



Regular Article

A systematic review of teaching and learning in the context of Arabic diglossia

Hanada Taha Thomure^{a,*}, Haitham Taha^{a,b}, Taline Sabella^c, Rabab Saleh^a^a Zai Arabic Research Center, Zayed University, Dubai, United Arab Emirates^b Western Galilee College, Israel^c Queen Rania Foundation, Amman, Jordan

ARTICLE INFO

Keywords:

Systematic review
 Arabic
 Diglossia
 Curriculum design
 Language policy
 Bidialectalism

ABSTRACT

Arabic is a diglossic language in which standard Arabic coexists with diverse spoken varieties, posing distinct challenges for language acquisition and instruction. Understanding how this context shapes bib_miseles_1980 educational outcomes is essential for improving Arabic language teaching and learning. Following PRISMA guidelines, we searched eight education and social science databases, and relevant grey literature (1970–2021), screening 927 Arabic and English records and including 101 studies. Descriptive review synthesis identified five recurring themes: Diglossic distance, achievement gap, prestige and attitudes, policy, and exposure to Standard Arabic, including parental engagement. Recommendations relevant for educators, policymakers, and researchers include curriculum strategies include integrating simplified standard Arabic in early childhood education, applying evidence-based methods in teacher training and professional development, and expanding home-based exposure to Standard Arabic through accessible, engaging resources. The findings highlight the need for research to develop and evaluate pedagogical approaches suited to diglossic contexts.

1. Introduction

Diglossia is a sociolinguistic phenomenon where spoken dialects coexist with a codified linguistic system used in formal communication and written literature (Ferguson, 1959). The Arabic language is often regarded as a classic example of diglossia (Holes, 2004). However, studies considered the linguistic situation in Arabic as a blurred line between a seemingly binary characterization, despite its range of positions and varieties (Badawi, 1973; El-Hassan, 1977). Accordingly, a spectrum framework for conceptualizing language modeling and use in diglossia was proposed (Badawi, 1973; Blanc, 1960; El-Hassan, 1977; Meiseles, 1980). Nevertheless, most existing systematic reviews focus on second or foreign language learners of Arabic. As such, this descriptive review aims to examine studies involving native Arabic-speaking children focusing on the impact of diglossia on educational practices and instructional approaches. These pedagogical dimensions are essential to understanding how diglossia functions as a structural variable in Arabic teaching and learning for native speakers. This systematic descriptive review, to our knowledge, is the first review examining Arabic diglossia and pedagogy. It examines the Arabic and English literature from the

last five decades (1970–2021) to ensure comprehensive coverage and understanding. The identified research gaps will help stakeholders, such as educators, curriculum developers, policymakers, and researchers, bridge disciplinary concerns in sociolinguistics, pedagogy, and language policy.

1.1. Literature review

1.1.1. State of Arabic literacy

For Arab children, formal education begins with the introduction of Modern Standard Arabic (MSA), which differs from the Spoken Arabic (SpA) they get exposed to before school entry (Khamis-Dakwar & Froud, 2019; Taha Thomure et al., 2022). The Progress in International Reading Literacy Study (PIRLS) reports consistently show that all participating Arab countries—including Bahrain, Egypt, Kuwait, Morocco, Oman, Saudi Arabia, Qatar, and the United Arab Emirates—scored below the international benchmark of 500 (Mullis et al., 2017, 2023; Patrinos et al., 2022, pp. 1–31) (See Fig. 1).

* Corresponding author.

E-mail addresses: hanada.thomure@zu.ac.ae (H. Taha Thomure), dr.haithamtaha@gmail.com (H. Taha), tsabella@qrf.org (T. Sabella), rabab.saleh@zu.ac.ae (R. Saleh).

1.1.2. Impact of diglossia on academic achievement and its perception

Several researchers argue that **low academic achievement in Arab countries is a result of Arabic diglossia** (Ayari, 1996; Maamouri, 1998). Moreover, existing research on **emergent literacy skills**, including early reading and writing, suggests that their development may be significantly influenced by **pedagogical factors**, such as **teaching strategies, curriculum quality, and teacher preparation and training** (Taha Thomure et al., 2022). Furthermore, MSA is perceived by adults and communities as a **sacred, prestigious variety**, often associated with the **language of the Qur’an** (Haeri, 2003; Hamzaoui, 2019). This elevated status can create **psychological barriers**, with learners fearing that **imperfect use of MSA** may be viewed as **disrespectful or incorrect**, contributing to **feelings of linguistic inadequacy and emotional distance, further burdening the literacy progress** (Froud & Khamis-Dakwar, 2021; Hamzaoui, 2019; Khamis & Marzouqah, 2022; Khamis-Dakwar et al., 2022; Zughoul, 1980). However, despite the foundational role of MSA in literacy development, **research examining how Arabic diglossia impacts learning and teaching in Arabic, specifically systematic reviews, remains scarce** (Ayari, 1996; Gherwash, 2017; Maamouri, 1998; Saiegh-Haddad et al., 2011).

1.2. Objectives of the review

This systematic review examines how Arabic diglossia is addressed in teaching and learning among native-speaking students, synthesizing empirical and theoretical studies to map study types, contexts, and participant profiles; document instructional strategies and targeted skills; assess adaptations for diglossia in evaluation; and identify conceptualizations, challenges, and pedagogical recommendations. The review generates a thematic synthesis of diglossia’s role across instructional, curricular, and assessment domains.

1.3. Stakeholders

This review informs educators and curriculum developers on instructional and assessment practices for addressing diglossia, supports policymakers in language planning, teacher preparation, and curriculum design, and provides researchers with an overview of literature gaps and future research directions.

2. Methods

This descriptive systematic review adhered to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) Statement (Page et al., 2021) and PRISMA-S search strategy (Rethlefsen et al., 2021).

2.1. Search strategy and databases

A comprehensive literature search was conducted on August 31, 2020. The research team discussed and refined the search terms, with an initial limited search conducted in PubMed to fine-tune the strategy. Keywords and subject headings were identified using a combination of terms from titles, abstracts, and Medical Subject Headings (MeSH) in PubMed. The final strategy was translated across all selected databases. The following databases were included: Linguistic and Language Behavior Abstracts (LLBA), Education Resources Information Center (ERIC), Academic Search Complete, Communication Abstracts, Education Source, ProQuest Dissertations, ProQuest Central, and Web of Science. Backward citation searching was conducted on included studies. Grey literature searching was performed in Google Scholar using variations such as *Arabic diglossia learning* and *Arabic “code switching” education*; the first 5–10 pages of results were screened, excluding Google Books.

2.2. Search terms

Search terms included diglossia, Arabic dialects, language variety vs. standard Arabic, colloquial language, vernacular language, triglossia, Arabic education, pedagogical strategies, Diglossic distance, and related terms in Arabic education contexts. In details, for LLBA and ProQuest the search terms were: MAINSUBJECT (“Arabic”) AND (MAINSUBJECT (“Code Switching”) OR MAINSUBJECT (“Diglossia”)) AND NOT (teach* OR instruct* OR learn* OR school* OR educat* OR classroom OR curricular* OR pedagog* OR laborator* OR program*). For ERIC, the search terms were: arabic AND (digloss* OR “code switch*”) AND (teach* OR instruct* OR learn* OR school* OR educat* OR classroom OR curricular* OR pedagog* OR laborator* OR program*). For Academic Search Complete (EBSCO), the search terms were: arabic AND (digloss* OR “code switch*”) AND (teach* OR instruct* OR learn* OR school* OR educat* OR classroom OR curricular* OR pedagog* OR laborator* OR program*). For Communication Abstracts (EBSCO), the search terms were: arabic AND (digloss* OR “code switch*”) AND (teach* OR instruct* OR learn* OR school* OR educat* OR classroom OR curricular* OR pedagog* OR laborator* OR program*). For Education Sources (EBSCO), the search terms were: arabic AND (digloss* OR “code switch*”) AND (teach* OR instruct* OR learn* OR school* OR educat* OR classroom OR curricular* OR pedagog* OR laborator* OR program*). For Dissertations and Theses Global (ProQuest), the search terms were: noft (arabic) AND noft (diglossia OR “code switch*”) AND noft (teach* OR instruct* OR learn* OR school* OR educat* OR classroom OR curricular* OR pedagog* OR laborator* OR program*). For ProQuest Central (ProQuest), the search terms were: noft (arabic) AND noft (digloss* OR

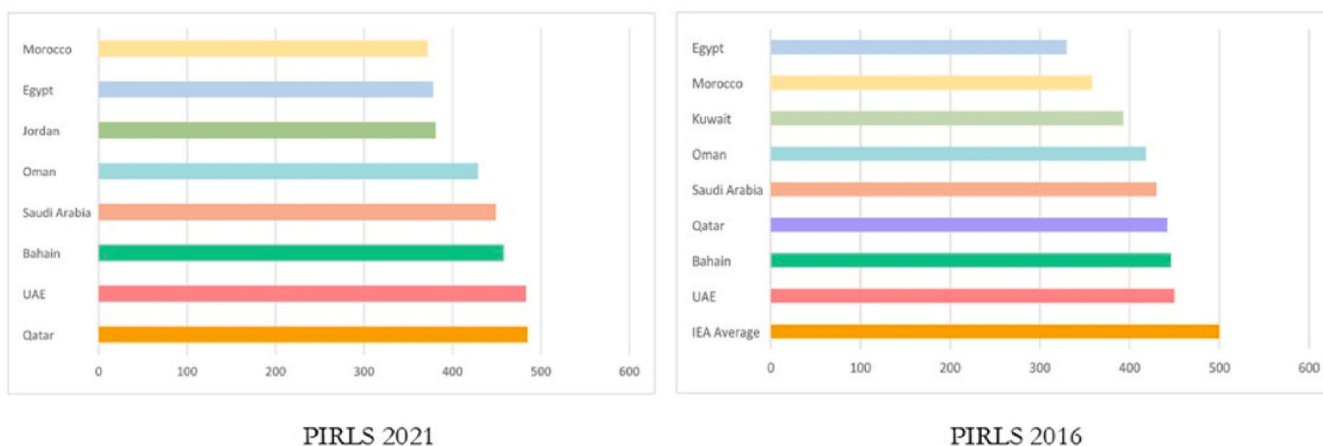


Fig. 1. PIRLS 2021 and PIRLS 2016 results for selected Arab countries. The bar charts display average reading achievement scores across participating countries in 2021 (left) and 2016 (right), benchmarked against the international average (IEA).

“code switch”) AND noft (teach* OR instruct* OR learn* OR school* OR educat* OR classroom OR curricul* OR pedagog* OR laborator* OR program*). For Web of Science (Clarivate), the search terms were: TOPIC: (arabic) AND TOPIC: (digloss* OR “code switch”) AND TOPIC: (teach* OR instruct* OR learn* OR school* OR educat* OR classroom OR curricul* OR pedagog* OR laborator* OR program*) with indexes: SCI-EXPANDED, SSCI, A&HCI, CPCI-S, CPCI-SSH, ESCI. For Google Scholar: A series of searches were run, with variations of arabic diglossia learning, arabic “code switching” education.

2.3. Inclusion and exclusion criteria

The decision to include studies from 1970 onward was based on the emergence of foundational scholarship that critically examined Arabic diglossia in educational settings, including early contrastive analyses of spoken and written varieties and the introduction of the diglossic continuum model (Badawi, 1973). This period also marked a resurgence in Arabic language education efforts following independence movements in the Arab world, which were accompanied by the development of new teaching methodologies and pedagogical tools. The review includes

literature published through 2021, reflecting the period during which the review was conducted.

2.4. Selection procedures

The literature search resulted in 927 studies. 416 records were duplicates, leaving 511 records to be screened. 190 records were excluded through the title and abstract screening process. 321 records remained for retrieval. 42 records were not possible to retrieve. 279 records were assessed for full-text screening (Fig. 2). Two independent reviewers, both trained researchers with expertise in applied linguistics and Arabic language education, screened the titles, abstracts, and full-texts of studies. Disagreements were resolved through discussion and, when necessary, by a third reviewer. The reviewers worked in tandem to evaluate each study based on the presence of key terms such as “Diglossia,” “Arabic Dialects,” and “Language Variety” in relation to the Arabic educational environment. Articles that did not include a pedagogical component, discussion, or provide directions for educational practice were excluded, even if they addressed issues of diglossia and Arabic dialects. As a result, 101 records were included.

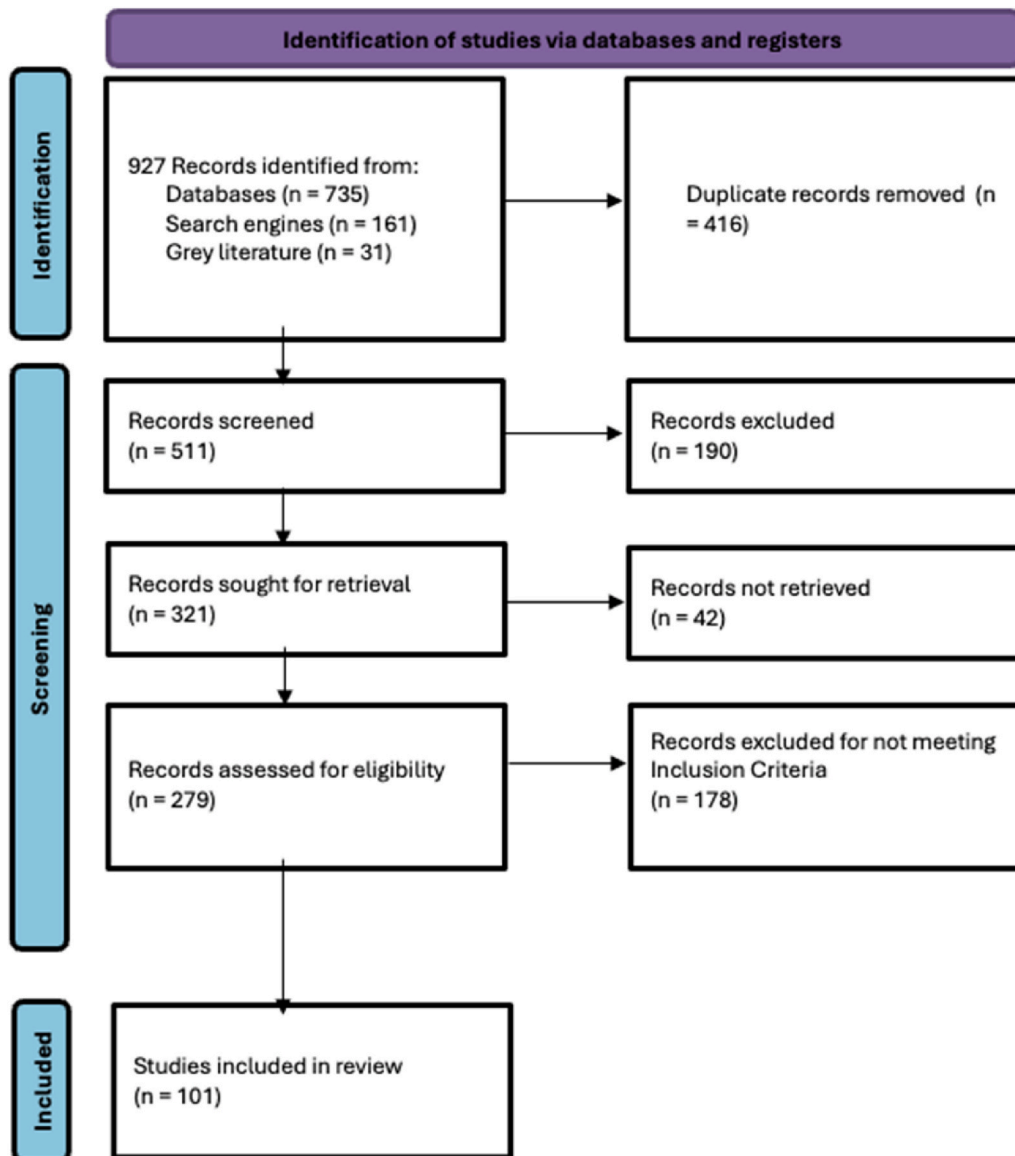


Fig. 2. PRISMA flow diagram of the study selection process. A total of 927 records were identified through databases, search engines, and grey literature. After removal of 416 duplicates and screening of 511 records, 279 full texts were assessed for eligibility, with 101 studies included in the final review.

2.5. Coding the data

A total of 101 articles progressed to the extraction phase, using a structured codebook in Microsoft Excel designed for both qualitative and quantitative analysis. A calibration exercise was conducted on a random sample of 20 articles to ensure consistency. The first three articles were coded collectively as an example. The second round of coding included two researchers who coded the same 20 articles. Then, 15 articles were assigned for each to be done separately. The third session of coding included two researchers, and the 15 articles were reviewed to reach an agreement on all entries. The agreement rate between the two researchers was 95 %. The two researchers then started coding all the remaining articles independently; disagreements were resolved with the help of a third reviewer. The codebook included variables formatted for statistical software (SPSS) to facilitate standardized data handling (e.g., coded categories for study design, participant characteristics, and linguistic variables) (See Supplementary Codebook).

2.6. Qualitative analysis

Once a paper was selected for review, reviewers were prompted to answer open-ended questions in the code book for the descriptive review and the core elements of methodology and pedagogy (See supplementary document). The reviewers deducted themes in the studies that identified a clear connection between the points extracted for these different articles through two rounds of review and one extra round of double coding to ensure 100 % agreement on all codes.

2.7. Quantitative analysis

Due to the descriptive nature of the review no statistical analysis or comparisons were conducted. Closed-ended codes (with predefined categories) were used to generate frequency counts and percentages and results were tabulated (e.g., Tables 1 and 2). Variables pre-coded for SPSS enabled consistent statistical summarization across studies enabling, for example, the generation of the global distribution map of researcher affiliation (See supplementary materials for methods).

3. Results

One hundred and one studies focusing on Arabic diglossia and aspects of teaching and learning were included in the final synthesis of the results. Thirteen studies employed cross-sectional designs, collecting data at a single point in time. In contrast, thirty-one studies used repeated measures or multi-point data collection. Seventeen studies implemented short-term instructional interventions, typically lasting from a single session to a few days. These included brief formats such as 15- to 90-min individual sessions, one-off lessons, and two-week

Table 1
Inclusion and exclusion criteria for studies on Arabic diglossia and education.

Inclusion Criteria	Exclusion Criteria
Studies published or conducted between 1970 and 2021	Studies written in languages other than English or Arabic
Studies addressing Arabic diglossia in relation to education, pedagogy, teaching methods, or learning processes	Opinion articles, blogs, or editorials
Peer-reviewed studies	Studies that did not discuss diglossia in relation to teaching, learning, or pedagogy (including teaching methods, learning processes, or educational practices)
Studies published in English or Arabic	Studies focusing on non-native Arabic speakers
Studies focusing on native speakers of Arabic	

Table 2
Distribution of participant profiles and educational settings across included studies (N = 101).

Participants Profiles	Total (N = 101)	Percentage (100 %)
With Typical Development	81	80.2 %
With Atypical Development	3	2.9 %
Others (combination, missing, unspecified & unreported)	17	16.8 %
Type of Educational Setting	Total (N= 101)	Percentage (100 %)
Pre-K to Elementary only	43	42.5 %
Middle and High School only	10	9.9 %
University Students only	12	11.8 %
Others in an educational setting (including teachers)	12	11.8 %
Across School Ages (Pre-K, elementary, middle and high school)	5	4.9 %
Pre-K to Elementary Students and Teachers	1	0.9 %
Across all ages (K-12 & university level participants)	1	0.9 %
Others (missing, unspecified, unreported, outside formal education)	17	16.8 %

programs. By contrast, six studies adopted longer-term interventions spanning an academic year, and one extended across two full years.

3.1. Participants' profiles

3.1.1. Participant profiles and educational setting

Out of the 101 studies reviewed, the majority (n = 81; 80.2 %) involved participants with typical developmental profiles. Only three studies (n = 3; 3.0 %) focused exclusively on individuals with atypical development. The remaining 17 studies (n = 17; 16.8 %) included mixed populations, did not specify participant developmental status, or did not report it at all. In terms of educational settings, most studies focused on learners in early education: Most studies targeted pre-kindergarten through elementary school (n = 43; 42.6 %). A smaller number focused solely on university students (n = 12; 11.9 %) or middle and high school students (n = 10; 9.9 %). Some studies included other educational participants such as teachers or adult learners (n = 12; 11.9 %). Five studies (n = 5, 5.0 %) spanned multiple schooling stages from pre-K through high school, and two studies (n = 2, 2.0 %) included both student and teacher participants or extended across K-12 and higher education. Seventeen studies (n = 17, 16.8 %) did not clearly report participants' educational level or involved individuals outside formal education systems. (See Table 1).

3.1.2. Regional patterns in the study of Arabic diglossia

Sixty-four studies were conducted by researchers affiliated with institutions outside the Arab world (n = 64; 63.4 %), while thirty-seven were based inside the Arab world (n = 37; 37.7 %). For studies coming from the Arab world, the highest number was from Palestine (n = 10), Algeria (n = 9), and Lebanon (n = 6). On the other hand, countries outside the Arab world, Israel (n = 35), the United States of America (n = 18), and the United Kingdom (n = 5) accounted for most publications. (See Table 3, Fig. 3).

3.2. Themes deducted

We identified five major themes in the reviewed literature: Diglossic distance, achievement gap, prestige and attitudes, policy, and exposure to MSA, including parental engagement. (See Table 3 for an overview).

3.2.1. Diglossic distance between MSA & SpA as barriers for learning

Of 101 studies, forty-six (n = 46; 45.5 %) examined the effect of MSA-SpA Diglossic distance on teaching and learning (Tables 4 and 5). Within this subset, twenty-four (n = 24; 52.17 %) targeted pre-

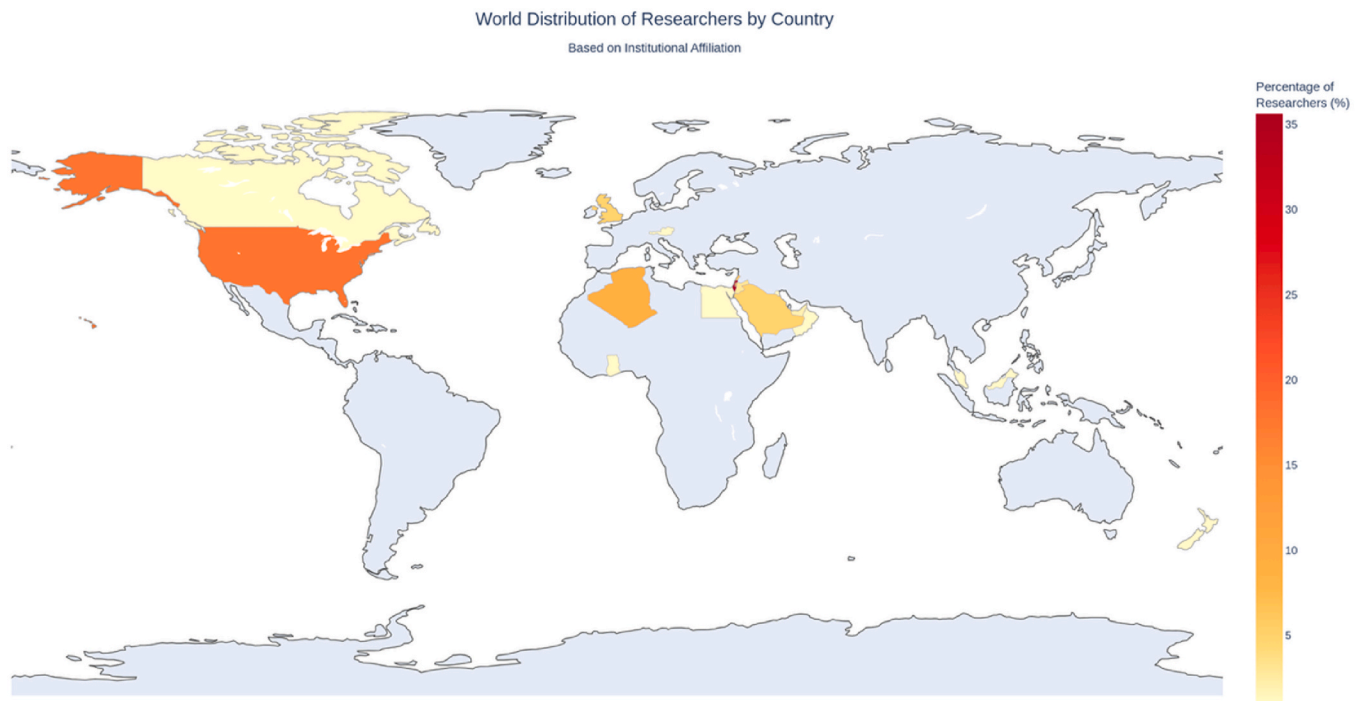


Fig. 3. World heat map showing the global research landscape and distribution of researchers (N = 101) based on institutional affiliation percentages. Countries are color-coded from light yellow (lowest representation, 0.9 %) to dark red (highest representation, 35.6 %). Countries not represented in the dataset are shown in light grey.

Table 3
Distribution of academic affiliation of researchers conducting the studies included in the review.

Institutional Affiliation of Researchers	Total (N = 101)	Percentage (100 %)
Inside the Arab world	N = 37	36.6 %
Palestine	10	9.9 %
Algeria	9	8.9 %
Lebanon	6	5.9 %
Saudi Arabia	5	4.9 %
Jordan	3	2.9 %
UAE	2	1.9 %
Oman	1	0.9 %
Egypt	1	0.9 %
Kuwait	1	0.9 %
Outside the Arab world	N = 64	63.4 %
Israel	36	35.6 %
USA	18	17.8 %
UK	5	4.9 %
Canada	1	0.9 %
New Zealand	1	0.9 %
Austria	1	0.9 %
Malaysia	1	0.9 %
Ghana	1	0.9 %

Table 4
Summary of the five key themes identified across the included studies (N = 101).

Theme No.	Theme Name	No. of Studies	Related Table for detailed references
1	Diglossic distance	46	Table 4
2	Achievement gap	19	Table 5
3	Perception and attitude	15	Table 6
4	Policy	19	Table 7
5	Exposure to MSA, including parental engagement	21	Table 8

K–elementary; thirty-one (n = 31; 67.39 %) covered pre-K–high school overall; two (n = 2; 4.34 %) focused exclusively on middle–high school; and six (n = 6; 13.04 %) examined adult learners in higher education; none included teachers. Domains studied were phonological (n = 16; 34.78 %), lexical (n = 5; 10.87 %), morphosyntax (n = 2; 4.34 %), cognition (n = 1; 2.17 %), and broader diglossic competence (n = 3; 6.52 %). Findings consistently indicated disadvantages for MSA in early literacy: children recognized MSA phonemes less accurately than SpA (Saiegh-Haddad, 2003a; Saiegh-Haddad et al., 2011); first-graders struggled with phonological representations despite mastering the alphabetic principle (Asadi, 2019); and lexical distance modulated phonological awareness as a function of stimulus presentation (Asadi & Ibrahim, 2014).

3.2.2. Low academic achievement: diglossia & pedagogy

Among the 101 studies, nineteen (n = 19; 18.8 %) explicitly examined Arab students’ low academic achievement in relation to sociolinguistic factors (e.g., diglossia) or pedagogical practices (Table 6). Within this subset, ten studies (n = 10; 52.6 %) targeted pre-K–elementary learners, four (n = 4; 21.1 %) focused on middle–high school, two (n = 2; 10.5 %) spanned childhood to adulthood, and two (n = 2; 10.5 %) recruited non-student participants (teachers/program directors). Developmental profiles were typically reported as typical (n = 14; 73.7 %), with fewer studies including atypical profiles (n = 3; 15.8 %); one study did not report profile. School type was reported in ten studies (public 7, private 1, mixed public–private 1, college 1); five were unspecified, and the remaining four involved non-student or non-school contexts. Content focused on classroom practices (e.g., phonetics, literature-based interventions, emergent literacy, screening, decoding) and on linguistic/cognitive domains (reading fluency, pseudoword reading, comprehension, academic vocabulary, phonological and morphological awareness, visual perception, syntactic knowledge, diglossic knowledge), with phonological, lexical, and morphological domains predominating (Asadi, Khateb, & Shany, 2017; Makhoul, 2017b; Schiff & Saiegh-Haddad, 2017). Illustratively, MSA story-listening improved kindergarten comprehension and active

Table 5
References of studies discussing diglossic distance as a barrier to academic success.

Ref.	Year	Authors
1	2020	E. Saiegh-Haddad, A. Shahbari-Kassem & R. Schiff
19	2017	Anonymized
30	2014	M. Leikin, R. Ibrahim, & H. Eghbaria
37	2014	S. M. K. Jamjoom
42	2012	L. K. Farran, G. E. Bingham & M. W. Matthews
48	2011	R. Ibrahim
59	2008	I. Levin, E. Saiegh-Haddad, N. Hende & M. Ziv
62	2007	E. Saiegh-Haddad
69	2005	E. Saiegh-Haddad
73	2004	E. Saiegh-Haddad
80	2003b	E. Saiegh-Haddad
83	2003	N. Boussofara-Omar
99	1999	N. Boussofara-Omar
180	2019	I. A. Asadi
215	2016	E. Saiegh-Haddad & R. Schiff
216	2010	R. Zuzovsky
219	2014	I. A. Asadi & R. Ibrahim
288	2014	M. Nevat, A. Khateb, & A. Prior
324	2011	E. Saiegh-Haddad, I. Levin, N. Hende, & M. Ziv
390	2015	H. Brosh & L. Attili
401	2014	Z. Najjar & A. Jarjoura
402	2015	M. Damanhour
407	2014	M. Al-Azraqi
451	2014	S. N. Ali
452	2014	H. Al Musawi
454	2014	R. K. A. M. Soliman
463	2012	C. M. Faust
468	2009	A. Rochdi
482	1995	D. W. Wilmsen
513	2020	A. Abou-Ghazaleh, A. Khateb & M. Nevat
574	2010	R. Zuzovsky
593	2020	B. Makhoul & T. Copti-Mshael
617	2018	R. Schiff & E. Saiegh-Haddad
633	2017	E. Saiegh-Haddad & O. Ghawi-Dakwar
681	1986	S. Alrabaa
689	2005	R. Khamis Dakwar
711	2019	Anonymized
714	2014	Z. Eviatar & R. Ibrahim
716	2014	E. Saiegh-Haddad & B. Spolsky
717	2014	L. Laks & R. A. Berman
718	2014	J. Rosenhouse
727	2015	B. Makhoul, T. Copti-Mshael, & R. Khamis Dakwar
731	2007	R. Khamis-Dakwar & K. Froud
733	2020	W. Darwesh
734	2014	M. Hashimee, & D. M. Saad
741	2021	C. Hamzaoui

Table 6
References of studies discussing achievement gap and diglossia.

Ref.	Year	Authors
216	2010	R. Zuzovsky
270	2013	S. Boudelaa, & W. D. Marslen-Wilson
2	2020	A. Oueini, G. M. Awada, & F. S. Kaissi
20	2017	R. Schiff & E. Saiegh-Haddad
24	2015	M. A. Al-Sobh, A.-R. H. Abu-Melhim, & N. A. Bani-Hani
96	2000	S. Abu-Rabia
162	2017	S. Hassunah Arafat, O. Korat, D. Aram, & E. Saiegh-Haddad
178	2017	I. A. Asadi, A. Khateb, R. Ibrahim, & H. Taha
539	2017	B. Makhoul
256	2017	I. A. Asadi, A. Khateb, & M. Shany
593	2020	B. Makhoul, & T. Copti-Mshael
621	2018	Y. Poyas, & B. Bawardi
656	2015	B. Makhoul
681	1986	S. Alrabaa
692	2013	I. Al-Huri
705	2018	A. Asli-Badarnah, & M. Leikin
19	2017	Anonymized
717	2014	L. Laks & R. A. Berman
719	2014	R. Khamis-Dakwar, & B. Makhoul

language use (Feitelson et al., 1993), and some cohorts reported positive attitudes toward both MSA and SpA (El-Dash & Tucker, 1975; Hamzaoui, 2017).

3.2.3. Perception and attitude

Among the 101 studies, twenty-one (n = 21; 20.8 %) examined perception and attitudes towards SpA and MSA (Table 7). Makhoul et al. (2015) found that second- and third-grade Palestinian students conceptualized MSA and SpA as distinct systems, though cross-variety similarities may support MSA acquisition in elementary grades. Schiff and Saiegh-Haddad (2018) reported that while basic SpA-MSA differences narrow by the end of primary school, gaps in morphological awareness and reading persist; SpA morphological awareness predicted MSA reading fluency. Samples included adult university students (n = 4; 19.1 %), middle-high school students (n = 2; 9.5 %), and non-student participants such as teachers (n = 5; 23.8 %); only seven (n = 7; 33.3 %) explicitly reported grade level. Across contexts, MSA was consistently framed as the appropriate, high-prestige variety for schooling—often linked to its religious status as the language of the Qur’an (e.g., Al Masri & Abou Hassan, 2014; Awadi, 2017; Mahmoud, 2002)—and several studies documented resistance to using SpA for instruction (e.g., Al-Kahtany, 1997; Boussalhi, 1991). Other work reported a positive attitude toward both varieties (El-Dash & Tucker, 1975; Hamzaoui, 2017). Participants frequently expressed reverence for MSA despite finding it more difficult (Makhoul et al., 2015), while SpA was linked to local identity and everyday use (Demachkie & Oweini, 2011).

3.2.4. Policy

Of the 101 studies, twenty (n = 20; 19.8 %) addressed Arabic language policy and planning (Table 8). Most advocated for early MSA exposure and reducing the SpA-MSA gap. Tibi et al. (2013) recommended campaigns promoting early MSA use; Husein (2017) called for curriculum changes to limit SpA influence. Hebbali (2017) highlighted the role of Qur’anic schools in MSA acquisition, while Al-Haq (1985) urged stronger ties between language academies and schools. Awadi (2017) and Husein (2017) supported formal policies institutionalizing MSA across Arab states. Among the twenty studies related to policy, 25 % were set in private schools, 20 % in public schools, 10 % in universities, and 5 % across multiple settings; the rest did not report educational context. Nearly all participants had typical developmental profiles.

Table 7
References of studies discussing perception and attitudes.

Ref.	Year	Authors
502	1985	A. Elgibali
132	1993	D. Feitelson, Z. Goldstein, J. Iraqi, & D. L. Share
168	2017	G. Gherwash
176	2014	S. Uziel-Karl, F. Kanaan, R. Yifat, I. Meir, N. Abugov, & D Ravid
500	1985	F. M. Al-Abed Al-Haq
505	1980	M. S. Mahmoud
736	2014	B. Y. A. T. Naous
739	2002	I. K. Mahmoud
740	2021	C. Hamzaoui
699	2017	C. Hamzaoui
84	2003	I. Thonhauser
95	2001	I. Thonhauser
111	1997	A. H. Al-Kahtany
320	1975	L. El-Dash, & G. R. Tucker
341	2019	C. Hamzaoui
420	2011	M. O. Demachkie, & A. Oweini
488	1991	A. Boussalhi
644	2016	R. Al-Mahrooqi, C.J. Denman & T. Sultana
692	2013	I. Al-Huri
727	2015	B. Makhoul, T. Copti-Mshael, & R. Khamis Dakwar
735	2014	A. Al Masri, A. Abu Hassan

Table 8

References of studies deducted in the category of policy and diglossia in relation to teaching and learning.

Ref.	Year	Authors
31	2014	H. Asaad, & Z. Eviatar
65	2007	R. Khamis-Dakwar
39	2013	S. Tibi, R. M. Joshi & L. McLeod
56	2009	R. Cote
99	1999	N. Boussofara-Omar
169	2009	V. A. Khachan
176	2014	S. Uziel-Karl, F. Kanaan, R. Yifat, I. Meir, N. Abugov, & D. Ravid
207	2017	A. A. Hussein
212	2012	O. F. Darwiche & A. Oweini
470	2009	Abdulrahman. Al- Mohd. M. A.
500	1985	F. M. Al- Abed Al-Haq
625	2018	R. Abbas, V. Vaknin-nusbaum, A. Neuman, G. Mongillo, D. Feola & R. Goldberg Kaplan
685	2011	F. H. Amer, B. A. Adaleh, & B. A. Rakhieh
701	2017	F. Z. Hebbali
711	2020	Anonymized
736	2014	B. Y. A. T. Naous
737	2013	Z. Dendane
738	2021	M. A. Orabi
739	2002	I. K. Mahmoud
741	2017	S. Awadi

3.2.5. Exposure to MSA and parental engagement

Of the 101 studies included, twenty ($n = 20$; 19.8 %) examined the relationship between diglossia, early MSA exposure, and parental engagement (Table 9). Among these, most focused on pre-K to elementary levels ($n = 13$; 65 %), with fewer addressing middle–high school ($n = 3$; 15 %), teachers ($n = 2$; 10 %), or adults ($n = 1$; 5 %). Poyas and Bawardi (2018) found that Palestinian teachers attributed reading difficulties to behavioral issues, lack of preparation, and the complexity of Arabic; socioeconomic status (SES)-based disparities in vocabulary were also noted. Hassunah Arafat et al. (2017) reported that age and SES affected literacy outcomes, even with formal instruction and use of pointed Arabic. Three studies emphasized parental roles through storytelling, rhymes, Qur'anic recitation, and home interactions. In Algeria, limited MSA exposure was linked to poor academic outcomes (Hamzaoui, 2017; Hebbali, 2017). Makhoul (2017a) found that meta-linguistic awareness improved by grade three. Alwaseel (2017) reported that minimal pre-school MSA exposure and dominant SpA use at home hindered literacy readiness in Saudi first graders.

Table 9

References of studies discussing exposure to MSA & parental involvement.

Ref.	Year	Authors
31	2014	H. Asaad, & Z. Eviatar
65	2007	R. Khamis-Dakwar
13	2018	E. Benmamoun & A. Albirini
46	2012	R. Khamis-Dakwar, K. Froud, & P. Gordon
132	1993	D. Feitelson, Z. Goldstein, J. Iraqi, & D. L. Share
162	2017	S. Hassumah Arafat, O. Korat, D. Aram, & E. Saiegh-Haddad
168	2017	G. Gherwash
212	2012	O. F. Darwiche & A. Oweini
247	2007	J. M. Hamdan & M. M. Amayreh
407	2014	M. Al-Azraqi
438	2017	T. A. Alwaseel
539	2017	B. Makhoul
600	2019	T. Amin & D. Badreddine
625	2018	R. Abbas, V. Vaknin-nusbaum, A. Neuman, G. Mongillo, D. Feola & R. Goldberg Kaplan
658	2015	H. Brosh
699	2017	C. Hamzaoui
701	2017	F. Z. Hebbali
711	2019	Anonymized
716	2014	E. Saiegh-Haddad & B. Spolsky
741	2017	S. Awadi

4. Discussion

This descriptive systematic review synthesized evidence on teaching and learning practices, pedagogical recommendations, and educational programs for native Arabic-speaking learners in diglossic contexts in the last five decades to ensure comprehensive historical coverage from past to present. A total of 101 studies met the inclusion criteria from diverse sources and disciplines: 64 were empirical and used quantitative methods, 9 employed mixed methods, and 4 were systematic reviews. The remaining 21 described educational programs or instructional components implemented within diglossic teaching frameworks. The descriptive synthesis of the review uncovered trends in the literature that are relevant for educators, policymakers, and researchers opening door for future potential studies.

4.1. Implications of diglossia on teaching and learning

The descriptive review uncovered a trend toward better performance outcomes in SpA, with the largest advantages observed in memory, phonological awareness, and early reading (e.g., Oueini, 2020; Saiegh-Haddad, 2003, 2004, 2007, 2014; Saiegh-Haddad & Schiff, 2016) with exploratory effect size analysis showing weak to moderate effect size (see Supplementary for methods and results). However, these findings are correlational and do not establish a causal link. In contrast, advantages for MSA tend to emerge when exposure or instruction is emphasized, or when grammatical knowledge is the target, consistent with learning-dependent gains in the less familiar variety (Abu-Rabia, 2000; Benmamoun and Albirini, 2018; Feitelson et al., 1993; Khamis-Dakwar et al., 2012).

4.2. Diglossia and developmental focus

In terms of developmental focus, most studies reviewed included children with typical development in pre-K to elementary settings. On the other hand, most studies on adult learners were conducted in university or college contexts, often involving participants with specific academic profiles. However, regardless of age, many studies observed that the difficulty learners have with MSA diminishes with increased proficiency, a finding with key pedagogical implications (Abu-Rabia, 2000; Alwaseel, 2017; Farran et al., 2012; Gherwash, 2017; Hamzaoui, 2017; Hebbali, 2017; Leikin et al., 2014; Makhoul, 2017a; Nevat et al., 2014).

4.3. Role of MSA exposure

This descriptive review showed that referencing SpA in instructional contexts may ease MSA acquisition and improve learner motivation (Levin et al., 2008; Taha, 2017). Furthermore, students' fluency in navigating between SpA and MSA is closely tied to their exposure levels and overall language proficiency (Abu-Rabia, 2000; Heckman, 2011; Saiegh-Haddad, 2003a; Saiegh-Haddad et al., 2011; Taha & Taha, 2020; Weigel et al., 2006). These findings advocate for expanded public education programs aimed at enhancing early Arabic literacy and addressing diglossia through family, school, and community-based approaches (Gregory et al., 2021; Taha Thomure et al., 2022; Tsimplera-Maluch et al., 2021).

4.4. Regional patterns and coloniality shaping research production

Many included studies were authored by researchers whose institutional affiliations are outside the Arab world, namely Israel, United Kingdom, and the United States of America. This finding aligns with previous studies showing that Western bias in sociolinguistic research is a well-documented phenomenon often linked to colonial legacies, with Arabic sociolinguistics increasingly contributing to broader decolonization efforts (Smakman et al., 2025). This concentration of studies in

institutes outside the Arab world, warrants further exploration to disentangle the ambiguous interplay of intrinsic linguistic factors and external sociopolitical influences. In contrast, studies led by researchers affiliated with institutions inside the Arab world were more often associated with settings facing constraints on research capacity, including fragile and conflict-affected contexts, and came from lower-middle economies as per the World Bank's FY2025 classifications—for example, Lebanon and Palestine (West Bank & Gaza) (World Bank Blogs, 2025). This may reflect the heightened sociolinguistic salience of diglossia in these contexts, where language plays a prominent role in education, identity, and post-colonial discourse, rather than a direct measure of research capacity or output relative to wealthier Arab states.

4.5. Limitations

The current descriptive review has several limitations. First, no standardized quality assessment tool or formal risk of bias assessment was applied, which limits the ability to evaluate the strength and internal validity of the included studies. Second, the overrepresentation of research affiliated with academic institutions outside the Arab world may constrain the cultural transferability of findings and introduce potential epistemological bias. Third, many studies offered limited contextual information about participants and school settings, which restricts meaningful comparison or application across different educational contexts. Fourth, while we included Arabic and English studies screening 927 studies, from selected databases including high quality grey literature from (1970–2021), publications in other relevant languages (such as French, particularly important for North African contexts), recent publications in last 4 years, more inclusive grey literature search, unpublished research, were not included and thus may limit the scope of representation.

4.6. Future research

Future research on Arabic diglossia should prioritize longitudinal designs to better capture its cumulative educational impact across developmental stages. Moreover, future studies need to implement standardized and transparent research methodologies. Studies must move beyond early education to include middle school, secondary, and adult populations, with more representative sampling across socioeconomic and linguistic backgrounds. Cross-dialectal research controlling for variables like dialect distance, prestige, and exposure is essential for broader generalizability. Additionally, learners with language-related disabilities—such as developmental language disorders or learning difficulties—remain significantly underrepresented and should be a focus for inclusive pedagogical and clinical research.

5. Conclusions

This descriptive review addressed a gap in Arabic diglossia research, showing that existing studies tend to focus on early literacy skills, such as word decoding and phonological awareness in young learners, rather than on teaching or education. Several pedagogical challenges were identified such as a persistent association between low academic achievement and diglossia among native Arabic-speaking children, insufficient early exposure to MSA, instructional methods that inadequately address the diglossic divide, and attitudinal barriers from teachers, learners, and parents toward MSA, shaping instructional choices and learner engagement. To address the challenges, we recommend addressing diglossia's effects on MSA vocabulary acquisition, integrating simplified MSA in early childhood instruction, using evidence-based methods in teacher education and professional development, and expanding home-based exposure to MSA through accessible and engaging resources. This review is limited by language restrictions and the scope of databases searched, which may have

excluded relevant studies published in less accessible outlets or languages. These constraints should be considered when interpreting the findings and conclusions.

CRediT authorship contribution statement

Hanada Taha Thomure: Writing – review & editing, Writing – original draft, Supervision, Resources, Project administration, Methodology, Investigation, Funding acquisition, Formal analysis, Data curation, Conceptualization. **Haitham Taha:** Writing – review & editing, Writing – original draft, Investigation. **Taline Sabella:** Writing – original draft, Validation. **Rabab Saleh:** Supervision, Methodology, Investigation, Formal analysis, Data curation.

Ethics statement

Not applicable.

Declaration of the use of AI assisted technologies

During the preparation of this work the author(s) used Grammarly to edit grammar and sentence structure. After using this tool/service, the author(s) reviewed and edited the content as needed and take(s) full responsibility for the content of the publication.

Funding statement

This work was supported by Zayed University [grant number 3030100]; and the Queen Rania Foundation [grant number EU2007].

Declaration of competing interest

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

Acknowledgments

The authors thank Dr. Hounaida Abi-Haidar and Dr. Ahmad Nazzal for valuable feedback, and the research assistant team at the Zai Arabic Language Research Center for support.

Appendix A. Supplementary data

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.ssaho.2025.102281>.

Data availability statement

All data and forms used in this study are readily available from the corresponding author upon request.

References

- References with are the studies included in the systematic review
- * Abu-Rabia, S. (2000). Effects of exposure to literary Arabic on reading comprehension in a diglossic situation. *Reading and Writing*, 13(1), 147–157. <https://doi.org/10.1023/A:1008133701024>.
 - * Al Masri, A., & Abou Hassan, I. (2014). *مجلة المجمع*. في اللغة العربية مجلة المجمع.
 - * Al-Haq, F. M. A. A. (1985). *A case study of language planning in Jordan (Arabicization, linguistic variation, attitudes, language academy, diglossia)*. Doctoral Thesis.
 - * Al-Kahtany, A. H. (1997). The “problem” of diglossia in the Arab world: An attitudinal study of modern standard Arabic and the Arabic dialects. *Al-Arabiyya*, 30, 1–30.
 - * Alwasel, T. (2017). *The influence of diglossia on learning Standard Arabic [Doctoral Thesis]*. King's College London.
 - * Asadi, I. A. (2019). How the characteristics of phonemes and syllabic structures can impact the phonological awareness of kindergarten and first-grade arabic-speaking

- children. *Reading Psychology*, 40(8), 768–781. <https://doi.org/10.1080/02702711.2019.1674431>.
- * Asadi, I. A., & Ibrahim, R. (2014). The influence of diglossia on different types of phonological abilities in Arabic. *Journal of Education and Learning*, 3(3), 45–55.
- * Asadi, I. A., Khateb, A., & Shany, M. (2017). How simple is reading in Arabic? A cross-sectional investigation of reading comprehension from first to sixth grade. *Journal of Research in Reading*, 40(S1), S1–S22. <https://doi.org/10.1111/1467-9817.12093>.
- * Awadi, S. (2017). *حضور - أنموذجاً - الوسط المدرسي و اللغة العربية بين الفصحى و العامية - السوسلوجيا*. 11–12, (11)3.
- Ayari, S. (1996). Diglossia and illiteracy in the Arab world 1. *Language Culture and Curriculum*, 9(3), 243–253. <https://doi.org/10.1080/07908319609525233>
- Badawi, A. S. M. (1973). *Mustawayat al-arabiyya al-muasira fi Misr. Dar al-Maarif*.
- * Benmamoun, E., & Albirini, A. (2018). Is learning a standard variety similar to learning a new language?: Evidence from heritage speakers of Arabic. *Studies in Second Language Acquisition*, 40(1), 31–61. <https://doi.org/10.1017/S0272263116000383>.
- Blanc, H. (1960). Style variations in spoken Arabic: A sample of interdialectal educated conversation. In *Contribution to Arabic linguistics* (pp. 81–156). Harvard University Press.
- * Boussalhi, A. (1991). *The sociolinguistics of learning: Attitudinal patterns and implications (A case study of Moroccan diglossia)* [Ph.D. United Kingdom: University of Glasgow <https://www.proquest.com/docview/2094819246/abstract/81D841E0DC3041BCPQ/1>].
- * Demachkie, M., & Oweini, A. (2011). Using the collaborative strategic reading strategy to improve seventh graders' reading comprehension in Arabic: A pilot study. *International Journal of Pedagogies and Learning*, 6, 219–231. <https://doi.org/10.5172/ijpl.2011.6.3.219>.
- * El-Dash, L., & Tucker, G. R. (1975). Subjective reactions to various speech styles in Egypt. 13(166), 33–54 <https://doi.org/10.1515/ling.1975.13.166.33>.
- El-Hassan, S. A. (1977). Educated spoken Arabic in Egypt and the Levant: A critical review of diglossia and related concepts. *Educated Spoken Arabic in Egypt and the Levant: A Critical Review of Diglossia and Related Concepts*, 8(2), 112–132.
- * Farran, L. K., Bingham, G. E., & Matthews, M. W. (2012). The relationship between language and reading in bilingual English-Arabic children. *Reading and Writing*, 25(9), 2153–2181. <https://doi.org/10.1007/s11145-011-9352-5>.
- * Feitelson, D., Goldstein, Z., Iraqi, J., & Share, D. L. (1993). Effects of listening to story reading on aspects of literacy acquisition in a diglossic situation. *Reading Research Quarterly*, 28(1), 71–79. <https://doi.org/10.2307/747817>.
- Ferguson, C. A. (1959). Diglossia. *Word*, 15(2), 325–340.
- Froud, K., & Khamis-Dakwar, R. (2021). The study of Arabic language acquisition: A critical review, 48–82 <https://doi.org/10.1017/9781108277327.004>.
- * Gherwash, G. (2017). Diglossia and literacy: The case of the Arab reader. *Arab Journal of Applied Linguistics*, 3(3), 56–85.
- Gregory, L., Taha Thomure, H., Kazem, A., Boni, A., Elsayed, M. A. A., & Taibah, N. (2021). *Advancing Arabic language teaching and learning: A path to reducing learning poverty in the Middle East and North Africa*. World Bank. <https://doi.org/10.1596/35917>
- Haeri, N. (2003). *Sacred language, ordinary people: Dilemmas of culture and politics in Egypt*. Springer.
- * Hamzaoui, C. (2017). *From home to school: A sociolinguistic study of Arabic diglossia and its effects on formal instruction in the Algerian education system [thesis]*. University of Tlemcen].
- * Hamzaoui, C. (2019). Attitudes towards diglossia in an Algerian educational context: An investigation of the primary level in Tlemcen. *Arab World English Journal*, 10(1), 314–323. <https://doi.org/10.2139/ssrn.3367591>.
- * Hassunah Arafat, S., Korat, O., Aram, D., & Saiegh-Haddad, E. (2017). Continuity in literacy achievements from kindergarten to first grade: A longitudinal study of arabic-speaking children. *Reading and Writing*, 30(5), 989–1007. <https://doi.org/10.1007/s11145-016-9709-x>.
- * Hebbali, F. Z. (2017). *Quran schools as an alternative remedy for the negative repercussions of Arabic diglossia* [Master's Thesis]. University of Tlemcen.
- Heckman, J. J. (2011). The economics of inequality: The value of early childhood education. *American Educator*, 35(1), 31–47.
- Holes, C. (2004). *Modern Arabic: Structures, functions, and varieties*. Georgetown University Press.
- * Husein, A. A.-R. (2017). Students' attitude towards Arabic language varieties: The case of the fuṣḥā Arabic. *Practice and Theory in Systems of Education*, 12(2), 86–99. <https://doi.org/10.1515/ptse-2017-0009>.
- Khamis, R., & Marzouqah, R. M. (2022). Issues related to serving the arabic-speaking population in Diaspora space with a focus on North America. *Arab Journal of Applied Linguistics*, 7(1). Article 1.
- Khamis-Dakwar, R., Froud, K., Dolan, C. T., & Westrope, C. (2022). Assessing diglossic knowledge and awareness in language and literacy: Pilot results from the Syria holistic assessment for learning (SHAL). In E. Saiegh-Haddad, L. Laks, & C. McBride (Eds.), *Handbook of literacy in diglossia and in dialectal contexts: Psycholinguistic, neurological, and educational perspectives* (pp. 451–475). Springer International Publishing. https://doi.org/10.1007/978-3-030-80072-7_19.
- * Khamis-Dakwar, R., Froud, K., & Gordon, P. (2012). Acquiring diglossia: Mutual influences of formal and colloquial Arabic on children's grammaticality judgments. *Journal of Child Language*, 39(1), 61–89. <https://doi.org/10.1017/S0305000910000784>.
- * Leikin, M., Ibrahim, R., & Eghbaria, H. (2014). 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(4), 733–747. <https://doi.org/10.1007/s11145-013-9462-3>.
- * Levin, I., Saiegh-Haddad, E., Hende, N., & Ziv, M. (2008). Early literacy in Arabic: An intervention study among Israeli Palestinian kindergartners. *Applied Psycholinguistics*, 29(3), 413–436. <https://doi.org/10.1017/S0142716408080193>.
- Maamouri, M. (1998). Language education and human development: Arabic diglossia and its impact on the quality of education in the Arab region. For full text: <http://www.wvu.edu/~www>.
- * Mahmoud, K. I. (2002). *العربية الفصحى بين الازدواجية والثنائية اللغوية*. King Faisal University, 3(1), 1–56.
- * Makhoul, B. (2017a). Investigating Arabic academic vocabulary knowledge among middle school pupils: Receptive versus productive knowledge. *Journal of Psycholinguistic Research*, 46(4), 1053–1065. <https://doi.org/10.1007/s10936-017-9479-x>.
- * Makhoul, B. (2017b). Moving beyond phonological awareness: The role of phonological awareness skills in Arabic reading development. *Journal of Psycholinguistic Research*, 46(2), 469–480. <https://doi.org/10.1007/s10936-016-9447-x>.
- * Makhoul, B., Copti-Mshael, T., & Dakwar, R. K. (2015). The development of sociolinguistic diglossic knowledge in oral-literacy mismatch situations: Preliminary findings from Palestinian Arabs. *Psychology*, 6(9). <https://doi.org/10.4236/psych.2015.69115>. Article 09.
- Meiseles, G. (1980). Educated spoken Arabic and the Arabic language continuum. *Educated Spoken Arabic and the Arabic Language Continuum*, 11(2), 117–148.
- Mullis, I., Davier, M., Foy, P., Reynolds, K., & Wry, E. (2023). *Pirls 2021: International results in reading*. IEA. <https://doi.org/10.6017/lse.tpisc.tr2103.kb5342>
- Mullis, I., Martin, M., Foy, P., & Hooper, M. (2017). *International results in reading*. IEA. <https://doi.org/10.6017/lse.tpisc.tr2103.kb5342>
- * Nevat, M., Khateb, A., & Prior, A. (2014). When first language is not first: A functional magnetic resonance imaging investigation of the neural basis of diglossia in Arabic. *European Journal of Neuroscience*, 40(9), 3387–3395. <https://doi.org/10.1111/ejn.12673>.
- * Oueini, A., Awada, G., & Kaissi, F. (2020). Effects of diglossia on classical Arabic: Language developments in bilingual learners. *Gema Online Journal of Language Studies*, 20. <https://doi.org/10.17576/gema-2020-2002-11>.
- Page, M. J., McKenzie, J. E., Bossuyt, P. M., Boutron, I., Hoffmann, T. C., Mulrow, C. D., Shamseer, L., Tetzlaff, J. M., Akl, E. A., Brennan, S. E., Chou, R., Glanville, J., Grimshaw, J. M., Hróbjartsson, A., Lalu, M. M., Li, T., Loder, E. W., Mayo-Wilson, E., McDonald, S., ... Moher, D. (2021). The PRISMA 2020 statement: An updated guideline for reporting systematic reviews. *The BMJ*, 372. <https://doi.org/10.1136/bmj.n71>
- Patrinios, H. A., Vegas, E., & Carter-Rau, R. (2022). *An analysis of COVID-19 student learning loss*.
- * Poyas, Y., & Bawardi, B. (2018). Reading literacy in Arabic: What challenges 1st grade teachers face. *L1: Educational Studies in Language and Literature*, 18, 1–15. <https://doi.org/10.17239/L1ESLL-2018.18.01.11>.
- Rethlefsen, M. L., Kirtley, S., Waffenschmidt, S., Ayala, A. P., Moher, D., Page, M. J., Koffel, J. B., Blunt, H., Brigham, T., Chang, S., Clark, J., Conway, A., Couban, R., de Kock, S., Farrah, K., Fehrmann, P., Foster, M., Fowler, S. A., Glanville, J., ... PRISMA-S Group. (2021). PRISMA-S: An extension to the PRISMA statement for reporting literature searches in systematic reviews. *Systematic Reviews*, 10(1), 39. <https://doi.org/10.1186/s13643-020-01542-z>
- * Saiegh-Haddad, E. (2003a). Bilingual oral reading fluency and reading comprehension: The case of Arabic/Hebrew (L1); English (L2) readers. *Reading and Writing*, 16(8), 717–736. <https://doi.org/10.1023/A:1027310220036>.
- * Saiegh-Haddad, E. (2007). Linguistic constraints on children's ability to isolate phonemes in Arabic. *Applied Psycholinguistics*, 28(4), 607–625. <https://doi.org/10.1017/S0142716407070336>.
- * Saiegh-Haddad, E., Levin, I., Hende, N., & Ziv, M. (2011). The linguistic affiliation constraint and phoneme recognition in diglossic Arabic. *Journal of Child Language*, 38(2), 297–315. <https://doi.org/10.1017/S0305000909990365>.
- * Saiegh-Haddad, E., & Schiff, R. (2016). The impact of diglossia on vowel and unvoiced word reading in Arabic: A developmental study from childhood to adolescence. *Scientific Studies of Reading*, 20(4), 311–324. <https://doi.org/10.1080/10888438.2016.1180526>.
- * Saiegh-Haddad, E. (2003b). Linguistic distance and initial reading acquisition: The case of Arabic diglossia. *Applied Psycholinguistics*, 24(3), 431–451. <https://doi.org/10.1017/S0142716403000225>.
- * 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(4), 495–512. <https://doi.org/10.1017/S0142716404001249>.
- * Schiff, R., & Saiegh-Haddad, E. (2017). When diglossia meets dyslexia: The effect of diglossia on vowel and unvoiced word reading among native arabic-speaking dyslexic children. *Reading and Writing*, 30(5), 1089–1113. <https://doi.org/10.1007/s11145-016-9713-1>.
- * Schiff, R., & Saiegh-Haddad, E. (2018). Development and relationships between phonological awareness, morphological awareness and word reading in spoken and standard Arabic. *Frontiers in Psychology*, 9. <https://doi.org/10.3389/fpsyg.2018.00356>.
- Smakman, D., Heinrich, P., & Habib, R. (2025). Decolonising a field and its practices. *Journal of Arabic Sociolinguistics*, 3, 5–23. <https://doi.org/10.3366/arabic.2025.0038>
- Taha, H., & Taha, H. (2020). Morpho-orthographic preferences among typical and poor native Arab readers. *Writing Systems Research*, 11(2), 212–225. <https://doi.org/10.1080/17586801.2020.1805394>
- Taha Thomure, H., Brown, G., Speaker, R., Taha, H., Tamim, R., & O'Neill, N. (2022). Arabic reading fluency rates: An exploratory study. *Gulf Education and Social Policy Review (GESPR)*, 3(1). <https://doi.org/10.18502/gespr.v3i1.11493>

- * Tibi, S., Joshi, R. M., & McLeod, L. (2013). Emergent writing of young children in the United Arab Emirates. *Written Language & Literacy*, 16(1), 77–105. <https://doi.org/10.1075/wll.16.1.04tib>.
- Tsimpree Maluch, J., & Taha Thomure, H. (2021). Shifting paradigms in Arabic pedagogy and policy in the UAE: Opportunities and challenges for teacher education. In N. Bakkali, & N. Memon (Eds.), *Teacher training and education in the GCC: Unpacking the complexities and challenges of internationalizing educational contexts* (pp. 39–54). Lexington Books.
- Weigel, D. J., Martin, S. S., & Bennett, K. K. (2006). Contributions of the home literacy environment to preschool-aged children's emerging literacy and language skills. *Early Child Development and Care*, 176(3–4), 357–378. <https://doi.org/10.1080/03004430500063747>
- World Bank Blogs. (2025). World Bank country classifications by income level for 2024–2025. <https://blogs.worldbank.org/en/pendata/world-bank-country-classifications-by-income-level-for-2024-2025>.
- Zughoul, M. R. (1980). Diglossia in Arabic: Investigating solutions. *Anthropological Linguistics*, 22(5), 201–217.
- ### Further reading
- * Abbas, R., Vaknin-Nusbaum, V., Neuman, A., Mongillo, G., Feola, D., & Goldberg Kaplan, R. (2018). The use of modern standard and spoken Arabic in mathematics lessons: The case of a diglossic language. *Culture and Education*, 30(4), 730–765. <https://doi.org/10.1080/11356405.2018.1519920>.
- * Abdulrahman Al-Mohd, M. A. (2009). *Minority education and curriculum in the multilingual and multicultural society of the UAE*. Durham University <https://etheses.dur.ac.uk/2923/>.
- * Abou-Ghazaleh, A., Khatib, A., & Nevat, M. (2020). Language control in diglossic and bilingual contexts: An event-related fMRI study using picture naming tasks. *Brain Topography*, 33(1), 60–74. <https://doi.org/10.1007/s10548-019-00735-7>.
- * Al Musawi, H. (2014). *The role of phonology, morphology and dialect in reading Arabic among hearing and deaf children*. ORA - Oxford University Research Archive [Doctoral Thesis, university of Oxford].
- * Al Musawi, H. (2014). *The role of phonology, morphology and dialect in reading Arabic among hearing and deaf children*. ORA - Oxford University Research Archive [Doctoral Thesis, university of Oxford].
- * Al-Huri, I. (2013). *The impact of diglossia in teaching/learning the Arabic course in Sana'a secondary schools* [Doctoral Thesis. University of Tlemecen].
- * Al-Mahrooqi, R., Denman, C., & Sultana, T. (2016). Factors contributing to the survival of standard Arabic in the Arab world: An exploratory study. *Pertanika Journal of Social Sciences & Humanities*, 24(3).
- * Al-Sobh, M., Abu-Melhim, A.-R. H., & Bani-Hani, N. A. (2015). Diglossia as a result of language variation in Arabic: Possible solutions in light of language planning. *Journal of Language Teaching and Research*, 6(2), 274–279. <https://doi.org/10.17507/jltr.0602.05>.
- AlHashmi, M., Taha-Thomure, H., & AlMazroui, K. (2022). Arabic language teachers' perceptions of standards-based educational reform. *Gulf Education and Social Policy Review*, 2(2), 91–114. <https://doi.org/10.18502/gespr.v2i1.10044>
- * Ali, S. N. (2014). *Reading ability and diglossia in Kuwaiti primary schools* [University of Leeds].
- * Alrabaa, S. (1986). Diglossia in the classroom: The Arabic case. *Anthropological Linguistics*, 28(1), 73–79.
- Amara, M. (2002). The place of Arabic in Israel. *International Journal of the Sociology of Language*, 2002, 53–68. <https://doi.org/10.1515/ijsl.2002.051>
- * Amer, F. H., Adaleh, B. A., & Rakhieh, B. A. (2011). Arabic diglossia: A phonological study. *Argumentum*, 7, 19–36.
- * Amin, T., & Badreddine, D. (2019). Teaching science in Arabic: Diglossia and discourse patterns in the elementary classroom. *International Journal of Science Education*, 42(14), 2290–2330. <https://doi.org/10.1080/09500693.2019.1629039>.
- * Asaad, H., & Eviatar, Z. (2014). Learning to read in Arabic: The long and winding road. *Reading and Writing*, 27(4), 649–664. <https://doi.org/10.1007/s11145-013-9469-9>.
- * Asadi, I. A. (2019). How the characteristics of phonemes and syllabic structures can impact the phonological awareness of kindergarten and first-grade arabic-speaking children. *Reading Psychology*, 40(8), 768–781. <https://doi.org/10.1080/02702711.2019.1674431>.
- * Asli-Badarnah, A., & Leikin, M. (2018). Morphological ability among monolingual and bilingual speakers in early childhood: The case of two Semitic languages. *Journal of Bilingualism*, 23(5), 1087–1105. <https://doi.org/10.1177/13670069187810>.
- * Benmamoun, E., & Albirini, A. (2018). Is learning a standard variety similar to learning a new language?: Evidence from heritage speakers of Arabic. *Studies in Second Language Acquisition*, 40(1), 31–61. <https://doi.org/10.1017/S0272263116000383>.
- * Boudelaa, S., & Marslen-Wilson, W. D. (2013). Morphological structure in the Arabic mental lexicon: Parallels between standard and dialectal Arabic. *Processes*, 28(10), 1453–1473. <https://doi.org/10.1080/01690965.2012.719629>.
- * Bousofara-Omar, N. (1999). *Arabic diglossic switching in Tunisia: An application of myers-scotton's MLF model*. Ph.D., The University of Texas at Austin <https://www.proquest.com/docview/304537294/abstract/512367F4A379477FPQ/1>.
- * Bousofara-Omar, N. (1999). *Arabic diglossic switching in Tunisia: An application of myers-scotton's MLF model*. Ph.D., The University of Texas at Austin <https://www.proquest.com/docview/304537294/abstract/512367F4A379477FPQ/1>.
- Brosh, H. (2015). Arab students' perceptions of diglossia. *Al-Arabiyya: Journal of the American Association of Teachers of Arabic*, 48(1), 23–41.
- * Brosh, H., & Attili, L. (2015). Ramifications of diglossia on how native arabic-speaking students in Israel write. *Journal of Applied Linguistics*, 6(2), 165–190. <https://doi.org/10.1558/japl.v6i2.27495>.
- * Cote, R. A. (2009). Choosing one dialect for the Arabic speaking world: A status planning dilemma. *Journal of Second Language Acquisition and Teaching*, 16(0). Article 0.
- * Damanhour, M. (2015). The effect of early and heavy exposure to a second language on the recognition of certain Arabic phonemes: A case study. *ARECLS*, 12.
- * Darwesh, W. (2020). *تخريف اللهجات العربية - المرسال*. Almrsl.Com <https://www.almrsl.com/post/964430>.
- * Darwiche, O. F., & Oweini, A. (2012). The effect of diglossia on Arabic vocabulary development in Lebanese students. *Educational Research Review*, 7(16), 351–361. <https://doi.org/10.5897/ERR11.022>.
- * Dendane, Z. (2013). *The Arabic language, the issue of diglossia and formal education*—اللغة العربية، إشكالات اللهجات والتخريف الرسمي. *Towards a sociolinguistic analysis of language variation in Arabic: Cairene and Kuwaiti dialects (diglossia)* [Ph.D. University of Pittsburgh].
- * Eviatar, Z., & Ibrahim, R. (2014). Why is it hard to read Arabic? In E. Saiegh-Haddad, & R. M. Joshi (Eds.), *Handbook of Arabic literacy: Insights and perspectives* (pp. 77–96). Netherlands: Springer. https://doi.org/10.1007/978-94-017-8545-7_4.
- * Faust, C. M. (2012). *Style shifting in Egyptian and Tunisian Arabic: A sociolinguistic study of media Arabic* [M.A. The University of Utah].
- Ferguson, C. A. (1991). Diglossia revisited. *Southwest Journal of Linguistics*, 10(1), 214–234.
- * Hamdan, J. M., & Amayreh, M. M. (2007). Consonant profile of arabic-speaking school-age children in Jordan. *Folia Phoniatrica et Logopaedica*, 59(2), 55–64. <https://doi.org/10.1159/000098338>.
- * Hamzaoui, C. (2021). A sociolinguistic analysis of Arabic diglossia inside the classroom: Tlemcen speech community as a case in point. *Mountoune*, 14(4), 354–363.
- * Hashimee, M., & Saad, D. M. (2014). *اللهجات العربية في اللغة العربية*. *The Sultan Alauddin Sulaiman Shah Journal (JSASS)*, 5(2) <https://ketabpedia.com/تحصيل/اللهجات-العربية-في-اللغة-العربية-2/>.
- * Ibrahim, R. (2011). Literacy problems in Arabic: Sensitivity to diglossia in tasks involving working memory—ScienceDirect. *Journal of Neurolinguistics*, 24(5), 571–582.
- * Jamjoom, S. M. K. (2014). *Story reading and literary Arabic vocabulary acquisition in kindergarten* [Doctoral Thesis]. UMI.
- * Khachan, V. A. (2009). Diglossic needs of illiterate adult women in Egypt: A needs assessment. *International Journal of Lifelong Education*, 28(5), 649–660. <https://doi.org/10.1080/02601370903190086>.
- * Khamis-Dakwar, R. (2007). *The development of diglossic morphosyntax in Palestinian Arabic-speaking children* [Ph.D. Columbia University].
- * Khamis-Dakwar, R., & Froud, K. (2007). Lexical processing in two language varieties: An even-related brain potential study of Arabic native speakers. In M. A. Mughazy (Ed.), *Perspectives on Arabic linguistics: Papers from the annual symposium on Arabic linguistics* (Vol. XX, pp. 153–166). John Benjamins Publishing Company. <https://doi.org/10.1075/cilt.290.13kha>. *Kalamazoo, Michigan, March 2006*.
- Khamis-Dakwar, R., & Froud, K. (2019). Diglossia and language development. In *The routledge handbook of Arabic sociolinguistics*. Routledge.
- * Khamis-Dakwar, R., & Makhoul, B. (2014). The development of ADAT (arabic diglossic knowledge and awareness test): A theoretical and clinical overview. In E. Saiegh-Haddad, & R. M. Joshi (Eds.), *Handbook of Arabic literacy: Insights and perspectives* (pp. 279–300). Netherlands: Springer. https://doi.org/10.1007/978-94-017-8545-7_13.
- * Laks, L., & Berman, R. A. (2014). A new look at diglossia: Modality-driven distinctions between spoken and written narratives in Jordanian Arabic. In E. Saiegh-Haddad, & R. M. Joshi (Eds.), *Handbook of Arabic literacy: Insights and perspectives* (pp. 241–254). Netherlands: Springer. https://doi.org/10.1007/978-94-017-8545-7_11.
- * Mahmoud, S. M. (1980). *Terms of status in colloquial Cairene Arabic: A study in educational linguistics* [Ph.D. University of Illinois at Urbana-Champaign].
- * Makhoul, B. (2015). Investigating academic vocabulary among middle-school Arabic native speakers. *ICERI2015 Proceedings, 1852–1861*. 8th international conference of education, research and innovation.
- * Makhoul, B., & Copti-Mshael, T. (2020). Promoting academic literacy skills among seven graders in Arabic as L1 in Israel (El fomento del lenguaje académico de los estudiantes de lengua árabe en el primer curso de secundaria en Israel). *Culture and Education*, 32(2), 340–370. <https://doi.org/10.1080/11356405.2020.1746899>.
- * Najjar, Z., & Jarjoura, A. (2014). The e-book in the service of "emerging literacy" among arabic-speaking preschool children. *International conference on information technologies in education (ICICTE) 2014*.
- * Naous, B. Y. A. T. (2014). *اللغة العربية وتحديات اللهجات العربية (الوقائع والحلول)*. www.alukah.net.
- * Orabi, A. M. (2021). *الاللهجات العربية وأثرها في التناسب اللغوي العربي*. *مجلة المراجعة*. 105–121. (2/7). https://doi.org/10.1007/978-94-017-8545-7_12.
- * Rochdi, A. (2009). *Developing pre-literacy skills via shared book reading: The effect of linguistic distance in a diglossic context* [Ph.D. The University of Iowa] <https://www.proquest.com/docview/304900684/abstract/6C5DA1E9E1504305PQ/1>.
- * Rosenhouse, J. (2014). Literacy acquisition and diglossia: Textbooks in Israeli Arabic-speaking schools. In E. Saiegh-Haddad, & R. M. Joshi (Eds.), *Handbook of Arabic literacy* (Vol. 9, pp. 255–278). Netherlands: Springer. https://doi.org/10.1007/978-94-017-8545-7_12.
- * Saiegh-Haddad, E. (2005). Correlates of reading fluency in Arabic: Diglossic and orthographic factors. *Reading and Writing*, 18(6), 559–582. <https://doi.org/10.1007/s11145-005-3180-4>.
- * Saiegh-Haddad, E., & Ghawi-Dakwar, O. (2017). Impact of diglossia on word and non-word repetition among language impaired and typically developing arabic native speaking children. *Frontiers in Psychology*, 8. <https://doi.org/10.3389/fpsyg.2017.02010>.

- * Saiegh-Haddad, E., & Schiff, R. (2016). The impact of diglossia on vowel and unvowel word reading in Arabic: A developmental study from childhood to adolescence. *Scientific Studies of Reading*, 20(4), 311–324. <https://doi.org/10.1080/10888438.2016.1180526>.
- * Saiegh-Haddad, E., Shahbari-Kassem, A., & Schiff, R. (2020). Phonological awareness in Arabic: The role of phonological distance, phonological-unit size, and SES. *Reading and Writing*, 33(6), 1649–1674. <https://doi.org/10.1007/s11145-020-10019-3>.
- * Saiegh-Haddad, E., & Spolsky, B. (2014). Acquiring literacy in a diglossic context: Problems and prospects. In E. Saiegh-Haddad, & R. M. Joshi (Eds.), *Handbook of Arabic literacy: Insights and perspectives* (pp. 225–240). Netherlands: Springer. https://doi.org/10.1007/978-94-017-8545-7_10.
- * Saiegh-Haddad, E., & Taha, H. (2017). The Role of morphological and phonological awareness in the early development of word spelling and reading in typically developing and disabled Arabic readers. *Dyslexia*, 23(4), 345–451.
- * Soliman, R. K. A. M. (2014). *Arabic cross-dialectal conversations with implications for the teaching of Arabic as a second language [Doctoral Thesis]*. University of Leeds.
- * Taha, H. (2017). How does the linguistic distance between spoken and standard language in Arabic affect recall and recognition performances during verbal memory examination. *Journal of Psycholinguistic Research*, 46(3), 551–566. <https://doi.org/10.1007/s10936-016-9453-z>.
- * Taha, H. (2019). The role of semantic activation during word recognition in Arabic. *Cognitive Processing*, 20(3), 333–337. <https://doi.org/10.1007/s10339-019-00915-0>.
- Taha, H., Taha, H., & Shaheen, H. (2023). The effect of the linguistic status of text previewing in Arabic on the reading comprehension outcomes among second and sixth grade native Arabs readers: A cross-sectional view. *Journal of Psycholinguistic Research*, 52(6), 2661–2676. <https://doi.org/10.1007/s10936-023-10013-0>
- Taha-Thomure, H. (2023). What brain imaging research and science of reading can do for Arabic language teaching & learning. In *New science of learning* (pp. 20–39). Brill. https://doi.org/10.1163/9789004540767_003.
- Thomure, H. T., Oo, C. Z., & Khine, M. S. (2025). Reading achievements among students in the United Arab Emirates: A multilevel analysis of PIRLS 2021. *International Journal of Educational Research Open*, 8, Article 100421. <https://doi.org/10.1016/j.ijedro.2024.100421>
- * Thonhauser, I. (2001). Multilingual education in Lebanon: “arabinglizi” and other challenges of multilingualism. *Mediterranean Journal of Educational Studies*, 6(1).
- * Thonhauser, I. (2003). “Written language but easily to use!”: Perceptions of continuity and discontinuity between written/oral modes in the Lebanese context of biliteracy and diglossia | John Benjamins. *Written Language & Literacy*, 6(1), 93–109.
- * Uziel-Karl, S., Kanaan, F., Yifat, R., Meir, I., Abugov, N., & Ravid, D. (2014). Hebrew and Palestinian Arabic in Israel: Linguistic frameworks and speech-language pathology services. *Topics in Language Disorders*, 34(2), 133. <https://doi.org/10.1097/TLD.0000000000000013>.
- * Wilmsen, D. W. (1995). *The word play’s the thing: Educated Spoken Arabic in a theatrical community in Cairo*. Ph.D., University of Michigan <https://www.proquest.com/docview/304204946/abstract/3A2162211DFE4EE0PQ/1>.
- Wyatt, T. R. (2022). “The sins of our forefathers”: Reimagining research in health professions education. *Advances in Health Sciences Education*, 27(4), 1195–1206. <https://doi.org/10.1007/s10459-022-10111-z>
- * Zuzovsky, R. (2010a). Instructional variables involved in problems associated with diglossia in Arabic speaking schools in Israel. PIRLS 2006 findings. *Journal for Educational Research Online*, 2(1), 5–31.
- * Zuzovsky, R. (2010b). The impact of socioeconomic versus linguistic factors on achievement gaps between Hebrew-speaking and arabic-speaking students in Israel in reading literacy and in mathematics and science achievements. *Studies In Educational Evaluation*, 36(4), 153–161. <https://doi.org/10.1016/j.stueduc.2011.02.004>.