# Reconnoitring the Influence of Linguistic Aspects on Emirati Fifth Grade Students' Bilingualism Practices: A Mixed Method Study

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**ABSTRACT**

This is a mixed method study that explores the influence of linguistic aspects on Emirati fifth-grade students' bilingualism. The study aims at scrutinizing how the linguistics aspects in English and Arabic mediated learners' bilingualism and biliteracy practices. The fifth grade students (n = 350) and their Arabic and English teachers (n = 350) were surveyed in the first phase of the study about different aspects of linguistics in Arabic and English. The second qualitative phase features an in-depth investigation of the linguistics aspects practices through interviews with English teachers (n = 2), Arabic teachers (n =2) and fifth grades students (n = 3). The findings from this study indicated the following: 1) lower-level proficiency in English linguistic elements than in Arabic; 2) insufficient biliteracy practices due to linguistic difficulties; 3) students' dependence on applying learned skills and strategies in English classes; (4) Arabic teachers hold  positive views about students' linguistic abilities compared with English teachers; (5) Arabic and English teachers deploy explicit strategies to teach the students; (6) English teachers believe that students need scaffolding strategies due to discrepancies in the instructional environment. The study recommends a total reconceptualization of the interactions and context of bilingualism and biliteracy practices, and a gradual shift to English language instruction.

**Keywords:** Education; Bilingualism; Linguistic; Biliteracy, Emiratis

## INTRODUCTION

Bilingualism and biliteracy are becoming more common worldwide and have recently grown central to the language education policy in the United Arab Emirates. In 2009, policymakers in Abu Dhabi instituted an ambitious bilingual education program entitled "New School Model" (NSM) for public schools (O'Sullivan, 2015). In this program, English is used as the language of instruction from a learning stage as early as kindergarten, with students expected to use both Arabic and English to express themselves and understand major concepts in mathematics and science (ADEC, 2010). Native English speakers were recruited as English medium teachers to teach English, mathematics, and science; while other subjects continued to be taught in Arabic by Arabic medium teachers. After UAE students' results in the Program of International Student Assessment (PISA) highlighted the students' weaknesses in basic language skills, with UAE students scoring in the bottom third internationally (OECD, 2014), the UAE launched the National

Agenda in 2014. This program mandated high rankings in different standardized tests, such as PISA and the Trends in International Mathematics and Science Study. Proficiency in Arabic and English is especially necessary to achieve high scores in these tests. Therefore, when the UAE moved up by only one ranking in mathematics but fell two places in science and reading proficiency in 2015 (OECD, 2016), the NSM was expanded to cover every grade from kindergarten to secondary school, in 2017. This attempt to improve English as a language of instruction without hampering Arabic language literacy was a crucial step for the country's bilingual education policy.

Following the institution of NSM in the UAE, research on bilingual education in the UAE has blossomed. However, scholars have tended to focus on the problems tangential to bilingual language teaching, such as the challenges presented by Arabic language dialects, the possibility of identity loss, and low levels of Arabic and English proficiency among students (Al-Issa, 2017; Gallagher, 2011; O'Sullivan, 2015; Rababah, 2003; Raddawi & Meslem, 2015). The question addressed by this study—how bilingualism and biliteracy develop in young children in UAE—has been given little attention, with only sporadic studies on bilingual teaching practices in the classroom.

This study focuses on fifth-graders' bilingualism and biliteracy because their linguistic development at this point is crucial in boosting their subsequent performance in higher education and international assessment (OECD, 2014). Fifth grade is especially important in the UAE, as it is considered the transition from Cycle 1 to Cycle 2 where students face more complex and cognitively demanding tasks. Following the approach of Hamidaddin (2008), this paper examines the linguistic aspects of instruction that either support or hinder the development of student bilingualism and biliteracy. The main questions addressed in this paper are as follows:

1.      What is the influence of linguistic aspects on Emirati fifth grade students' bilingualism?
2.      What do English and Arabic teachers report about the influence of linguistic aspects on Emirati fifth grade students' bilingualism?
3.      What are the differences, if any, between the students and their teachers with regard to linguistic aspects?

## THEORETICAL FRAMEWORK

### Influence Of Lingustics On Language Learning

The most influential factors in language learning for all bilinguals are the linguistics aspects (e.g., phonology, syntax, and semantics) of the language because language as communicative system, medium for thought, and social institution can be categorized into components including form, syntax, phonology, semantics, and pragmatics (Al-Saidat, 2010; Hassan, 2014; Lesaux & Siegel, 2003; O'Grady et al., 2017; Owens, 2012). These linguistics aspects are fundamental for bilingual students to master at an appropriate age and academic stage and to excel academically.

The central role of linguistics is vital in first and second language learning. In particular; phonology, syntax and semantics are to be seen as precursors for bilingual and biliteracy development which permeates the cognitive processes involved in reading and writing (Gough & Tunmer, 1986).

This research is based on linguistics competency and cognitive perspective propounded by Cummins' language theory (1979; 1980; 2001). According to the Cummins' Threshold Theory, educators need to consider the students' level of language development in their first language (L1), not only to ensure L2 acquisition, but also to facilitate the cognitive development that leads to proficient use of both languages. Cummins's work, along with that of Baker (2001; 2006), states that public school students in UAE who have developed equal proficiency in both Arabic and English will be able to process information through both languages, whereas those whose Arabic is more developed than English will process through Arabic alone. However, when English is the language of instruction for core subjects, students' language proficiency can impede their literacy and academic performance.

## LITERATURE REVIEW

This study follows the lead of a handful of scholars who have explored techniques for fostering biliteracy in the classroom. Such methods include

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reinforcing oral proficiency with reading and writing and transferring literacy skills between languages (Alshamsi, & Alsheikh, 2020; Cummins, 1980; Baker, 2001; Bialystok et al., 2005; Schwartz et al., 2005; Kim et al., 2013; Ng, 2013; Rosi & Rosli, 2015). Debates about bilingual instruction focus on potential benefits, problems encountered, and probable solutions. Many scholars have noted the benefits of bilingual education, such as increased literacy and cognitive flexibility (Proctor et al., 2010), high-level reading comprehension in both languages (Jiménez et al., 1996; García, 2000), and a well-balanced development of bilingual composition skills (Midgette & Philippakos, 2015). However, other scholars have argued that bilingual education impedes learning (Alduais, 2012; Arthur & Martin 2006; Qian, 2002), while others have examined means of implementing cross-language support for linguistically disadvantaged students (i.e., students whose L2 is not as supported or developed as their peers) (Bialystok, 2011; Moll et al., 2001; O'Brien et al., 2014). There have also been studies on the methodologies of learning English and Arabic and the challenges of those approaches, e.g., variations in sound systems (Al-Saidat, 2010; Alshamsi, & Alsheikh, 2020; Hassan, 2014; Endley, 2018; MacWhinney (2007).

Most studies on bilingualism are devoted to general analysis of the relationship between first and second language development and the growth of bilingual literacy in children (Baker, 2001, 2006; Bialystok, 2005; Cummins, 1980; Gerber & Leafstedt, 2005; Kim et al., 2013; Sparks et al., 2009). Some studies have tracked how children develop proficiency in L1 and L2 simultaneously (Baker, 2001, 2006; Bilash, 2009; Gerber & Leafstedt, 2005). Other studies have examined how proficiency in L1 affects literacy development in L2, including thinking processes and grammar comprehension, often positing that proficiency in L1 is related to swifter acquisition of L2 (Ahearn et al., 2002; Baker 2001, 2006; Butzkamm, 2003; Qian, 2002; Rublik, 2017). In this regard, semantics, wide vocabulary, code-switching, and oral language development have been deemed crucial (Al-Seyabi & Tuzlukova, 2015; Bernhardt, 2000; Lervåg & Aukrust, 2010; Proctor et al., 2012; Wallner, 2016). Scholars have paid particular attention to the transfer of

linguistic skills in reading and writing, including the transfer of writing skills between alphabetic languages; and between languages with different writing systems, such as Chinese and Arabic (Carlisle & Beeman, 2000; Mahmoud, 2000; Mumtaz & Humphreys, 2001).

## SINGINFICANCE OF THE STUDY

This study contributes to the scholarship on both bilingual education in the UAE and bilingual education globally, as well as offers suggestions for revising teaching practices in the UAE, By filling the research gap on current bilingual teaching practices in the UAE. Concomitantly, this study underscores the importance of revising the structure of UAE's bilingual education in the following two ways: (1) a new focus on L1 (Arabic) in early education with a gradual shift to focus on L2 (English); and (2) a new transition by bilingual teachers from L1 to L2. Globally, this study offers a window into student learning processes at a key moment of educational transition and within a particularly challenging linguistic environment. Not only is Arabic, a Semitic language different from English, which is as a Germanic language—for instance, in their verb systems and sentence structures (Alduais, 2012; Gough & Tunmer, 1986; Zollmann et al., 2006)—but also the triglossic nature of Arabic makes learning Modern Standard Arabic (MSA) difficult for many Arab students (Elbeheri et al., 2011). Since Emirati children pick up only colloquial Arabic at home, they must learn MSA and classical Arabic and English simultaneously, with the resulting cognitive overload leading to inadequate proficiency in both languages. Consequently, this study will be useful to both researchers and practitioners of bilingual education.

## METHODOLOGY

### Context of the Study

The study was conducted in September 2017 across schools in three regions of Abu Dhabi, with an especially close analysis of two schools in the city of Al Ain, focusing on fifth-graders as students transitioning to more cognitively

demanding tasks in mathematics and science. The linguistic elements that either facilitate or hinder the bilingual abilities of fifth-graders were specifically examined.

## Research Design, Instruments, and Participants

A mixed-methods approach of collecting, analyzing, and mixing quantitative and qualitative data was employed (Creswell & Clark, 2011). In the first phase of the study, questionnaires were used to survey fifth grade male students ($n = 125$), fifth grade female students ($n = 225$), fifth grade English teachers ($n = 150$), and fifth grade Arabic teachers ($n = 200$) across three different regions of Abu Dhabi. These students and teachers reported their views regarding the linguistic aspects that influence bilingualism of fifth grade students. This study relied on probabilistic sampling because this method's intent in quantitative research is to select many individuals who are representative of the population (Creswell & Clark, 2011). The participants were recruited through random selection after getting ADEK's approval.

The second phase of the study featured a smaller sample of students and teachers from two schools in Al Ain. The students and teachers were deliberately selected to allow for an in-depth understanding of participants' views (Bryman, 2012; Creswell & Clark, 2011; Kvale & Brinkmann, 2009). The main criterion for selecting participants was their availability of to share their experiences with the researchers. The smaller sample of students ($n = 3$) and two teachers for each language ($n = 4$) allowed the researcher to elicit their experiences and views in details. Schools were asked to nominate teachers who were willing to participate, and those teachers were then asked to nominate students who would talk about their experiences.

## Data Collection and Analysis

In both the survey and the interviews, students and teachers were asked about their views with regard to linguistic abilities in L1 and L2 in terms of phonology, syntax, and semantics and how these linguistic aspects influenced students' usage in both languages. The survey questions required students and teachers to rate students' competence in various issues related tophonology, syntax, and semantics for English and Arabic. Once the responses to the survey were received, the interview questions were devised to explore these issues in greater detail. Students and teachers were asked to describe their classroom experiences at length, including providing reasons for linguistic difficulties and examples of situations where these difficulties occur. In addition, the researcher discussed interpretations of responses with the teachers and their students, especially for clarification, through phone calls and school visits. Finally, the interview transcriptions and main themes were discussed in terms of multiple coding among inter raters (two Heads of Faculties) and a faculty to ensure trustworthiness, while dependability was established by comparing responses across the interviews.

## Validity, Reliability, and Trustworthiness

The content validity of the questionnaires and interview questions was established by a panel from the College of Education at the United Arab Emirates University to check their appropriateness, and the feedback provided was incorporated into the questionnaires and interviews. The internal consistency of the questionnaire was measured through Cronbach's Alpha which was found to be.95.

## Ethical Consideration

Permission was obtained from ADEK, schools, teachers, and parents of the participating students. Teachers were informed of the purpose of the research at the beginning of the study, and both parents and teachers signed consent forms.

## RESULTS

### Results of the Survey

Overall, students and teachers reported stronger linguistic abilities in Arabic than in English, but

nevertheless agreed that students needed to improve both languages to the required grade level. While students had the least difficulty with English semantics, they found that English phonology and syntax to be problematic. Teachers noted consistent problems across phonology, syntax, and semantics. The discrepancy between Arabic and English skills was especially marked for semantics. These challenges are overwhelming in the context of a bilingual program since both languages are not developed up to grade level so that students can cope with the cognitively demanding tasks of Cycle 2. Consequently, both biliteracy (the use of both languages in written text) and bilingualism (comprehension of spoken and written information in both languages) will be problematic.

In terms of phonology, students and teachers reported stronger abilities in Arabic than in English. For Arabic, the students asserted that they can read many words in a sentence, have good pronunciation, can blend and segment words, are able to recognize all the Arabic phonemes, and read multisyllabic words. The teachers also observed relative facility among the students with word segmentation and blending, reading many words in a sentence, having sufficient knowledge of phonemes, and a good grip on pronunciation. However, they disagreed with the students over the ability to read multisyllabic words, highlighting that students had difficulty in this area. More generally, they praised phonological awareness of students, while cautioning that students still need adequate support in their Arabic phonological skills. For English, the students were confident in their pronunciation but had problems blending and segmenting words, reading multisyllabic words, knowing English phonemes, and reading words in a sentence. The English teachers were slightly less positive than their Arabic counterparts about students' abilities. These teachers, like the students, noted that the students had problems with reading multisyllabic words, word segmentation and blending, understanding English phonemes, and reading many words in one sentence. While they shared their students' confidence in pronunciation skills and also praised their overall phonological awareness, they stressed the importance of developing better phonological skills in English (see Tables 1 and 2). Table 3 summarizes the greater confidence of Arabic teachers in their students' phonological knowledge.

TABLE 1. Students' report on their linguistic abilities in English and Arabic

| Category | English-M | English-SD | Arabic-M | Arabic-SD |
|---|---|---|---|---|
| **Phonology** | | | | |
| I complete word blending and segmentation easily. | 2.613 | 0.879 | 4.137 | 0.622 |
| I read multisyllabic words in a sentence. | 2.793 | 0.711 | 4.391 | 0.506 |
| I know all phonemes. | 3.123 | 0.961 | 4.308 | 0.462 |
| I read different words in a sentence. | 3.326 | 0.797 | 3.914 | 0.506 |
| I have adequate pronunciation skills. | 3.686 | 0.478 | 4.077 | 0.267 |
| **Syntax** | | | | |

| | | | | |
|---|---|---|---|---|
| I understand the main parts of a sentence. | 2.776 | 0.716 | 4.303 | 0.535 |
| I use multisyllabic words to create a sentence. | 2.830 | 1.079 | 4.354 | 0.524 |
| I understand grammar. | 3.153 | 0.847 | 2.851 | 0.896 |
| I can form a full sentence. | 3.173 | 0.797 | 4.143 | 0.350 |
| I understand the sentence order. | 3.273 | 0.804 | 3.029 | 0.980 |
| I can connect the main parts of an English sentence. | 3.330 | 0.785 | 3.766 | 0.588 |
| **Semantics** | | | | |
| I can identify the difference among nouns, adjectives, and adverbs. | 2.806 | 0.705 | 3.551 | 0.791 |
| I am aware of most words' meanings in a text. | 2.983 | 0.831 | 3.320 | 0.710 |
| I can understand the overall meaning of a sentence. | 3.293 | 0.731 | 3.694 | 0.611 |
| I am able to guess words to understand the written text. | 3.446 | 0.763 | 4.374 | 0.535 |

TABLE 2. English and Arabic teachers' report on phonological abilities

| Category | English-M | English-SD | Arabic-M | Arabic-SD |
|---|---|---|---|---|
| Students' abilities in reading multisyllabic words. | 2.230 | 0.870 | 3.330 | 0.920 |
| Students' abilities in word segmentation. | 2.650 | 0.696 | 3.400 | 0.890 |
| Students' abilities in blending words. | 2.740 | 0.806 | 3.600 | 0.703 |
| Students' abilities in knowing phonemes. | 2.820 | 0.935 | 4.250 | 0.713 |
| Students' abilities in reading many words in a sentence. | 2.870 | 0.813 | 3.500 | 0.890 |

| | | | | |
|---|---|---|---|---|
| Students have sufficient pronunciation skills. | 3.170 | 0.857 | 4.245 | 0.605 |
| Students have sufficient phonological awareness. | 3.190 | 0.872 | 4.100 | 0.813 |

TABLE 3. English and Arabic teachers on phonological abilities

| Category | English | Arabic |
|---|---|---|
| Students' abilities in reading multisyllabic words. | 12.0% | 57.5% |
| Students' abilities in word segmentation. | 12.7% | 58.0% |
| Students' abilities in blending words. | 22.7% | 70.5% |
| Students' phonemic knowledge. | 46.0% | 82.5% |
| Students' abilities in reading many words in a sentence. | 27.3% | 55.0% |
| Students' pronunciation skills. | 46.7% | 91.0% |
| Students' phonological awareness. | 49.3% | 75.0% |

In the case of syntax, both students and teachers again felt more confident in students' Arabic skills than in students' English skills, whereas in phonology's case, teachers noted more difficulties in Arabic. The students had some issues with Arabic grammar and sentence order, such as difficulty in creating complex sentences, but they found it easy to form a full sentence, know the essential parts of a sentence, and put multisyllabic words together to create a sentence. Arabic teachers reported more difficulties with syntax abilities than the students. While the teachers agreed that students could form full sentences and connect parts of a sentence, they found that in addition to the other issues, the students had problems completing a full meaningful sentence and made frequent grammatical errors because they did not understand the different parts of the sentences. The students themselves admitted they had difficulty in identifying the main parts of an English sentence, using multisyllabic words to create a sentence, flexibility in using English grammar, creating a full sentence, understanding sentence order, and connecting parts of a sentence. However, they felt they were able to connect words to form meaningful sentences to some extent. English teachers reported that their students generally struggled with the syntactic aspects of English, and contradicted the students' belief that they could readily form meaningful sentences (see Tables 1 and 4). Table 5 shows that Arabic teachers had more confidence in their students' skills, yet they also found that they had more difficulties with phonological skills. Both Arabic and English teachers noted that students had problems identifying sentence order and completing a full sentence.

In terms of semantic skills, there was a greater discrepancy between Arabic and English. For Arabic, students felt that they were able to guess the meanings of commonly used words but had difficulty understanding more complex vocabulary. They were also confident about knowing the difference between nouns, adjectives, and other parts of speech. The Arabic teachers rated their students as "above average" in comprehension. However, the teachers had concerns about their students' ability to understand the different parts of a sentence and to

use the language accurately. For English, the students admitted that they had difficulty understanding parts of speech and the general meaning of sentences. However, they could guess the meanings of some words from context and could comprehend some differences between nouns, adjectives, and other parts of speech. The English teachers concurred with their students but also listed other difficulties that have been pointed out previously (see Tables 1 and 6 below). Table 7 shows this marked discrepancy between Arabic and English students' skills for semantics.

TABLE 4. English and Arabic teachers' report on syntactic abilities

| Category | English-M | English-SD | Arabic-M | Arabic-SD |
|---|---|---|---|---|
| Knowing sentence order. | 2.700 | 0.800 | 3.075 | 0.820 |
| Connecting parts of a sentence. | 2.740 | 0.800 | 3.570 | 0.668 |
| Knowing parts of a sentence. | 2.800 | 0.806 | 3.715 | 0.604 |
| Completing a full sentence. | 2.820 | 0.935 | 3.330 | 0.716 |
| Forming a full sentence. | 3.060 | 0.820 | 4.085 | 0.582 |
| Making grammatical mistakes. | 3.220 | 0.790 | 4.065 | 0.744 |

TABLE 5. English and Arabic teachers on syntactic abilities

| Category | English | Arabic |
|---|---|---|
| Students' abilities in identifying sentence order. | 12.7% | 37.5% |
| Students' abilities in connecting sentence parts. | 23.3% | 67.0% |
| Students' abilities in identifying sentence parts. | 26.0% | 78.5% |
| Students' abilities in completing sentences. | 24.0% | 47.5% |
| Students' abilities in forming full sentences. | 36.7% | 88.0% |
| Grammatical errors. | 54.3% | 81.5% |

TABLE 6. English and Arabic teachers' report on semantic abilities

| Category | English-M | English-SD | Arabic-M | Arabic-SD |
|---|---|---|---|---|
| Understanding the use of nouns, verbs, adjectives, and prepositions. | 1.900 | 0.730 | 2.950 | 0.860 |
| Understanding most of the words in a written text. | 2.506 | 0.564 | 3.630 | 0.604 |
| Understanding the differences between nouns, adjectives, and pronouns. | 2.646 | 0.733 | 3.460 | 0.794 |

| | | | | |
|---|---|---|---|---|
| Understanding the meaning of simple phrases. | 2.933 | 0.799 | 3.750 | 0.751 |
| Guessing the general meaning of a sentence. | 3.000 | 0.904 | 3.855 | 0.810 |
| Guessing a word's meaning from context. | 3.040 | 0.784 | 3.940 | 0.839 |

TABLE 7. English and Arabic teachers on semantic abilities

| Category | English | Arabic |
|---|---|---|
| Students' understanding of nouns, verbs, adjectives, and preposition. | 22.0% | 34.5% |
| Students' comprehension of most words in a written text. | 23.3% | 69.5% |
| Awareness of the differences between nouns, adjectives, and pronuns. | 20.3% | 65.0% |
| Students' understanding of the meaning of simple phrases. | 28.7% | 60.5% |
| Students' deduction of the general meaning of a sentence. | 40.7% | 72.0% |
| Students' deduction of words from a written context. | 32.7% | 77.0% |

**The Interviews**

The second phase of this study involved interviews with three fifth grade students, two English teachers, and two Arabic teachers to gain a deeper understanding of the students' linguistic abilities. While students reported some difficulties with Arabic, they generally believed that their knowledge of Arabic was stronger than their knowledge of English. Thus, Arabic was their base for English literacy and strategy transfer. Strategy transfer refers to the development of certain competencies in the second language that is partially a function of the type of competencies already developed in children's L1 (Cummins, 1981). Although they had difficulties with complex syntax in both languages, they more frequently had to turn to their English teachers for assistance. The students reported that good semantic knowledge helped them understand texts easily; they described applying strategy transfer to improve their semantics; and they particularly relied on semantic scaffolding in English. However, the teachers' views were more varied. Arabic teachers thought that the students had a wide repertoire of Arabic phonology, while English teachers voiced concerns about the students' grasp of English phonemes. English teachers found that students transferred Arabic syntax to English although sentence formation rules in the two languages are completely different. The following themes emerged from students and teachers' interviews:

Phonological Abilities

*The Need for English Teachers' Instructional Guidance*

Unsurprisingly, students are aware of their strengths and weakness in English phonology as well as some features of Arabic phonology. They

believe that words with irregular pronunciation in English require help from the teachers or other strategies to sound out these words. The strategies provided by language teachers helped students recall the skills and knowledge required to thoroughly understand basic language concepts and to cope with different orthographic systems.

Student1: Sometimes I don't realize that "th" makes one sound, and the teacher always reminds me like, the, I know, sh, makes ش in Arabic, like the initial of my sister's name "Shaikha."

Student1: In English, words are always easy but when we have strange or new word, the teacher helps us in reading them …. words like "civilization."

Students appealed more frequently to English teachers than to Arabic teachers for help.

Student2: I know the letters and all sounds in Arabic…If you write a letter or a word, I know how to sound them out.

Student2: In English, there is something strange, when the teacher asks me to read the word "knife," I do! But she pronounces it as "nife"!

English teachers tried to close the gap between the students' knowledge level and the instructional level. To that end, they deployed different scaffolding strategies to enable the students to read and write.

English T1: We tried to break words down, and of course they are exposed to them like they know, the word environment and transportation for example, and they get used to see those words. English T2: I ask top students to repeat these words in their own way they speak and I hear the sound they use.

Teachers also suggested providing extra resources, creating focus groups, and employing differentiated strategies to help students. The need was felt for the provision of bilingual books and bilingual assistants for math and science classes.

EnglishT1: At least a bilingual assistant can be with me because science is more about knowledge and concepts. We need bilingual books as well.

English teachers were concerned about the variations in the students' competency levels. This posed a challenge for teachers who have to teach students with varying degrees of proficiency. A related issue was that of teachers from different English language backgrounds who had different accents, which affected students' phonological knowledge.

English T2: This is tricky issue…American or South African teachers. At the beginning, it was quite difficult because our ways of pronouncing words were different from what they used to hear on TV on their video games. Mostly, American accent, while most teachers are South African.

Arabic: Easier but Still Problematic

Although students believed that Arabic is easier than English to read, they reported that there were some difficult words in Arabic that they could not read.

Student2: I like to read in Arabic and English. However, there are some difficult words in Arabic and English. Of course, Arabic words are easier than English words and sentences.

Teachers reported that pronunciation was rarely a problem, yet students still needed to internalize basic skills for learning Arabic, especially with the short Arabic vowels (diacritics): Fat'ha [ ´ ], Kasra [ ´ ], Dama [´], Sukūn [ ´ ], Shadda [ ˇ ].

Arabic T1: I don't think they have a problem except for [s] "سين" sound [ س ] in Arabic and many students who have difficulty in pronouncing "س" [s]sound for example as I mentioned earlier [clear thought].

Arabic T2: In Arabic, some have difficulty in using the short vowels like "fateha," "dama," and "Kasra" and always I correct them.

Arabic as the Base for English Literacy and Strategy Transfer

Students found that assembling sentences and reading in English was easier when they had the same skills in Arabic. Some students reported that they could put words together to create sentences in both languages.

Student3: We learned this in Arabic, how to cut words down and combine them again together! Whatever I learned in Arabic, I feel like I am doing it in English.

Students who read Arabic at their grade level felt that reading in English was as easy as reading in Arabic, while students who faced difficulty in reading Arabic (e.g., difficulties with short vowels, plurals, Quranic Verses) needed to review these skills again to catch up with others who were reading at an appropriate grade level.

Student3: When I face a word that I don't know in English, I find it difficult to form the sentence, but I manage that using my own strategies. I learned these skills in earlier stages, like in grades three and four.

English pronunciation, however, can also affect Arabic pronunciation. Some students realized that they had problems with pronouncing consonants such as /p/ and /r/ in English and Arabic, as illustrated in the following excerpt:

Student3: Yes, for example, I say "Baber" instead of saying "paper." I know that it is wrong, and the teacher many times told us that it is wrong but we keeping making the same mistake. I pronounce /r/ in Arabic as /r/ in English.

English teachers thought that Arabic influenced the way students pronounced English. They also identified several phonological problems that were to be expected from native speakers of Arabic, including problems with consonant digraphs and consonant clusters.

English T1: English outcomes that we are given are very specific. It is challenging, because bilinguals are not able to distinguish between homographs and homophones where the sound that same and look different.

English T1: Absolutely, they are not able to pronounce certain letters accurately like /p/. they always go for /b/ sounds for /p/ words.

Syntactic Abilities

*Syntactic Problems of Arab Bilinguals*

Although some students expressed confidence in manipulating English grammar, others noted that Arabic sentences were more easily created than English ones.

Student3: I can form sentences in both languages.

Student1: I find it easier for me to connect Arabic sentence parts than English.

Students also confused the sentence order of English (SVO) with Arabic (VSO) because their English teachers do not explicitly teach them grammar.

Student2: When I write a sentence in the past, like "Zahab Alwalado Ela Al Madrasati," I write it this way "Went boy to the school" because we write differently in Arabic.

Arabic teachers thought that the students could handle simple sentences, but had difficulty with complex ones.

Arabic T1: They write good short sentences as they know the main parts of a sentence. But when it comes to writing, they sadly lack the ideas, they lack the ability to write complex sentences.

Arabic T2: Of course, when they can't decode this will lead to a difficulty in comprehension, for example, a sentence like: من أهم .تعتبر الطاقة النووية أفرع العلوم الحديثة [Atomic energy is considered one of the most important branches in science] difficulty in decoding lead to difficulty in comprehension!

English teachers reported that their students transfer Arabic syntactic structure to the English language. Grammar, which is not on the syllabus, poses a challenge for English teachers.

English T2: This may impact how we teach children to do written work…the children do not know even reflexive pronouns, what is a noun, what is an adjective, etc.

English T2: Prepositions are absent in Arabic. For instance, they say "my mom says for me," instead of "my mom said." They add extra preposition and do not place it in the right order. Mainly, the subject and object are in the right place. For example, "my mom said for me sit down," my mom said for me is something they invented.

## Scaffolding Syntactic Complexities

English teachers reported that they had to work on scaffolding the complexities of English grammar, although it is not in the syllabus.

English T2: They have to learn math and science in English while learning English language. The vocabulary they use in science is unrealistic, the words used are so difficult for children expected to learn, they are scientific terminologies. We have to simplify them through scaffolding strategies.

For instance, some teachers use examples of actual words rather than the names of sentence parts as a scaffolding strategy.

English T1: If they describe things successfully, I don't have to tell them this is an "adjective." So, we use describing bubbles and stuff to help to come up with new words.

## Semantic Abilities

*Semantic Knowledge Leads to Better Comprehension*

Although some students raised concerns regarding difficult Arabic words, understanding the parts of speech in Arabic helped improve comprehension and strategy transfer.

Student2:      In English classes, I keep asking but the teacher thinks that I want to chat with my friends. I know what is noun, verbs and adjectives in Arabic but there are words like المتمايل (waving) I don't know, yesterday we had this word.

Using a dictionary was not a common practice unless a teacher directed the students to do so. Instead, students applied their own strategies, e.g., online searches, to understand the general meaning.

Student1: Although our teachers encourage us to use dictionaries, we depend on guessing or Google Translate, it is easier.

Students Depending on Semantic Scaffolding

Teachers noted that students needed help in understanding texts, usually because of limited vocabulary and little language training.

English T2: Generally, when they read simple text, they do understand. It is not thinking abilities, it is language problem. They need more vocabulary, more reading strategies, etc.

Students also applied their own strategies, such as using pictures and slowing down their reading.

Student3: Teachers told us, the pictures and other words in the text can help me understand the text. Even if I don't know the exact meaning, I can understand the general idea of the text.

## SUMMARY OF THE MAJOR FINDINGS

The survey led to the following discoveries: (1) lower-level proficiency in linguistic elements of English than in Arabic, which led to poor academic performance due to English being the medium of instruction; (2) insufficient biliteracy practices due to linguistic difficulties hindering proficient reading and writing; (3) student dependence on applying learned skills and strategies in English classes; (4) Arabic teachers held more positive attitude toward students' linguistic abilities than English teachers; (5) the use of many explicit strategies by Arabic and English teachers to teach the students; (6) a belief by English teachers that students need scaffolding strategies due to discrepancies in the instructional environment.

## DISCUSSION

The main finding of this paper—lower-level proficiency in English than in Arabic due to teaching in English—is in line with previous studies. Baker (2001), Qian (2003), Wallner (2016), and Owens (2012) pointed out that familiarity with L1 and L2 syntax is crucial for bilingual students who wish to acquire a competent level of writing and reading skill. The familiarity with L2 (English) syntax was missing for these UAE students since English grammar was not included on mathematics and science syllabi. As with previous research, this study found that students who were strong in Arabic—i.e., who had greater familiarity with Arabic grammar—were good at English and had better academic outcomes. Likewise, the reasons behind this lower-level proficiency (i.e., limited
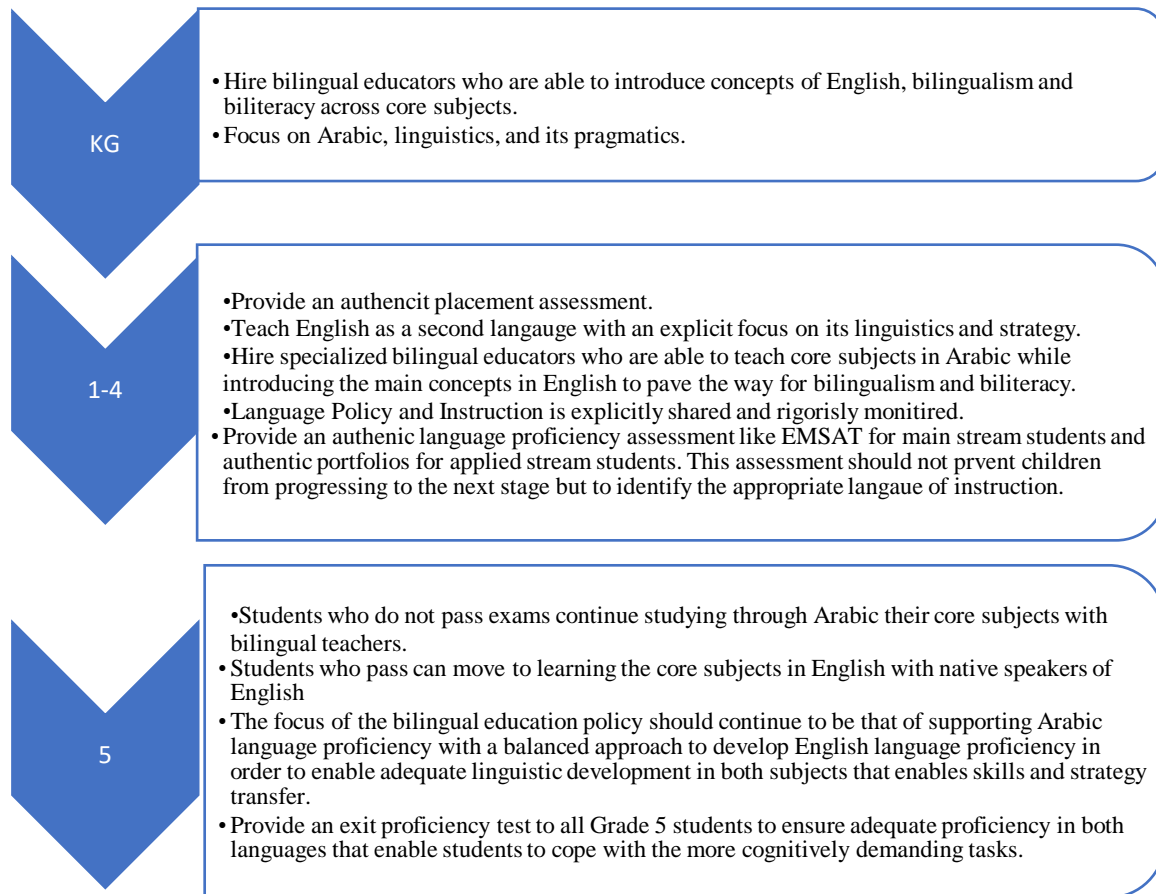
vocabulary, the inability to use cues, inferring meaning) have been previously addressed (Lesaux & Siegel, 2003; Owens, 2012; Hassan, 2014; Al-Seyabi & Tuzlukova, 2015).

Moreover, the difficulty that many of the students in this study encountered in simultaneously acquiring L1 and L2 challenges the recurrent argument that development of L1 literacy is the base for literacy development in L2 (Ahearn et al., 2002; Baker, 2001, 2006; Butzkamm, 2003; Cummins 1979, 1981, 2000, 2001; Qian, 2003;). While these students noted that they used Arabic as a base for understanding English syntax and semantics, they also reported the need to use non-linguistic methods, such as pictures, for comprehension in Arabic as well as English. This study thus highlights how students can utilize non-textual skills for comprehension and language learning instead of relying solely on L1. Moreover, the variability in English skills across phonology, syntax, and semantics did not correspond to similar discrepancies in Arabic across these three areas. If the argument that L1 is essential for L2 was valid, stronger Arabic linguistic skills should convert into stronger English skills. Yet semantics appear to be a little weaker for Arabic but significantly weaker for English. Consequently, these findings question previous studies that stressed successful cross-language phonological and writing system transfer (Mumtaz & Humphreys, 2001; Wang et al., 2009).

These findings also challenge the previous explanation for difficulty in learning L2. MacWhinney (2007) had noted that when differences between two languages increase, the pronunciation of L2 becomes less accurate.

Although students in this study noted some difficulties with English pronunciation, both they and their teachers reported overall good English pronunciation. By contrast, this study highlights the importance of the instructional environment, especially the explicitness with which teachers address linguistic aspects of both languages. The students revealed that learning Arabic as L1 in school is challenging because of differences in the colloquial Arabic they speak at home. Arabic teachers repeatedly noted student difficulties in achieving grade level Arabic syntax. Also, this is aligned with English teachers' views that they found a negative transfer from Arabic syntax to English syntax. Cummins (2000) suggested that insufficient L1 skills often make learning L2 difficult, yet this study points out the need to inquire about the reasons behind insufficient L1 skills. That is, the findings of this study reveal how it is not only L1 that generates linguistic skills, but how L1 is taught and the context in which it is learned. Students themselves underscored the importance of teaching techniques, since they turned to their teachers for assistance and suggestions in learning both languages. A key component for the successful bilingualism and biliteracy of these students, then, would be orchestrated or mutual efforts to introduce English and Arabic bilingual and biliteracy practices, due to the complexity of linguistic skills learning in both languages. Thus, to ensure sufficient language proficiency in L1 (Arabic) as the language of thought needed to improve content knowledge and skills transfer, and to ensure adequate improvement of English as the language of instruction, the following model is suggested for current practice (Figure 1):

Figure1: A Model for Promoting Bilingual Practice

**KG**
- Hire bilingual educators who are able to introduce concepts of English, bilingualism and biliteracy across core subjects.
- Focus on Arabic, linguistics, and its pragmatics.

**1-4**
- Provide an authencit placement assessment.
- Teach English as a second langauge with an explicit focus on its linguistics and strategy.
- Hire specialized bilingual educators who are able to teach core subjects in Arabic while introducing the main concepts in English to pave the way for bilingualism and biliteracy.
- Language Policy and Instruction is explicitly shared and rigorisly monitired.
- Provide an authenic language proficiency assessment like EMSAT for main stream students and authentic portfolios for applied stream students. This assessment should not prvent children from progressing to the next stage but to identify the appropriate langaue of instruction.

**5**
- Students who do not pass exams continue studying through Arabic their core subjects with bilingual teachers.
- Students who pass can move to learning the core subjects in English with native speakers of English
- The focus of the bilingual education policy should continue to be that of supporting Arabic language proficiency with a balanced approach to develop English language proficiency in order to enable adequate linguistic development in both subjects that enables skills and strategy transfer.
- Provide an exit proficiency test to all Grade 5 students to ensure adequate proficiency in both languages that enable students to cope with the more cognitively demanding tasks.

## CONCLUSION

This study reveals the importance of establishing a solid knowledge of Arabic phonology, syntax, and semantics for successful bilingual education in the United Arab Emirates. Students and teachers alike noted that the students struggled across a range of linguistic aspects in Arabic, from sentence construction to text comprehension, and simultaneously also struggled with linguistic aspects of English. This foundation knowledge is especially important because the students repeatedly mentioned their use of strategies for learning Arabic to grapple with the grammatical complexities of English. Such basic knowledge, however, needs to be developed from a more explicit teaching of both languages.

With concerns evident from the survey and interviews used in this study, a more structured approach to language instruction should be implemented to assure the success of UAE bilingual education. It would be helpful to consider using Arabic (L1) as the language of instruction for the core subjects until Grades 4 and 5 or teaching the core subjects bilingually in both Arabic and English through a bilingual educator, and teaching techniques for cross-linguistic transfer to enable students to use strategies between languages freely. These revisions to the current education system could be established through strategies such as content-based language teaching and by hiring bilingual teachers who can teach science and mathematics in Arabic or bilingually and, gradually, in English. Students will then improve in math and science through their stronger language skills in Arabic with enriched facilitation in English.

Also, since students revealed how English linguistic aspects, especially pronunciation, could influence Arabic linguistic aspects, we need to

find a balance, so that Arabic is preserved and used as the language of thinking for Emirati students—for instance, emphasizing the differences, as well as the similarities, between Arabic and English. The differences between Arabic and English can also generate new ways of English teaching in the Emirati context and consequently facilitate bilingualism and biliteracy that are supported by a clear bilingual education policy with a focus on biliteracy.

Given the complexity of the responses by students and teachers to this study, future research should examine each linguistic aspect separately in the context of UAE. Studies could consider ways to facilitate proficiency in both languages based on the transfer between languages used so frequently by students and find the best methods to teach both languages. This study, as well as future research, will serve to highlight the range of language-related variables and techniques in L1 and L2 learning.

## LIST OF ABBREVIATIONS

L1: First Language

L2: Second Language

ADEC: Abu Dhabi Education Council

Cycle 1: Primary

Cycle 2: Middle school

## DECLARATIONS

### ETHICS APPROVAL

This work is the authors' own original work which has not been previously published elsewhere and is not currently considered for publication elsewhere. The manuscript credits the appropriate contributions of the co-author. Therefore, all authors have been personally involved in substantial work leading to the paper, and will take responsibility for its content. This research has obtained the Social Sciences Research Ethics Committee Approval (Proposal number: ERS_2016_5702).

### Availability of data and materials

Data is available upon request.

### Competing interests

We declare that we have no competing interests.

### Authors' Contributions

The authors confirm the contribution to the manuscript as follows: study conception, design, data collection, analysis and interpretation: Aysha Alshamsi; reviewed the results and approved the final version of the manuscript: Negmeldin AlSheikh

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