

Introduction to the special issue on literacy in Arabic

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The special issue

The aim of this special issue is to contribute to our understanding of the acquisition of literacy in Arabic. It provides a basis on which to consider some of the specific issues about Arabic that have interested literacy researchers and which may inform further work in this area. The papers focus mainly on the less-studied period of early literacy development, from kindergarten to grade 3, and, therefore, should contribute to our understanding of this initial, and potentially critical, period of development amongst Arabic learners. Data from these papers should inform theories focusing on the processes that underlie literacy acquisition, for example. This should be both specific to Arabic, but also should inform more general theories of reading and writing across languages. In addition, the papers include work on spelling, of which there are far fewer studies than on Arabic reading acquisition. Therefore, the special issue should provide a basis on which to understand work in Arabic and also advance our knowledge about this relatively sparsely studied orthography.

Studying literacy acquisition/processes in Arabic can be argued to be important for research and theory in general due to the unique characteristics of the Arabic language and its orthography. The papers in this special issue focus on three general areas, and the aim of this introduction is to provide some background details (and research data) on which to support the reader's understanding of these areas, particularly in terms of these unique characteristics. The three areas of focus in the present papers can be considered to relate to (1) language processes (particularly

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cross-language influences), (2) phonological processes, and (3) orthographic processes. These are not new areas in reading research; however, studies of Arabic should provide data on which to improve our understanding of the relationship between these processes that data in other languages, particularly English, may not. Share (2008) has argued that English, on which most theories of literacy development have been based, is a somewhat atypical orthography and, therefore, research in alternative languages is necessary to support the generalization of theories beyond the English language context. Arabic also has its somewhat unique characteristics. However, the differences, and similarities, between the English and Arabic orthographies make Arabic an interesting language to consider in this respect. For example, although both developed from common (alphabetic-based) origins, they use different letter characters (and the use of dots and diacritics may make Arabic a highly visually complex orthography to learn) and a different direction of writing (Arabic is written right to left); although both are based on the alphabetic principle, they show varying relationships between letters and sounds. Similarly, although both require a certain amount of context to support word identification in many written texts, the point in literacy development at which this becomes necessary varies across the two languages. Related to these latter points, Arabic can be considered to have two orthographic forms: one of which is relatively shallow whereas the other is much less transparent (see below). Therefore, research on Arabic should inform theories on the basic processes necessary for successful literacy learning. The present introduction starts with some background details to the Arabic language and its orthography before focusing on language, phonological and orthographic processing.

Background to the Arabic language and writing system

Arabic is spoken as a first language by over 200 million speakers, mostly in the Middle East and North Africa, and ranks fifth¹ in the world in terms of the number of native speakers. In addition, Arabic is used by millions of people as an additional language, mainly in the Muslim world, because it is the language of the Quran, the holy book of Islam. Arabic belongs to the Semitic group of languages and, therefore, shows a reasonable degree of similarity of structure in phonology and morphology with the other languages in this family. Other living languages of this group are Modern Hebrew, Amharic and other spoken languages of Ethiopia, Aramaic dialects current in parts of Syria and Iraq, and Maltese. This group has a long history and original prototype versions of Semitic have been traced back to the 6th/8th millennia BC. The Arabic script also has a long history, evolving from Nabataean and Aramaic, and along with other Semitic languages, Arabic is written from right to left. Apart from its use in representing the Arabic language, it is used, with some variations, for writing several other languages, such as Kurdish, Persian, Pushto, Sindhi and Urdu. Despite its huge importance as a language of literacy for many people, Arabic has been relatively under-researched compared to other major

¹ (http://www.ethnologue.com/ethno_docs/distribution.asp?by=size) accessed on December 2010.

languages, especially in terms of its relation to literacy development and literacy-related difficulties (see, for example, reviews in Elbeheri, Mahfoudhi, & Everatt, 2009; Mahfoudhi, Elbeheri, & Everatt, 2009).

Arabic, with its 28-letter alphabet and 34 phonemes, has been considered a shallow orthography. This refers to the relative ease of deriving phonology from orthography due to the near one-to-one association between letters and sounds. Shallow orthographies also are often referred to as transparent or as high in orthographic transparency—again the analogy is akin to seeing the language through the orthography. In contrast, an opaque (sometimes also referred to as a deep) orthography such as English has a less obvious/reliable correspondence between written letters (graphemes) and language sounds (phonemes). The close correspondence between phonemes and graphemes is an important feature of the Arabic orthography and one that is expected to have an impact on the accuracy of single word decoding among Arabic speakers. However, short vowels are not regarded as independent graphemes in written Arabic, but are represented as extra diacritical markings which are only present in religious texts, children's books, textbooks for foreign learners and in otherwise fully vowelized texts. Normal texts read by most older children and adults do not include these diacritical markings. Accordingly, a large number of Arabic words that appear in non-vowelized text are homographic when presented out of context. This means that the reader will have to depend more on context to support word processing. In effect, Arabic has two scripts: a shallow one when diacritical marks are used in the text and a deep (or opaque) one when they are not. The linguistic situation and its relation to literacy is also unique. The spoken variety is different in many aspects from the written variety. This situation, known as diglossia, is discussed in detail in the following section in relation to the relevant papers in this issue.

Language factors

In Tahan, Cline and Messaoud-Galusi and Allaith and Joshi, both Arabic and English were the focus of research. Tahan, Cline and Messaoud-Galusi consider the influence of language competence in one or both languages amongst bilingual learners within an Arabic cultural/language dominant context (in Egypt). The relative level of competence in the two languages is investigated to assess its potential influence on basic early processes (phonological and visual/orthographic) considered to influence literacy development. In contrast, Allaith and Joshi focus much more on cross-language influences and phonological information in one language (Arabic) may affect literacy development (in this case in spelling) in the other (English) amongst children in grades 4–10 in Bahrain.

There is a great deal of interest in first and second language issues in research undertaken in the Arab world (as evidenced by half of the papers in this special issue). The main focus of much of this work is on the cross-language influences of, mainly, Arabic and English (though there has also been work on Arabic and Hebrew): whether skills developed in one language, or features of a first language, might support or hinder acquisition in a second. Therefore, much of this work would

be familiar to those working in second language literacy acquisition—and the two papers on Arabic and English included in this special issue fall within this general focus. However, the unique aspects of Arabic may make this particularly interesting language to study in this context. The different features of Arabic compared to English allow an assessment of influence across diverse characteristics. The focus of Allaith and Joshi's paper is the sounds (phonemic inventory) within the two languages and, therefore, there is a good introduction to these differences in their paper. However, there are other factors that are worthy of consideration, such as the focus on morphological features of the Arabic language which extends to the Arabic orthography, despite the potentially high level of symbol-sound correspondence between orthography and language (see review in Mahfoudhi, Elbeheri, Al-Rashidi, & Everatt, 2010). Further research is needed to determine whether morphological awareness is more important in Arabic literacy learning compared to other languages, such as English, as well as its role in both typical development and those presenting evidence of specific difficulties in literacy acquisition.

As mentioned above, another, and somewhat under-studied feature of the Arabic language context, is that of diglossia. Diglossia here refers to the use within a community of two varieties of the language for different purposes. The first variety, the vernacular/spoken Arabic, is used in everyday speech and is the mother language of the Arabic-speaking child. It is one of many dialects of Arabic and may be spoken across a whole country or within a specific region. The second variety, Modern Standard Arabic (MSA), is the prestigious form of the language that is used in education and the media in both writing and speaking. MSA is the more preserved version of Classical Arabic and is different from the spoken dialects in lexical items, phonology, morphology, and syntax. Typically, MSA is not used by children until they attend school (exceptions may be in cartoons and nursery songs or as part of experiences with media/entertainment), therefore acquiring literacy has been seen as akin to acquiring a second language (Ayari, 1996; Ibrahim & Aharon-Peretz, 2005; Saiegh-Haddad, 2007). Hence, Arabic has a somewhat unusual feature of two forms of the same basic language, one of which the child will experience as a purely verbal form and prior to schooling, the other which will be primarily a tool for education and on which the written form is based. Some sounds and morphological/syntactic forms experienced pre-school, therefore, may not necessarily support literacy development. For example, in research contrasting the processing of common and unique phonemes within local dialects and MSA, Saiegh-Haddad (2007) has argued that the difference between the pre-school spoken and the written language disrupts the construction of phonological representations of MSA. This may lead to less reliance on such phonological representations to support literacy acquisition than might be expected and, hence, to the use of alternative processes in word recognition. Indeed, Saiegh-Haddad (2005) found that, even amongst grade 1 children, phonological awareness was only indirectly related to reading fluency in contrast to measures that focus more on a direct route to lexical access; as such, focusing on salient orthographic features may be a more important strategy to learn than the relationship between graphemes and phonemes. This feature of Arabic (i.e., the impact of two related but different language forms) and

its influence on literacy acquisition has not been given the research interest that it might deserve.

Phonological processes

In Taibah and Haynes, aspects of the phonology of Arabic and its influence on early literacy skills are the primary focus, though both Tahan, Cline and Messaoud-Galusi and Allaith and Joshi also consider phonological processes and influences in their papers. The studies of both Taibah and Haynes and Tahan, Cline and Messaoud-Galusi investigate skills that have developed early in literacy development. The paper of Taibah and Haynes finds that phonological awareness, in contrast to other verbal processing skills such as rapid naming and phonological memory, has a strong influence on early Arabic literacy skills, whereas both Tahan, Cline and Messaoud-Galusi and Allaith and Joshi focus on how language background may influence phonological processes and hence literacy. The assumption here is that these phonological skills are important in literacy development; an assumption that has been confirmed in research on Arabic in a number of studies. Taibah and Haynes's work confirms the potential importance of phonological awareness on literacy development in a Kindergarten group (in Saudi Arabia), a population that has rarely been studied in Arabic language/literacy research. Overall, then, such work confirms the relationship between phonological processing, particularly phonological awareness and literacy development. However, there is evidence in the literature, including inconsistencies in the level of relationship between phonological measures and Arabic literacy (see Elbeheri, Everatt, Reid, & Al-Mannai, 2006), that are worthy of further consideration and for which additional research is necessary to explain.

Phonological processes are those involved in the identification, storage, manipulation and production of sound forms. Such processes may be critical in the ability to translate a written letter string into an appropriate pronunciation (see Goulandris, 2003; Snowling, 2000; Stanovich, 1988). Given this, it is hardly surprising to find that investigations of phonological processing and its role in reading development, have been a focus for many studies looking at the relationship between language and literacy, including those investigating Arabic literacy development. Consistent with the importance of phonological processing in literacy development, many have found that phonological measures (when applied in the standard variety, i.e., the variety learned at school) are related to reading and spelling skills in Arabic (see Abu-Rabia, Share, & Mansour, 2003; Al-Mannai & Everatt, 2005; Elbeheri & Everatt, 2007). However, Elbeheri et al. (2006) also argue that further research is necessary to allow firm conclusions to be made given that variations from predictions based on English language models have been identified. Elbeheri et al. reasoned that these differences in findings may be as related to specific orthographic and/or morphological features of Arabic. What is clear is that phonological processing does play a part in Arabic literacy acquisition; however, further research is necessary to determine specifically the influence of phonology

both of the spoken variety and the standard variety in relation to orthographic, and possible morphological, processing.

Orthographic influences

Both Tahan, Cline and Messaoud-Galusi and Mohamed, Elbert and Landerl consider the traditionally opposite area of processing to language/phonological processing in reading research, that of visual processing. In Tahan, Cline and Messaoud-Galusi, this is considered in a similar light to phonological skills: i.e., the influence of language on visual or orthographic processing. In Mohamed, Elbert and Landerl, the focus is on a measure of visual processing skills predicting literacy levels. Both papers focus on early readers/spellers (Tahan, Cline & Messaoud-Galusi on children in Kindergarten and Mohamed, Elbert & Landerl on children in the first three grades of school in Egypt), allowing conclusions to be derived about the early processes involved in literacy acquisition. The latter study argues for visual skills to be related to literacy performance and the former found evidence to suggest that Arabic has a complex orthography (at least compared to English). Both of these findings are consistent with previous work in Arabic; though they confirm the findings within new populations.

One reason why visual or orthographic processes may be important in Arabic is the potential complexity of the orthography. For example, vowelization has been argued to have a positive effect on reading in Arabic (e.g., Abu-Rabia, 1999, 2001); however, the use of diacritical marks may have negative effects by increasing the complexity of the visual representation of words within text. Indeed, a number of studies have investigated the graphic characters of the Arabic script and concluded that they constitute a specific challenge to Arabic readers, particularly in terms of the ability of the reader to distinguish individual letters. For example, work by Ibrahim, Eviatar and Aharon-Peretz (2002) found that Arabic-Israeli participants were slower in processing Arabic letters than Hebrew letters, despite the fact that Arabic was the first language of the individuals tested. These researchers have concluded that such effects are due to the complexity of Arabic script compared to the Hebrew script. Consistent with the importance of orthographic processing in Arabic, measures that require this type of processing have been found to be predictive of Arabic literacy levels. For example, Elbeheri, Everatt, Mahfoudhi, Abu-Diyar and Taibah's (in press) orthographic measure predicted variability in the comprehension fluency over-and-above that predicted by phonological measures in older mainstream children (grades 4 and 5) but not in the younger grades (2 and 3). This influence may not be due simply to greater literacy exposure since children with literacy learning problems (dyslexia) also show this influence of orthography (see also Elbeheri & Everatt, 2007). The finding that the influence of orthographic processing is explained by phonological processing measures in the younger cohort but not in the older groups is consistent with several models of reading acquisition that were developed for orthographies other than Arabic. For example, the work of Badian (1995) argues for an initial influence of phonology on reading development followed by an emerging influence of orthographic processing. Share (1995) also

has proposed that reading development progresses from greater reliance on phonological decoding skills to more reliance on orthographic decoding skills as the reader becomes more competent.

Clearly, the findings of Elbeheri et al. (in press) may be due to a normal developmental process whereby orthographic processing is dependent on a certain level of phonological skill: i.e., once phonological decoding is reliable, an orthographic lexicon can be developed and units within that lexicon specified. Alternatively, grade 3 or 4 is the point when these Arabic children are likely to experience text that is non-vowelized and it may be that this leads to more dependency on orthographic processing over phonological decoding; hence, when non-vowelized text is the dominant form, the better reader is the one with additional reading skills to those associated with a phonological decoding strategy. As indicated in previous sections of the introduction, further research on the influence of vowelization (and its related aspects of phonology and orthography) on Arabic would inform theories of literacy development in this language as well as views about the processes involved in reading and writing across different orthographies.

Final comments

The reader will note that the factors studied in research on Arabic should be familiar to many working in other languages. However, it is hoped that this special issue will be informative about some of the unique elements about Arabic that make it an interesting language/orthography to investigate; not only to inform practice in the teaching of Arabic reading and writing skills, but also to increase our theoretical understanding about literacy across languages. Therefore, we trust that the reader will find the contents of this issue both stimulating and informative, and we thank the authors for their contributions as well as the many reviewers for their hard work.

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