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The relationship between children's explicit knowledge and awareness of diglossia and success in learning Arabic: a preliminary investigation

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ABSTRACT

The study examined the relationship between children's explicit knowledge and awareness of diglossia (EKAD) and learning Arabic in school. Additionally, this study addresses the interrelationships between EKAD and oral comprehension, lexical, phonological, and morphosyntactic awareness upon the transition to reading to learn. Thirty typicaly developing Arabic speaking fifth and sixth graders were randomly recruited (n = 18 males). The Arabic diglossic Knowledge and Awareness test (ADAT) was administered to examine the interrelationships between diglossic awareness and children's Arabic reading and mathematical abilities. Results showed that children depicted varying diglossic knowledge and awareness with no significant effect of gender, age, or academic grade. Children's EKAD scores significantly predicted their scores on Arabic reading and writing test but not their math scores. The contribution of EKAD was beyond that of phonological awareness. Significant corelation was also found between EKAD and phonological awareness. These results indicate that children's academic success at advanced stages of Arabic learning is related to explicit knowledge and awareness of diglossia. In turn, this provides support for the role of diglossic/bidialectal awareness as an independent emergent skill during literacy acquisition in diglossic communities and the need to incorporate it into the educational and clinical assessment of emergent literacy among diglossic communities.

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Diglossia; metalinguistic awareness; language acquisition; literacy; Arabic

Introduction

Recent research highlights the specific characteristics of language learning and literacy achievement in situations in which there is a mismatch between the language used for daily communication and the language used in reading and writing (e.g. Grohmann et al. 2016 in Cypriot Greek speakers; Washington et al. 2019 in African American speakers; Khamis-Dakwar and Froud 2019; Saiegh-Haddad 2018 in Arabic speaking children). These contexts are referred to by some scholars as bidialectal or diglossic situations, in which two interrelated varieties coexist in a complementary functional distribution. One variety, referred to as the low language variety, is used for daily communication while the other, referred to as the high language variety, is used for formal communication, reading and writing. The variety used for daily communication is typically acquired naturally and used in informal social situations and within the home. The high language variety, such as Modern Standard Arabic (MSA) in Arabic diglossic communities, is usually perceived as

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the prestigious language worthy of standardisation, study and appreciation and is predominantly acquired through formal education. The low language varieties, such as the different Arabic spoken dialects, are less valued by community members and are acquired naturally (Khamis-Dakwar 2019). This sociolinguistic situation is usually described based on Ferguson's (1959) definition of diglossia as described above. However, some scholars have reservations in referencing Ferguson's diglossia framework, commenting on its colonial underpinnings and the use of the terms low and high variety, and the negative connotations these carry (Khamis-Dakwar 2021). Moreover, the growing use of the low language variety in written social media is blurring the binary complementary usage model as proposed by Ferguson (1959). In this article, we choose to use the term diglossia as a joint term to facilitate crosslingusitic dialogue and understanding of language development in different mismatch situations. Ultimately, the intent is to decolonise the term and prevent the othering of communities exhibiting this sociolinguistic situation, as well as transforming the use of the term to one that brings together inquiries into understudied variation in human speech communities.

Most evaluations of language and emergent literacy skills in Arabic diglossia tend to overlook the distinctive feature of diglossia, focusing instead on separate examinations of children's linguistic abilities in each variety. As such, it is documented that the language assessment of Arabic-speaking children exposed to MSA at different levels throughout their language development, who are expected to develop linguistic knowledge of MSA before and throughout their schooling, is mainly conducted in a way that monodialectical/mono-variety speakers are tested. Similarly, assessment of emergent literacy skills for Arabic-speaking children who are expected to use MSA for formal communication, reading and writing are mainly administered by either using assessments in MSA (e.g. Tibi and Kirby 2019) or by presenting oral tasks in the low language variety (i.e. the spoken dialect) and writing and reading tasks in MSA, consistent with the functional distribution of the two varieties (e.g. Abu-Rabia, Share, and Mansour 2003; Saeigh-Haddad, 2003; Abu Ahmad, Ibrahim, and Share 2014). There are only a few reported scholarly investigations that use emergent literacy tasks controlling for language variety and diglossic features (e.g. Saiegh-Haddad 2003, 2004; Khamis-Dakwar, Froud, and Gordon 2012; Saiegh-Haddad and Haj 2018) (For a review of language and emergent literacy assessment in Arabic diglossia, see Khamis-Dakwar and Froud 2019).

Language and literacy testing that does not account for diglossic contexts is still observed in most Arabic language assessment tools, and in the assessment of emergent literacy skills. We argue that these mono-variety based clinical and educational assessment designs are common because many scholars and clinicians are relying on translations and adaptations of assessment tools that are originally based on linguistic and literacy norms usually derived from practices developed for American or British English-speaking communities that do not exhibit diglossia. Hence, there is still a need to develop and standardise authentic assessment tools for Arabic and other diglossic situations, to address and relate to predictors of successful literacy development, including both universal predictors of such skills, and those that are specifically related to diglossic situations. Indeed, research and assessment practices in diglossic communities are evolving and we are witnessing a growth in production and discussion of new assessment tools addressing linguistic variation contexts. For example, the Diagnostics Evaluation of Language Variation Screening Test (DELV-ST) was developed to evaluate language abilities for non-mainstream English-speaking children, based on examinations of noncontrastive linguistic items that are based on shared features of African American Englihs (AAE) and Mainstream American English (MAE) and items that assess universal linguistic features as well as items that identify processing difficulties (i.e. nonword repetition tasks). Similarly, the dialect density measure was developed to evaluate the degree of dialect use in the speech of African American English speaking children (Puranik, Branum-Martin, and Washington 2019). In Arabic, ADAT (Arabic Diglossic Knowledge and Awareness Test) was developed to measure children's explicit knowledge of diglossia and metalinguistic abilities across all language domains while controlling for diglossic features (Khamis-Dakwar and Makhoul 2014).

These developments in the formulation of assessment tools mirror changes in research practices for investigations of language development and early literacy in Arabic diglossic communities.

These studies have focused on the impact of linguistic distance; that is, the extent of match/mismatch between the two language varieties for specific domains and structures. One extensively studied impact is phonological representation and processing, a skill that was a focus in Anglocentric reading studies since it is found to be critical for successfully learning to read and write (for a review see Saeigh-Haddad and Joshi 2014). More recent studies have expanded their focus to address other domains including morphosyntactic processing (Khamis-Dakwar, Froud, and Gordon 2012), and have started controlling for diglossic features in phonological and lexical processing (e.g. Saiegh-Haddad 2003, 2004; Saiegh-Haddad and Haj 2018). The impact of diglossic features on language development and processing has become more widely acknowledged; however, the development and empirical investigations of explicit diglossic knowledge and awareness has yet to accrue a wide literature base with respect to diglossic speaking communities in general and Arabic-speaking communities in particular.

One of the few reported efforts in this domain informed the development of the ADAT in Arabic (Khamis-Dakwar and Makhoul 2014; Makhoul, Copti-Mshael, and Khamis-Dakwar 2015). Additionally, there has been some effort towards developing a language curriculum designed to facilitate students' metalinguistic awareness of diglossic variation in African American English speaking students (Pearson, Conner, and Jackson 2013; Devereaux and Palmer 2019), and for Cypriot Greek speaking students (Tsiplakou, Loannidou, and Hajioannou 2018). The ADAT was based on growing research showing interrelationships between diglossia, language development, and literacy as well as the recognition of the importance of linguistic awareness/flexibility and/or codeswitching for reading success in diglossic communities (e.g. Saiegh-Haddad and Haj 2018 ; Puranik, Branum-Martin, and Washington 2019). The ADAT has five sections evaluating language knowledge in five domains while controlling for diglossic variables. The test has been revised and modified based on first pilot administration of the test to 40 children from Nazareth (see Khamis-Dakwar and Makhoul 2014). The first section is referred to as EKAD, i.e. Explicit knowledge and awareness to diglossia. This section examines the child's knowledge and awareness of the terms Standard Arabic (Fusha) and dialectal Arabic (Ammiye), the child's knowledge of the context of use for each of these two varieties, similarities and differences between them, and awareness and perception of their switching between these two systems. The EKAD was administered to 40 first to fifth grade children from Haifa and preliminary findings on children's explicit diglossic knowledge and awareness was reported in a later publication (i.e. Makhoul, Copti-Mshael, and Khamis-Dakwar 2015). The EKAD was partially incorporated in Syria Holistic Assessment for Learning (SHAL), an assessment of literacy, social-emotional, and math abilities developed by Unicef, Save the Children with regional literacy and numeracy experts. The findings of a pilot administration of the test to 1,456 Syrian Arabic-speaking 2nd and 3rd graders was lately reported and showed an effect of EKAD on children's literacy development and numeracy skills for third graders only.(Khamis-Dakwar et al. in press). The second section of the ADAT is a grammaticality judgment task. This section aims to examines children's grammaticality judgments of ten morphosyntactic features in Palestinian Arabic and MSA of which some overlap in the two varieties and some do not. The third section focused on lexico-semantic domain. The early version of the test included a lexical identification task of which children were asked to select a picture that represented MSA cognate and non-cognate words in comparison to the Palestinian Arabic words. The pilot results showed that children attained ceiling effect to this task (see Khamis-Dakwar and Makhoul 2014 for detailed review of the results). The section was revised and currently tests children's ability children's ability to identify lexical associations between words that are semantically connected in the Palestinian dialect and in MSA. The fourth section is a metaphonological judgment task and examines the child's ability to perform metaphonological tasks while controlling for the status of the presented sound being shared on non-shared in the two language varieties spoken by the examined child.

According to the flexibility hypothesis, literacy success is dependent on children's metalinguistic awareness of the linguistic features of the two varieties used for communication versus reading and

writing, in all language domains, measured by their ability to shift between the two linguistic systems in diglossia (e.g. Saiegh-Haddad and Haj 2018). Subsequently, some research has focused on examining the extent of children's use of the AAE in African American English speaking children and its correlation with success in reading and writing in MAE (see Puranik, Branum-Martin, and Washington 2019) while other studies focused on incorporating codeswitching skills into a curriculum as a facilitator for academic success (e.g. Pearson, Conner, and Jackson 2013; Tsiplakou, Loannidou, and Hajioannou 2018).

We are gaining more and more knowledge about children's diglossic knowledge development especially in relation to emergent literacy skills found to be predictive of literacy learning success. For example, Schiff and Saiegh-Haddad (2018) showed that phonological awareness of phonemes and syllabic structures that are both shared and non-shared between diglossic language varieties is mastered by sixth grade. Khamis-Dakwar and Makhoul (2014) showed a developing EKAD between 1–5 grade levels. Khamis-Dakwar, Froud, and Gordon (2012) showed that mastery of grammaticality judgment for shared and non-shared MSA and spoken dialect features is achieved by fourth grade. Ravid, Naoum, and Nasser (2014) showed that children master retelling an MSA story by second grade and Leitkin, Ibrahim, and Eghbaria (2013) showed that children aged 5–6 years have good comprehension levels (>7.5) of narratives presented in MSA as well as in the child's spoken dialect. No studies report the performance of Arabic-speaking children on lexical association tasks within diglossia. Most notably, fewer studies are focused on the later stages of learning.

In this study, we administered the ADAT to thirty typically developing Palestinian fifth and sixth grade students. These students are immersed in a diglossic community using standardised MSA and a Palestinian Galilee dialect that ADAT's development was based on. This preliminary investigation aimed to answer the following questions:

(1) Does explicit knowledge and awareness of diglossia predict attainment in Modern Standard Arabic reading comprehension and writing for students in 5th and 6th grade?
(2) How does explicit knowledge and awareness of diglossia correlate with phonological awareness, lexical awareness, morphosyntactic awareness, and oral comprehension scores, on both shared and non-shared constructions between the two diglossic varieties of Arabic, as measured by the ADAT?
(3) If so, does the predictive power of explicit knowledge and awareness of diglossia go beyond the contribution of phonological awareness, student's grade, and gender?

Method

Participants

Study participants were 5th and 6th grade students from a church-run school in the North district of Israel. All the children come from similar middle class socioeconomic status. The school has two 5th grade sections, including 23 and 24 students respectively, and two 6th grade sections that included 28 students each. Potential participants were assigned a number from 1 to 103 and every third student's family was contacted for the purposes of randomising participation in the study. Thirty parents returned the written consent form. All children had typical development as per parents reports and no reported learning difficulties or disabilities. All lived in the same city in the North district of Israel and spoke Palestinian Galilean dialect. The children in the study ranged in age from ten years five months to thirteen years. Fourteen participants were in the 5th grade while 16 attended 6th grade. The 5th graders included eight males and six females, and their ages ranged from 126 to 140 months (mean = 131.714, SD = 3.47). There were 10 male and 6 female participants in the 6th grade and their ages ranged from 133 to 156 months (mean = 144.37, SD = 5.9).

Measures

ADAT

The ADAT was administered to all participants by a learning specialist who was trained to administer the test by the second author.

The ADAT includes the following subtests:

(1) Explicit Knowledge and Awareness of Diglossia (EKAD): This subtest examines the child's knowledge and awareness of diglossia in their language environment by addressing knowledge of the following four domains: definition, interrelationship, text knowledge, and cognitive knowledge. The first domain, (1) definition, focuses on examining the child's knowledge of the defining features of diglossia (i.e. the child's ability to define diglossia and the functional distribution of the two language varieties). The second, (2) interrelationships, focuses on knowledge of the linguistic systems in diglossia (i.e. the child's ability to identify the similarities and differences between the two language varieties). The third domain, (3) text knowledge, focuses on knowledge of types of texts and individual preferences which contributes to information regarding the child's literacy attainment. And finally, the fourth domain, (4) cognitive knowledge, focuses on the child's awareness of cognitive processes related to learning Arabic diglossia (i.e. the child's ability to identify codeswitches between the two language varieties used for informal versus formal contexts). This subtest is administered in the child's dialect (i.e. the 'low' language variety), requiring the child to answer eight questions. The answers are coded based on a key developed for this test (see Khamis-Dakwar and Makhoul 2014; Makhoul, Copti-Mshael, and Khamis-Dakwar 2015). The range of scores a child can achieve on this subtest ranges from 0 to 16 points (see record form in Appendix A).

(2) Grammaticality judgment task: This subtest is composed of two tasks that examine child's knowledge and awareness of morphosyntactic shared and non-shared features between the spoken dialect and MSA. The first examines the child's morphosyntactic knowledge in the spoken Palestinian dialect, and the second in spoken MSA, using a binary-choice grammaticality judgment task. Two characters are introduced, one a television broadcaster who speaks MSA while the other character is a falafel seller who uses the spoken dialect. Children are asked to determine whether utterances would be appropriate if produced by each character. The analysis of the child's grammatical judgment is conducted for both MSA and the spoken dialect, as well as for features that are exhibited similarly (i.e. shared) or differently (i.e. non-shared) in the two language varieties. In total, the child is presented with 40 pairs of sentences; 20 in MSA and 20 in spoken dialect, half containing shared and half non-shared features. The range of scores a child can achieve on this subtest ranges from 0 to 40, broken down to 20 in MSA and 20 in the child's Galilean dialect. Ten of each address shared features and 10 address non-shared features within each variety (see record form in Appendix A). The development of this subtest was based on an empirical examination of morphosyntactic development in Arabic diglossia (Khamis-Dakwar, Froud, and Gordon 2012).

(3) Meta-phonological awareness: This task assesses phonemic awareness, known to be predictive of literacy success in Arabic (Saiegh-Haddad 2018; Tibi and Kirby 2019). This task is designed to control for diglossic features, presenting phonemes that are shared and non-shared in spoken and Standard Arabic. This design reflects research showing an interplay between the diglossic status of a phoneme and its acquisition (e.g. Hamdan and Amayreh 2007) and the ability of children to perform phonological awareness and spelling tasks (Saiegh-Haddad et al. 2011). This section of the ADAT contains four tasks: rhyme production, initial phoneme substitution, final phoneme substitution, and medial phoneme identification. Half of the items in each task include MSA-only phonemes and the other half include shared phonemes from MSA and the Palestinian Galilee dialect (the range of potential scores is from 0 to 14 for this task).

(4) Meta-lexical awareness/Lexical association: The semantic and morphological relationships between vocabulary items in the diglossic language varieties are an essential part of the development of linguistic knowledge of a morphological system based on roots and patterns (e.g. Boudelaa and Marslen-Wilson 2004a, 2004b). However, in addition to morphological features, in the course of Arabic language development children also represent the semantic relationships between MSA and spoken words. This subtest examines children's ability to identify lexical associations between words that are semantically connected in the Palestinian dialect and in MSA. Three words are presented at a time, and the child asked to say which two of the words are most strongly associated and to explain their answer. There are six word 'triplets' presented in this task, of which three are MSA-only and the others are shared. For example, for the MSA only triples, the child is presented with the following three words: /xāriğ/(outside), /dāxil/(inside), and /Ṣaṭɛʕ/(shining) and evaluated for their ability to identify the lexical association between the two MSA words for inside and outside. Similar items are presented for lexemes that are presented in Palestinian Arabic such as /nāʕəmʔ(smooth), /xiʃɛn/ (rough), and /faḍə/ (empty). The child's answer is coded as 0 if the child does not identify the two semantically associated words, 1 if they identify two interconnected words but does not explain the relationship between them, and 2 if they can identify the semantically associated words and explain the relationship. The range of scores for this subtest is 0–12

(5) Listening comprehension: This section aims to examine listening comprehension skills in light of the presence of Arabic diglossia. In this subtest, the child is presented with two short stories, one in spoken Palestinian Galilean dialect and one in MSA, and asked to answer five comprehension questions for each one. The range of scores is 0–10 (five maximum correct answers for each language variety).

Arabic and math attainment scores

Participants' scores in the final exam in Arabic and math were also collected. The two sections of each class received the same final exams. The scores for these academic exams were statistically compared to the data collected from the ADAT. The 6th grade math exam was administered in class by the assigned math teacher in the last trimester of 6th grade. The total possible earned points were 100. The test was composed of seven parts, dealing with fractions as required by the Israeli Ministry of education math curriculum:

- Simple fractions and decimals on a number line
- Whole and mixed fraction multiplication
- Multiplication and division of decimals by 10, 100 and etc.
- Finding fractional parts of a quantity
- finding a fraction of a whole number
- Dividing simple fractions.

The 5th grade math exam was administered in class by the assigned math teacher in the third trimester of 5th grade. The total possible earned points were 100. The test was composed of seven parts (approximately four items in each part), dealing with simple mathematical operations as required by the Israeli Ministry of education math curriculum:

- Addition, subtraction and multiplication
- Division by single digit
- Result estimation in mathematical operations
- Quantity estimation – developing understanding for large numbers
- Integrative questions

The Arabic 6th grade language test was administered in class by the assigned Arabic teacher in the third trimester of 6th grade. The total possible earned points were 100. It included the following three parts:

- Literature: Literary text 'Robin Hood'. The students were required to read the text and answer nine corresponding questions (six open-ended and three multiple-choice questions). The text was composed of approximately 900 words and included two visual illustrations. The comprehension questions were constructed in alignment with the requirements of the Israeli Arabic language curriculum (2008): literal (local), inferential (global), evaluation and critique as well as meta-textual. The total possible score is 60 points.
- Linguistic skills: The test examined language and syntax knowledge in four domains, in accordance to the requirements of the Israeli Arabic language curriculum. The overall obtained total score was 30 points. Four exercises were included, each examining one syntactical feature.
- Written expression: Students were required to write an official letter, addressed to the municipality head office, concerning school-related or community-related topics. The total possible obtained score was 10 points.

The Arabic 5th grade language test was administered in class by the assigned Arabic teacher in the third trimester of 5th grade. The total possible earned points were 100.

The test included three parts.

- Literature: Literary text 'A Talent That Mesmerized the World'. The students were required to read the text and answer nine corresponding questions (five open-ended and four multiple-choice questions). The text was composed of approximately 800 words and did not include any visual illustrations. The comprehension questions were constructed in alignment with the requirements of the Israeli Arabic language curriculum (2008): Literal (local), inferential (global), evaluation and critique as well as meta-textual. The total possible score is 60 points.
- Linguistic skills: The test examined language and syntax knowledge in four domains, in accordance with the requirements of the Israeli Arabic language curriculum. The overall possible total score was 30 points. Four exercises were included, each examining one syntactical feature.
- Written expression: Students were required to write up to 12 lines, describing a memorable enjoyable trip with friends.

Data analysis

Record forms of the ADAT were scored by the second author and reviewed by the first author for accuracy of calculation. The data were recorded in an Excel spreadsheet and later entered into SPSS for statistical analysis. ANOVA and hierarchical regression analysis were conducted to examine the contribution of EKAD to students' success in learning to read and write in Modern Standard Arabic, and to determine whether a model composed of EKAD scores, phonological awareness to shared and non-shared phonemes, age, and gender could predict success in Arabic learning. These analyses were conducted based on the predictions that EKAD is a critical skill for literacy and academic success in learning to read and write in diglossic contexts such as Arabic-speaking communities, and the reported predictive role of phonemic awareness in literacy success in Arabic (Tibi and Kirby 2019). Hence, EKAD, phonological awareness, gender, grade, and age were entered as potential predictors in the analysis of Arabic and math grades in a hierarchical regression analysis for all participating students.

The second analysis focused on examining the interrelationships between children's scores on different ADAT tasks. Specifically, we used non-parametric Spearman correlation analyses to

examine the relationships between EKAD and listening comprehension, lexical, morphosyntactic, and phonological awareness scores.

Results

A hierarchal multiple regression was conducted to predict Arabic grade scores from age, gender, phonological awareness (shared and non-shared), and EKAD. A normality of residuals was examined using SPSS and independence of residuals was 1.628, assessed using the Durbin-Watson procedure. A hierarchal multiple regression analysis was conducted to predict Arabic grade from age, gender, phonological awareness of shared and non-shared phonemes, and EKAD. A multiple regression model statistically significantly predicted Arabic grade (F [5, 24] = 7.824, p < .001 with an $R^2 = 0.620$) of which EKAD was found to be a significant contributor to the model and is a unique incremental contributor to the Arabic grade. Results of the hierarchical regression analysis, regression coefficients, standard errors for the Arabic model can be found in Table 1 below.

For the math grade, the equation was not found to be significant for predicting math grade based on age, gender, phonological awareness (shared and non-shared), and EKAD (F [5, 24] = 3.730, p = .012, with an $R^2 = 0.437$) but EKAD was not found to be significant contributor as shown in the regression coefficients and standard errors for the math model in Table 2 below.

The Durban-Watson value for independence of residuals was 1.562

Children's performances on the different subtests of the ADAT varied. A univariate ANOVA analysis showed no differences in the EKAD scores by grade and gender. There was no significant effect of gender (F [1, 29] = 3.756, p = .089) or age (F [20, 29] = 8.433, p = .177) and no significant interaction between the two (F [4, 29] = 0.365, p = .823). Table 3 below shows the range of performances, mean, standard deviation, and the standard error of measurement on each subtest.

A Shapiro–Wilk analysis was conducted and showed the EKAD and non-shared phonological awareness subtests were the only subtests resulting in a normal distribution (ADAT: 0.957, p = .257, non-shared phonology: 0.871, p = .024). The relationship between explicit knowledge and awareness of diglossia (EKAD score) and the metalinguistic awareness abilities in other domains evaluated within the ADAT (i.e. meta-lexical score, morphosyntactic knowledge, and listening comprehension) were examined using non-parametric Spearman correlations. The EKAD scores correlated significantly with children's scores on phonological awareness tasks (shared phonology: rs = 0.480, p = .007; non-shared phonology: rs = 0.5, p = .005), meta-lexical task performance in MSA (rs = 0.392, p = .032), but not in PCA (rs = 353, p = .056). No significant correlations were found between EKAD scores and children's grammaticality judgment scores or listening comprehension in MSA and spoken dialect (grammaticality judgment in PCA: rs = −0.218, p = .248; grammaticality judgment in MSA: rs = 0.195, p = .302; PCA listening comprehension rs = 0.045 p = .814; MSA listening comprehension rs = 0.055, p = .772).

In addition, MSA paragraph comprehension scores correlated with the Galilean spoken paragraph comprehension scores (rs = 0.499, p = .005), MSA lexical awareness scores correlated with shared lexical awareness scores (rs = 0.677, p < .001), and MSA phonological awareness scores correlated with shared phonological awareness scores (rs = 0.822, p < .001). Different correlations were found between children's performance on shared and non-shared items in the grammaticality judgment subtest. The general scores on shared grammatical judgment items correlated with those for non-shared grammaticality judgment items in general (rs = 0.646, p < .001), and within each language variety (shared and non-shared PCA items: rs = 0.692, p = 0; shared and non-shared MSA items: rs = 0.495, p = .005). Similarly, phonological awareness scores for shared phonemes correlated with phonological awareness scores for non-shared phonemes (rs = 0.822, p = 0).

Table 1. Summary of hierarchical regression analysis predicting success in Arabic scores N = 30, * = $p < .05$, ** $p < .01$, SE = standard error of B, EKAD = explicit knowledge and awareness of diglossia (scores range from 0 to 16), phonological awareness = scores on shared and non-shared phonemic identification, substitution and rhyme production subtasks, Age = age of participants in months (range 126-156), Gender = gender of participants (1 = male, 2 = female).

		Unstandardised coefficients		Standardised coefficients					
Step	Predictor	B	SE	Beta	*P*	R square	Adjusted R square	F Change	*P*
1	Age	-.219	0.243	−0.168	.377	Model 1: (age, gender)			
	gender	4.447	4.418	0.188	.323	0.060	−0.010	0.862	.434
2	Age	-.126	0.194	0.520	.522				
	Gender	4.8626	3.437	0.97	.173				
	Phonological awareness: Shared	5.426	1.764	0.204	.005**				
	Phonological awareness: Non shared	−0.565	1.272	0.740	.661	Model 2: (age, gender, shared and non-shared phonological awareness)			
						0.485	0.403	10.316	.002**
3	Age	−0.098	0.170	−0.075	.571	Model 3: (age, gender, shared and non-shared phonological awareness,			
	Gender	2.194	3.146	0.093	.492	and EKAD)			
	Phonological awareness: Shared	4.195	1.604	0.572	.015*				
	Phonological awareness: Non shared	−1.178	1.135	−0.228	.310				
	EKAD	2.041	0.700	0.474	.008**	0.620	0.541	7.824	$p < .001$**

Table 2. Summary of hierarchical regression analysis predicting success in math scores N = 30, * = $p < .05$, SE = standard error of B, EKAD = explicit knowledge and awareness of diglossia (scores range from 0 to 16), phonological awareness = scores on shared and non-shared phonemic identification, substitution and rhyme production subtasks, Age = age of participants in months (range 126-156), Gender = gender of participants (1 = male, 2 = female).

		Unstandardised coefficients		Standardised coefficients					
Step	Predictor	B	SE	Beta	*P*	R square	Adjusted R square	F Change	*P*
1	Age	-.034	0.317	−0.020	.916	Model 1			
	gender	−0.410	5.748	−0.014	.944	0.001	−0.073	0.009	.991
2	Age	0.105	0.258	0.064	.687				
	Gender	−0.176	4.579	−0.006	.970				
	Phonological awareness: Shared	6.204	2.350	0.670	.014*				
	Phonological awareness: Non shared	−0.104	1.695	−0.016	.951	Model 2			
						0.462	0.334	9.259	.006*
3	Age	−0.116	0.262	0.070	.663	Model 3			
	Gender	−1.142	4.829	−0.038	.815				
	Phonological awareness: Shared	5.752	2.462	0.622	.028*				
	Phonological awareness: Non shared	−0.330	1.743	−0.051	.852				
	EKAD	0.749	1.074	0.138	.492	0.437	0.320	0.487	.012

Table 3. Descriptive statistics for performances of participating children on ADAT subtests.

Subtest (Potential score range)	Mean (range) of children's performance	Standard deviation	Standard error	Skewness
PKA (0-16)	9.37 (3-14)	2.735	.499	−.544
Grammaticality Judgment				
Palestinian Arabic Shared	7.63 (2-10)	2.953	0.539	−1.103
Palestinian Arabic Non-shared	7.93 (3-10)	2.149	0.392	−.913
MSA Arabic Shared	9.83 (8-10)	0.461	0.084	−2.931
MSA Arabic Non-shared	9.43 (6-10)	0.971	0.177	−2.217
Meta-lexical awareness				
MSA	4.40 (0-6)	1.404	0.256	−1.101
PCA	4.83 (2-6)	1.147	0.209	−0.827
Phonological awareness				
Shared	5.20 (1-7)	1.606	0.293	−.670
Non-shared	3.90 (0-7)	2.280	0.416	−0.205
Paragraph comprehension				
PCA	4.17 (2-5)	0.791	0.145	−0.762
MSA	4.17 (1-5)	1.177	0.215	−1.569

Discussion

A growing number of studies on language and literacy development in diglossic-speaking communities suggest an interaction between awareness of diglossia and language and literacy development. Much of the previous research in this field has focused on examining the interplay between diglossic features and children's abilities at a range of linguistic domains (for a review see Khamis-Dakwar and Froud 2019). However, a lesser studied element of diglossic contexts relates to children's explicit knowledge and awareness of diglossia and its defining characteristics. There is growing evidence for the importance of diglossic awareness and the effectiveness of systematic pedagogical approaches that capitalise on 'variation as a tool for increasing students' metalinguistic awareness' (for a review see Tsiplakou, Loannidou, and Hajioannou 2018). The current study results, though preliminary, reveal that explicit knowledge and awareness of diglossia contributes significantly to success in Arabic learning at 5th and 6th grade levels. That is, for students who attend a schooling system that does not engage in explicit teaching of diglossic knowledge and awareness, students' success was related to the extent to which they were aware of the defining features of diglossia. For this group of 5th and 6th graders, differences in explicit knowledge and awareness of diglossia accounted for much of the variance in their Arabic reading and writing abilities and success. This study shows that in addition to the already identified universal skills related to Arabic literacy attainment (Saiegh-Haddad 2018; Tibi and Kirby 2019), an additional robust relationship exists between children's explicit knowledge and awareness of diglossia and their success in learning to read and write in diglossic contexts such as in Arabic. The nature of this relationship requires further investigation to understand fully its ramification for clinical and educational practices. This is specifically critical given the preliminary results showing that the contribution of shared phonological awareness exceeded the non-shared phonological awareness for the fifth and sixth graders Arabic reading scores in this study and was evident for predicting math scores too. Much of the research in emergent literacy focused on non-shared phonological awareness in early stages of learning to read and the findings of this study highlight the need to address explicit awareness to diglossia and phonological awareness at later stages. Such investigations are needed to fill in the gap that has been overlooked likely due to research focus on universal skills for learning to read and write trending in investigations of dominantly studied languages like Standard English. The documented marginalisation of language variation in the general studies of language and literacy skills is a likely contributing factor to such oversight; however, a redirection of research to include more diverse and common language and literacy learning contexts can help to inform the field and can help to address the achievement gaps in cases of oral-literacy mismatch situations (e.g. Labov 2003; Snell and Andrews 2018).

Further research in this domain is valuable at the level of conceptual and basic underlying principles, since it requires a fundamental shift in perspective whereby the two language varieties are equally valued conceptually and the active role of the students growing up in diglossic communities is underscored as part of successful language and literacy learning in their specific sociolinguistic situation. This shift is critical to complement current work focused on identifying the markers for success in learning to read and write in standard language varieties, such as the work on phonological awareness of shared and non-shared phonemes in Arabic or on dialect density in African American English speech communities. Without this complementary approach, such work may implicitly and unintentionally function to maintain accessibility barriers within educational systems that idealise Eurocentric pedagogical approaches. Social justice issues underpin the achievement gap evident for many students in diglossic communities and, at the systems level, the lack of preparation of educational systems to serve non-mainstream dialect speakers. Focusing on the individual challenges while neglecting the role of educational and social systems in the learning attainment of children from minoritisised communities is evident in several assessment and intervention plans in early intervention (e.g. Garcia 2019) and only hinders the development of high quality services and the depth and breadth of language and literacy research in these populations. Explicit diglossic awareness is an essential measure of children's abilities, that may less disenfranchise spoken language varieties and methodologically treat the two language varieties as equal. Moreover, the utilised explicit awareness measure impose no implicit expectation for children to cease using their home language variety to achieve academic success and synchronises the lived experiences at homes and schools for children growing up in bidialectal /diglossic communities. This is critical in light of the potential decontextualisation effects documented in studies of African American children who are taught in Standard American English (SAE) when their mother tongue is African American English (Dyson, 1993, 1997).

The present study is the first to examine the contribution of explicit awareness to diglossia along with phonological awareness to success in learning Arabic for 5th-6th graders with no documented learning difficulties. Using hierarchical regression analysis, a statistically significant contribution of EKAD was found. These results are consistent with research highlighting the critical role of diglossic knowledge and awareness for academic success in diglossic communities (e.g. Khamis-Dakwar and Makhoul 2014; Makhoul, Copti-Mshael, and Khamis-Dakwar 2015; Pearson, Conner, and Jackson 2013; Devereaux and Palmer 2019; Tsiplakou, Loannidou, and Hajioannou 2018) and indicate that children's learning success within diglossic/bidialectal communities, like most Arabic-speaking communities, is predicted by children's level of explicit knowledge and awareness to diglossia as examined using the EKAD subtest within the ADAT assessment. At present, no standardised, large scale, systematic assessments exist to evaluate these skills for persons across various diglossic contexts. Measures are rendered invalid when attempting to use translated versions of language for learning tests since they are developed mainly to assess language for learning skills in situations that do not exhibit diglossia. Attempts to adapt assessments to diglossic situations can be prone to difficulties in application and interpretation too and there is a dearth of assessments specifically designed for language evaluation in diglossia. We argue that failing to evaluate diglossic knowledge and awareness for Arabic-speaking children learning to read and write in a diglossic context likely leads to only partial understanding of the child's language skills and profile, and could also lead to biased evaluation at its core, since this approach overlooks the already documented interactions between diglossia, language acquisition, literacy development and learning (Khamis-Dakwar and Froud 2019).

The ADAT was developed to assess the early stages of language learning (Khamis-Dakwar and Makhoul 2014). Participants' responses to the ADAT subtests in this study show that children at advanced stages of learning show variable performances on most tasks, though some reflect high levels of mastery with minimum variance (such as paragraph comprehension and lexical association). The skewness results for children's performances on the ADAT showed a moderate-high negative skew for all subtests, except the EKAD and non-shared phonological awareness subtests.

These results suggest that 5th-6th graders show ceiling effects on shared and non-shared grammaticality judgment tasks, meta-lexical awareness tasks, and comprehension of simple paragraphs in their spoken dialect and standard Arabic, as well as phonological awareness to shared phonemes. However, a more symmetric distribution is observed for the age/grade appropriate tasks tapping still-developing skills: i.e. the non-shared phonological awareness task and EKAD. These findings are consistent with reports from other studies examining stages in Arabic language development (Khamis-Dakwar, Froud, and Gordon 2012; Khamis-Dakwar and Makhoul 2014; Leitkin, Ibrahim, and Eghbaria 2013; Ravid, Naoum, and Nasser 2014; Schiff and Saiegh-Haddad 2018). We are working on a future adaptation of the ADAT for older children, which will include a rubric for calculation of dialect density in story retell or paragraph reading tasks (e.g. Freitag and Sá 2019), a translation task, and expanded diglossic lexical and morphological association tasks. The plan is to provide two ADAT tests: the ADAT-ELS (Early Learning Stages) for children aged 5–9 years, which includes the original ADAT subtests plus modified versions of the lexical awareness and paragraph comprehension tasks; and the ADAT-ALS (Advanced Learning Stages), which will include EKAD, selected phonological awareness and lexical association items, and new tasks specific for later learning stages including translation, dialect density, and more developmentally appropriate paragraphs.

Because EKAD is understudied in language and literacy development in diglossic/bidialectal communities, it is absent from the discussions related to educational and clinical assessment and intervention resources. For example, the latest Programme for International Student Assessment (PISA) results (OECD 2018) in the state of Israel showed a growing gap between the educational skills of Arabic-speaking and Hebrew-speaking students in reading, mathematics, and science. In reading, Arabic-speaking 15- year-old students in Israel scored 362 compared to the score of 506 attained by their Hebrew-speaking peers. Most of the discussions in relation to this growing gap in achievement focused on standardising the curriculum, standardised assessments in schools, and the underdeveloped Arab educational system in light of the documented discrimination against the Palestinian minority who are citizens of Israel (for a review of the educational system for the Palestinian minority in Israel see Amara, 2018). Less discussion focused on issues such as the appropriateness of the whole language approach adopted for teaching reading in Hebrew and its use for Arabic teaching in light of Arabic diglossia, the potential negative effects of diglossia combined with an underdeveloped educational system, the effects of poverty and low socioeconomic status, and other potential intervening factors

Overall, these documented gaps in educational attainment, coupled with a growing understanding of the role of diglossia in language and literacy development in diglossic communities, necessitate the assessment of EKAD skills in educational and clinical practices. This assessment should be implemented with the intent to further understand the development of EKAD in different learning contexts in neurotypical children, children at risk, or children who have learning disabilities, at different ages and stages of their Arabic learning. Based on such understanding, we can more effectively develop evidence-based culturally and linguistically sensitive educational curricula and clinical protocols to facilitate critical skills for academic success in diglossic contexts. We argue that, given the documented failure of current curricular offerings, growing evidence for the role of diglossic in language and literacy development, and the commitment to equity and quality education for all children no matter their ethnic background, embarking on further research into this domain is not only a worthwhile project of inquiry but an ethical obligation for the scholarly community.

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References

Abu-Rabia, S., D. Share, and M. Mansour. 2003. "Word Recognition and Basic Cognitive Processes Among Reading-Disabled and Normal Readers in Arabic." *Reading and Writing* 16: 423–442.

Abu Ahmad, H., R. Ibrahim, and D. L. Share. 2014. "Cognitive Predictors of Early Reading Ability in Arabic: A Longitudinal Study from Kindergarten to Grade 2." In *Handbook of Arabic Literacy*, edited by E. Saiegh-Haddad and R. Joshi, 171–194. New York: Springer.

Amara, M. 2018. *Arabic in Israel: Language, Identity, and Conflict*. London: Routledge.

Boudelaa, S., and W. D. Marslen-Wilson. 2004a. "Abstract Morphemes and Lexical Representation: The CV-Skeleton in Arabic." *Cognition* 92 (3): 271–303.

Boudelaa, S., and W. D. Marslen-Wilson. 2004b. "Allomorphic Variation in Arabic: Consequences for Lexical Processing and Lexical Architecture." *Brain and Language* 90: 106–116.

Devereaux, M. D., and C. C. Palmer. 2019. *Teaching Language Variation in the Classroom: Strategies and Models from Teachers and Linguistic*. Oxford: Blackwell Routledge.

Dyson, A. H. 1993. *Social Worlds of Children Learning to Write in an Urban Primary School*. Language and Literacy Series. Teachers College Press.

Dyson, A. H. 1997. *Writing Superheroes: Contemporary Childhood, Popular Culture, and Classroom Literacy*. Teachers College Press.

Ferguson, C. 1959. "Diglossia." *Word* 15: 325–340.

Freitag, R. M., and J. Sá. 2019. "Reading Aloud: Linguistic Variation and the Success in Reading Early Learning." *Florianópolis* 72 (3): 41–62.

Garcia, O. 2019. "Expanding Language and Ability Difference: A Foreword." In *Language, Culture, and Diversity: Challenges in American Society*, edited by E. Ijalba, P. Velasco, and C. Crowley, 207–226. Cambridge: Cambridge University Press.

Grohmann, K. K., M. Kambanaros, E. Leivada, and C. Rowe. 2016. "A Developmental Approach to Diglossia: Bilectalism on a Gradient Scale of Linguality." *Poznań Studies in Contemporary Linguistics* 52 (4): 629–662.

Hamdan, J. M., and M. Amayreh. 2007. "Consonant Profile of Arabic-Speaking School-age Children in Jordan." *Folia Phoniatrica Logopaedica* 59: 55–64.

Khamis-Dakwar, R. 2019. "Diglossia." In *The SAGE Encyclopedia of Human Communication Sciences and Disorders*, edited by J. S. Damico, and M. J. Ball, 603–604. Thousand Oaks: SAGE Publications.

Khamis-Dakwar, R. 2021. *Decolonizing Research on Arabic Diglossia: Intricacies and Possibilities*. Invited presentation at the Experimental Arabic Linguistics Conference (EXAL) 2021 organized by Consulate General of the Republic of Korea in Dubai (via Zoom), April.

Khamis-Dakwar, R., and K. Froud. 2019. "Diglossia and Language Development." In *The Routledge Handbook of Arabic Sociolinguistics*, edited by E. Al-Wer, and U. Horesh, 300–313. Oxford: Blackwell Routledge.

Khamis-Dakwar, R., K. Froud, and P. Gordon. 2012. "Acquiring Diglossia: Mutual Influences of Formal and Colloquial Arabic on Children's Grammaticality Judgments." *Journal of Child Language* 39: 1–29.

Khamis-Dakwar, R., K. Froud, C. Tubbs Dolan, and C. Westrope. in press. "Assessing Diglossic Knowledge and Awareness in Language and Literacy: Pilot Results from the Whole of Syria Project." In *Springer Handbook of Literacy in Diglossia and Dialectal Contexts*, edited by E. Saeigh-Haddad, and C. McBride. New York: Springer.

Khamis-Dakwar, R., and B. S. Makhoul. 2014. "Arabic Diglossia and its Implications for Language Learning Disability Assessment." In *Handbook of Arabic Literacy: Insights and Perspectives*, edited by Saeigh Haddad, and M. Joshi, 279–303. New York: Springer.

Labov, W. 2003. "When Ordinary Children Fail to Read." *Reading Research Quarterly* 38 (1): 128–131.

Leitkin, M., R. Ibrahim, and H. Eghbaria. 2013. "The Influence of Diglossia in Arabic on Narrative Ability: Evidence from Analysis of the Linguistic and Narrative Structure of Discourse among pre-School Children." *Reading and Writing* 27: 733–747.

Makhoul, B., Th Copti-Mshael, and R. Khamis-Dakwar. 2015. "The Development of Sociolinguistic Diglossic Knowledge in Oral-Literacy Mismatch Situations: Preliminary Findings from Palestinian Arabs." *Psychology (savannah, Ga)* 6 (9): 1168–1179.

OECD. 2018. PISA Student Performances (2018) in the State of Israel. https://gpseducation.oecd.org/CountryProfile?primaryCountry = ISR.

Pearson, B. Z., T. Conner, and Janice E. Jackson. 2013. "Removing Obstacles for African American English Speaking Children Through Greater Understanding of Language Difference." *Developmental Psychology* 49: 31–44.
Puranik, C., L. Branum-Martin, and J. A. Washington. 2019. "The Relation Between Dialect Density and the co-Development of Writing and Reading in African American Children." *Child Development* 91: 4.
Ravid, D., D. Naoum, and S. Nasser. 2014. "Narrative Development in Arabic: Story Retelling." In *Handbook of Arabic Literacy: Insights and Perspectives*, edited by E. Saeigh-Haddad, and M. Joshi, 153–171. New York: Springer.
Saeigh-Haddad, E., and M. Joshi. 2014. *Handbook of Arabic Literacy: Insights and Perspectives*. New York: Springer.
Saiegh-Haddad, E. 2003. "Linguistic Distance and Initial Reading Acquisition: The Case of Arabic Diglossia." *Applied Psycholinguistics* 24: 115–135.
Saiegh-Haddad, E. 2004. "The Impact of Phonemic and Lexical Distance on the Phonological Analysis of Words and Pseudowords in a Diglossic Context." *Applied Psycholinguistics* 25: 495–512.
Saiegh-Haddad, E. 2018. "MAWRID: A Model of Arabic Word Reading in Development." *Journal of Learning Disabilities* 51 (5): 454-462.
Saiegh-Haddad, E., and L. Haj. 2018. "Does Phonological Distance Impact Quality of Phonological Representations? Evidence from Arabic Diglossia." *Journal of Child Language* 45 (6): 1377–1399. doi:10.1017/S0305000918000302.
Saiegh-Haddad, E., I. Levin, N. Hende, and M. Ziv. 2011. "The Linguistic Affiliation Constraint and Phoneme Recognition in Diglossic Arabic." *Journal of Child Language* 38: 297–315.
Schiff, R., and E. Saiegh-Haddad. 2018. "Development and Relationships Between Phonological Awareness, Morphological Awareness and Word Reading in Spoken and Standard Arabic." *Frontiers in Psychology* 9 (356): 1–13. eCollection 2018.
Snell, J., and R. Andrews. 2018. "To What Extent Does a Regional Dialect and Accent Impact on the Development of Reading and Writing Skills?" *Cambridge Journal of Education* 47 (3): 297–313.
Tibi, S., and J. R. Kirby. 2019. "Reading in Arabic: How Well Does the Standard Model Apply?" *Journal of Speech, Language, and Hearing Research* 62 (4): 993–1014. https://doi.org/10.1044/2019_JSLHR-L-18-0193.
Tsiplakou, S., E. Loannidou, and X. Hajioannou. 2018. "Capitalizing on Linguistic Variation in Greek Cypriot Education." *Linguistics and Education* 45: 62–71.
Washington, J. A., L. Branum-Martin, R. Lee-James, and C. Sun. 2019. "Reading and Language Performance of low-Income, African American Boys in Grades 1-5." *Reading and Writing Quarterly* 35 (1): 42–64.

Appendix A: EKAD subtest

	Question	NA/0	1	2
Definition	Q1 Do you know that in Arabic there is a fusha and ammiya, what are these two?	No answer/ unable to explain about fusha or ammiya	Explains about one variety and its use	Explains about the context of use of the two varieties OR the interrelationship between fusha and ammiya
	Q2: When do we use each one of those? can you give me an example of when do you use fusha and when do you use ammiya	Does not know when the two varieties are used	Explains the contexts of use for one variety only OR provides only examples but does not explain relationship	Explains the contexts of use for the two varieties with/without examples
Interrelationship	Q3: Is there any differences between these two languages? Can you give some examples?,	The child does not know there are differences between the two varieties	The child talks about the differences or provided example/s of the differences	The child knows the differences between the two varieties with examples
	Q4: Are there any common things between the two languages? Can you give me some examples?	The child does not report knowing there are similarities between the two varieties	The child talks about the similarities or provides example of the similarities	The child knows the similarities between the two varieties with examples
Text Knowledge	Q5 Which texts do you like to read? If the child is unable to name favourite text types, prompt him/her as follows: Do you like reading stories, scientific articles, or poems	The child does not identify favourite text types of text after explanation provided	The child knows which type of texts he likes only with prompting	The child knows exactly which type of texts he/she likes
Awareness to cognitive processes	Q6 Do you at times feel it's hard for you to understand fusha? If the child reports it's hard for him/her to understand fusha – ask the following: Is it harder for you when you hear it or when you read it	The child reports awareness to the challenges processing fusha but reports good ability to using it	The child reports difficulty understanding fusha with awareness to challenges in processing it in light of diglossia	The child reports no challenges with no awareness to the potential effects of diglossia
	Q7: Do you like writing in fusha or just speaking it,	None	Writing OR Speaking	Both
	Q8: When you are about to write about a specific topic, do you think about the topic in fusha and write it directly in fusha or do you think about the topic first in ammiya and later writing it in	Thinks in ammiya and writes in ammiya OR Cannit write in fusha OR unaware of the processing involved in writing fusha	Thinks in ammiya and then writes it down in fusha	Thinks and writes directly in fusha