabic-Lex scores for children with and without preschool education

L2, a *t*-test was run. The results show statistically significant differences between the two groups in their scores in Arabic ($t$ = 15.21, df = 198, $p$ <.001, $h^2$ =.539) and English ($t$ = 11.73, df = 198, $p$ <.001, $h^2$ =.410).

These preliminary results indicate that schoolchildren who begin school at about the age of six without having a preceding preschool education are at risk of not coping with their peers who had the preschool opportunity. However, to quantify the effect of preschool education on children's growth of L1 vocabulary knowledge and also the acquisition of L2 vocabulary, effect size was measured in both cases.

### Effect Size of Preschool Education on Children's Vocabulary Development

To measure the effect size, Cohen's d (Cohen, 1992) was calculated. Cohen's d is determined by calculating the mean difference between two groups, and then dividing the result by the pooled standard deviation. The result indicates a large effect size of preschool education on children's L1 and L2 vocabulary knowledge at grade four (Cohen's d = 1.66; 2.15, respectively). According to Cohen (1992), a value of 0.8 or greater is a very large effect.

A simple regression analysis is further performed to examine the power of preschool education on children's vocabulary acquisition. Tables 2 and 3 present models' summary of the predictive power of preschool education in children's L2 and L1 vocabulary sizes. Table 2 shows that about 54% of the variance in fourth grade children's L2 vocabulary knowledge is explained by preschool education.

Similarly, Table 3 indicates that preschool education has a predictive power of children's L1 vocabulary development ($R^2$ =.41), where about 41% of the variance in children's vocabulary scores is explained by preschool education. This result suggests the efficacy of the education prior to school age on children's vocabulary acquisition and that a gap in vocabulary knowledge does exist between children who had preschool education and those who did not.

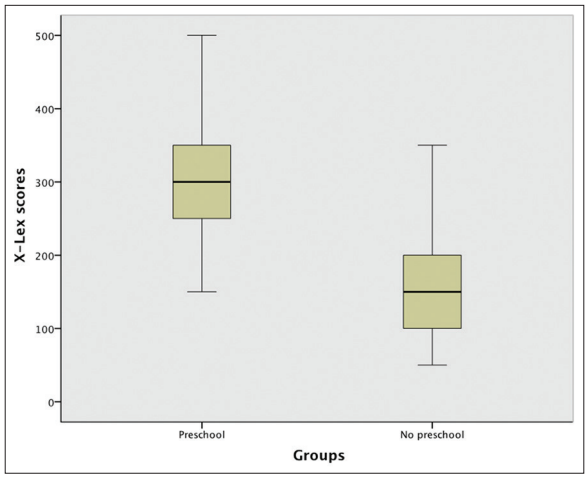


**Figure 2.** X-Lex scores for children with and without preschool education

### Relationship between L1 and L2 Vocabulary Knowledge

To examine the relationship between L1 vocabulary size and L2 vocabulary acquisition, Pearson correlation and regression analysis were performed. Firstly, the correlation between the scores in both languages is strong and also highly significant ($r$ =.62, $p$ <.001). This correlation result suggests that when learners' L1 vocabulary grows, a linear relationship with their acquisition of L2 can be observed.

To explore the data further, a simple linear regression was calculated to find out the predictive power of L1 vocabulary knowledge for L2 vocabulary acquisition. A significant regression equation was found ($F$(1, 198) = 121.067, $p$ <.001), with an $R^2$ of.379. The regression model is shown in Table 4. The regression result generally suggests that L1 vocabulary knowledge can explain about 38% of the variance in learners' acquisition of L2 vocabulary.

**Table 2.** Regression model summary of scores in X-Lex

| Model | R | R square | Adjusted R square | Standard error of the estimate |
|---|---|---|---|---|
| 1 | 0.73a | 0.54 | 0.54 | 79.48 |

a. Predictors: (Constant), Preschool education; numbers are rounded to two decimal digits.

**Table 3.** Regression model summary of scores in Arabic-Lex

| Model | R | R square | Adjusted R square | Standard error of the estimate |
|---|---|---|---|---|
| 1 | 0.64a | 0.41 | 0.41 | 96.55 |

a. Predictors: (Constant), Preschool education; numbers are rounded to two decimal digits.

**Table 4.** Regression model summary of the predictive power of Arabic-Lex on X-Lex

| Model | R | R square | Adjusted R square | Standard error of the estimate |
|---|---|---|---|---|
| 1 | 0.62a | 0.38 | 0.38 | 92.21 |

a. Predictors: (Constant), Arabic-Lex scores; numbers are rounded to two decimal digits.

## GENERAL DISCUSSION AND CONCLUSION

This study examined the impact of preschool education on Arab children's development of L1 vocabulary knowledge in early childhood and the likely influence L1 vocabulary knowledge has on the acquisition of L2 vocabulary in later school years. The results of the study showed that preschool education has a strong effect on children's L1 vocabulary growth and this can significantly enhance their acquisition of L2 vocabulary. The findings show that Arab children who were enrolled in preschool programmes before the formal school education, at about the age of six, scored significantly higher in receptive vocabulary size tests (L1 and L2). These findings are in line with previous work in terms of the efficacy of preschool education on L1 vocabulary development (Hart & Risley, 2003; Snow et al., 2007), and the support of L1 for promoting L2 vocabulary acquisition (Cummins, 1991). The advantage of preschool education is rather clear among Arab children in the current study, and this can be attributed to the issue of diglossia. Those who have received preschool education were introduced to MSA, the form of the Arabic language used in schools, well before the school age and this should have supported the process of their L1 vocabulary expansion. One important finding in the study is the 'gap' in vocabulary knowledge found between the two groups (one with preschool education and one without it). Children who had preschool education appeared to have larger vocabulary size in both Arabic and English (32% and 50%, respectively) when compared to the other group. This difference is statistically significant, and very pronounced, and the implication of this result is that preschool education plays a crucial role in children's vocabulary development in later school years.

The effect size of preschool learning on vocabulary development is generally large for both languages (Arabic and English) but larger for English when compared with children's native language. This can be interpreted as that the children who entered school without preschool education can, to some extent, catch up with their peers who had preschool advantage in their native language (schooling language) but have a backlog in English where they only have limited classroom exposure. However, this large effect size might be attributed to the nature of Arabic language where advantaged children of preschool education can develop their language skills, including vocabulary, through the medium of MSA well ahead of primary school entry. Thus, when they begin school at the age of six they already have some mastery level of inflection and derivation rules responsible for mental lexicon development and organisation (Masrai, 2016). On the other hand, children who begin school without being exposed to literary knowledge (Holes, 1995; Suleiman, 1986) are expected to face a great deal of challenge of coping with their advantaged peers. The result of this study, in the light of diglossia, supports the claims that Arab children learn formal Arabic as a second language when they begin school (e.g., Ayari, 1996; Fender, 2008; Ibrahim, 1977). Studies in contexts other than Arabic also suggest that attending preschool programmes enhances cognitive functions which carry over to school competence and overall educational success (Reynolds, Mann, Miedel, & Smokowski, 1997).

Cummins' (1991) CUP hypothesis, which assumes that vocabulary knowledge in L1 and L2 are related in bilinguals could clearly be supported. In this study L1 vocabulary size correlated significantly ($r$ =.62) with L2 vocabulary size even when the length of L2 exposure is controlled. This correlation almost matches that ($r$ =.61) in Daller and Ongun's (2017) study with a group of Turkish-English bilingual children. The findings in the current study support the literature in terms of the link between L1 and L2 vocabularies, and that the development of the lexicon in L1 has a positive impact on the development of the lexicon in L2. Daller and Ongun (2017) argue that the notion of conceptual vocabulary can be used to explain the relation between L1 and L2. Concepts that are already developed in L1 are more easily available in L2 and this would sustain the development of L2 vocabulary. In this study, learners in both groups received approximately the same L2 input from language classroom (about a year), but those who had preschool education appear to have clearly benefited from their L1 mental lexicon size developed earlier in the acquisition of L2 vocabulary. The regression analysis indicates that about 40% of the variance in L2 vocabulary acquisition is explained by L1 vocabulary size suggesting the important role L1 can play in the process of L2 learning. These findings conform to previous studies which suggest that children with low L1 proficiency level will not acquire L2 vocabularies as fast as those with more developed L1 mental lexicon (Cobo-Lewis, Eilers, Pearson, & Umbel, 2002; Cummins, 1984; Hakuta & Garcia, 1989).

This study has examined children in grade four after they had almost completed four years of school education in their native language. Regardless of the difference between the two groups in L2 vocabulary knowledge, there appears about 32% 'gap' in L1 vocabulary knowledge between the groups. There is no result yet to confirm whether this gap is consistent from the initial year of school education to grade four or may be that children without preschool education are catching up with their advantaged peers at a certain pace. A longitudinal study would be very useful in terms of identifying the gap and the potential time required for narrowing it down.

Overall, the findings reported in this paper have clearly shown that there is a marked difference in vocabulary size (L1 and L2) among fourth grade children, those who have received preschool education and those who have remained deprived. In other words, preschool education is found to have a substantial effect on L1 vocabulary development and this has a strong relation to sequential L2 vocabulary acquisition. As there is a notable dearth of studies of this kind on Arab children, further research is urgently needed to increase our awareness to better understand the role of preschool education in L1 vocabulary development and its effect on sequential bilingualism. This study has clear pedagogical and policymaking implications. First, to support vocabulary acquisition, parents should understand that enrolling their children in preschool education programmes is a necessity rather than a choice, as preschool education is found to have a high predictive power of vocabulary development. Second, edu-

cation policymakers should be aware of the gap that the lack of preschool education would create among children and to take thoughtful steps towards overcoming this problem. The study has some limitations. This study only targeted one school level, therefore the rate of vocabulary development cannot be clearly identified among children. Also, the data for the study were collected from groups of children in one large region in Saudi Arabia, thus including informants from other geographical areas and contexts other than Saudi Arabia might yield different results.

## ACKNOWLEDGEMENTS

The researcher would like to thank the Grade 4 teachers, children and their parents for their help in conducting this study. The researcher is also grateful to Professor James Milton (Swansea University, UK) for commenting on an earlier draft of the manuscript. Any errors remain solely the researcher's responsibility.

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