

Instructed Reading and Vocabulary in Arabic as a Foreign Language: A Research Agenda

Amr Rabie-Ahmed

Michigan State University

Ayman Mohamed

Michigan State University

Abstract

Arabic is reported as one of the top ten languages taught in U.S. higher education institutions (Looney & Lusin, 2019; Ryding, 2018). This underscores the importance of establishing more elaborate and extensive research in Arabic second language acquisition (ASLA). Theories on input, intake, interaction, feedback, vocabulary processing, and learner cognition need to be redefined to serve Arabic-specific purposes; otherwise, Arabic teaching practice will continue to be informed by Western language paradigms (Ryding & Allen, 2013). In this paper, we propose several research tasks focusing on reading and vocabulary research in Arabic as a foreign language (AFL) to bridge the gap between research in ASLA and pedagogy. Through highlighting some pressing challenges reported by Arabic learners and teachers, we provide an overview of published research motivated by the given challenges.

Keywords: Arabic as a foreign language; Vocabulary; Reading; Diacritics; Root and pattern

Introduction

Recent Modern Language Association (MLA) reports demonstrate that Arabic is still relatively stable in terms of enrollment in U.S. higher education. Ryding (2018) maintained that Arabic enrollment remains robust as more learners are reaching advanced levels of proficiency (Goldberg & Looney, 2015) and pursuing careers related to Arabic. This underscores the importance of establishing more elaborate and extensive research in ASLA. According to Ryding and Allen (2013), Arabic pedagogy will continue to be informed by Western language paradigms if language acquisition theories are not redefined to serve Arabic-specific research. To bridge the gap between research and pedagogy in Arabic teaching practice, Alhawary (2018) called for classroom-based research that would inform Arabic teaching practitioners about the effectiveness and relevance of techniques and strategies that specifically target language skills (reading, writing, listening, and speaking) in the classroom rather than taking them for granted based on research from other languages. Specifically, learning to read and write Arabic as a foreign language can be particularly challenging for various reasons, including orthography and diacritics, word order, the complex *ʔiʕra:b* system (case and mood marking), the root-and-pattern morphology, and the diglossic nature of the language. This

article suggests research tasks focusing on reading and vocabulary research in AFL to bridge the gap between research in ASLA and pedagogy. Under each research task, we start with a systematic review of research related to the task, highlighting some pressing challenges that Arabic learners and teachers report about teaching reading and vocabulary of Arabic. At the end of each section, we provide some research ideas and a guide for researchers in ASLA to replicate or conduct to connect research with pedagogical practices.

Research task 1: Measuring receptive and productive knowledge of diacritics and root-and-pattern morphology and their role in language performance and vocabulary growth.

The uniqueness of the Arabic orthography is not limited to the right-to-left writing system or the connected forms of letters. It also lies in the use of diacritics to represent short vowel sounds. The written alphabetical system in Arabic is consonantal (Saiegh-Haddad, 2005). Out of the 28 letters of Arabic, only three letters can function as long vowels, sometimes serving as consonants too (Brosh, 2015). The shortage of vowels in written Arabic is compensated by diacritics above or below letters. This eventually results in two types of texts in Arabic: shallow and deep orthography texts.

In shallow orthography texts, words are always vowelized with diacritics, making them more accessible to beginning learners. The other type, deep orthography, in which diacritics are rarely or barely used, is the common practice in written Arabic and can be managed by advanced Arabic learners as they have already developed a broad range of vocabulary based on their root-and-pattern knowledge (Abu Rabia, 1995, 1997, 1999, 2002; Hansen, 2010). Even though some informal texts are not vowelized, diacritics are still implicitly used in readers' cognition to identify and understand the meanings (Abu-Liel, Ibrahim, & Eviatar, 2021). Another relevant feature in discussing diacritics in Arabic is the *ʔiṣra:b* system. It is defined as the inflectional grammar of the written language and is used to mark case and mood. Diacritical short vowels and inflectional endings are assigned to nouns and verbs to mark their syntactic functions (Khaldieh, 2001). Thus, in dealing with Arabic text, learners can explicitly or implicitly process information of diacritics guided by their knowledge of root and pattern, case, and mood in addition to their lexical knowledge.

In addition to diacritics, root-and-pattern morphology is essential in Arabic vocabulary learning. Roots refer to the set of consonant letters from which many words are derived. All different parts of speech emerge from three- to four-

consonant roots and, on very rare occasions, five-consonant roots. For example, words like book, books, write, writing, writer, library, and office are derived from the same three-consonant root K-T-B. In their early stages, learners of Arabic encounter a number of homographs like *دَرَسَ* *daras* (“he studied”) versus *دَرَّسَ* *darras* (“he taught”), or *كَتَبَ* *kataba* (“he wrote”) versus *كُتِبَ* *kutub* (“books”), or *أَكَلَ* *akala* (“he ate”) versus *أَكْلٌ* *akl* (“food”).

In derivational morphology, Arabic words are derived from consonantal roots, which take different patterns using vowel infixes breaking into the orthographic sequence of the word. The root carries the lexical reference, and the combination of roots and phonological patterns conveys specific semantics (Abu-Rabia & Saliba, 2008; Abu-Rabia & Awwad, 2004). Patterns generate different parts of speech from a single base root that carries the core meaning. The inflection of verbs is systematic and considers person, number, gender, and time. Different morphemes convey different information. Thus, the interpretation of words in Arabic reading requires processing the combination of the root and the word pattern.

Previous research on the effect of diacritics on reading comprehension and word recognition (mostly focusing on

Arabic native speaker populations and particularly school children) yielded conflicting results. Some studies (e.g., Abu-Rabia, 1997, 1998, 1999, 2001, 2007; Abu-Rabia & Siegel, 1995) pointed out that vowels and diacritics significantly facilitated reading comprehension, especially when combined with context knowledge. Others reported that vowelization hindered reading performance (e.g., Almadi, 2007; Ibrahim, 2003; Taha, 2016; Hansen, 2010). Other studies concluded that diacritics have a neutral effect on reading comprehension (see Khaldieh, 2001). Abu-Rabia (2019) identified further gaps in literature that caused contradicting results about the role of diacritics, including the use of different uncontrolled measures and scoring rules, the random use of word lists with no control of word knowledge, and the lack of longitudinal investigations that would legitimately capture reading development.

In a carefully designed study, Midhwah and Alhawary (2020) addressed some of these methodological gaps by comparing the performance of two groups of learners of different proficiency levels from two different Arabic programs. The programs were distinct in terms of using two textbooks: a vowelized textbook and an unvowelized textbook. Participants performed word list reading, text reading, and word comprehension tasks. Results showed an advantage in reading speed, accuracy, and comprehension for learners who

used a vowelized textbook. The study controlled for the role of input, repeated encounters, and the nature of exposure to diacritics. Results provided important implications for teaching Arabic and strongly supported the position that explicit training on shallow orthography (diacritics) can enhance reading skills at large while the implicit approach can slow reading development.

Little is done in ASLA regarding the role of morphological awareness in reading comprehension and acquisition. Most research was devoted to native speakers, particularly school children (e.g., Tibi & Kirby, 2017; Layes et al., 2017). Tibi et al. (2019) pointed out that morphological awareness has not been sufficiently tested in Arabic reading outcomes. They validated root awareness as one aspect that can be used to assess morphological knowledge of Arabic. Priming studies such as Boudelaa and Marslen-Wilson (2011) and Shalhoub-Awwad and Leikin (2016) showed that root recognition facilitated lexical decision and word recognition. In the L2 Arabic classroom, there is no clear pedagogical consensus among instructors on how to best approach root-and-pattern morphology for raising learners' awareness and supporting language development. Little research is done to answer these questions. Redouane (2003) compared the performance of L2 Arabic learners with native speakers of

Arabic and found an advantage of explicit exposure to morphological rules in lexical development and learners' use of word-formation processes. Incidental communicative instruction did not show similar effects on morphological knowledge and performance. There was a role of vocabulary knowledge as higher-level students performed better in using morphological rules. In similar lines, Khoury (2008) examined the effect of the explicit teaching of the root-and-pattern word-formation system to students of AFL. She recruited a total of 109 beginning learners of Arabic. Participants were formed into two groups: control and experimental. The experimental group received explicit root-and-pattern instruction, while the control group did not. Results showed that students who received explicit instruction on roots and patterns were significantly better at inferring the meaning of unfamiliar words when root information was provided.

Taken together, both studies suggest that explicit morphological instruction on roots and patterns is crucial at early stages. On the other hand, Ryding (2018) advocated a lexical approach in which instructors should first focus on building core vocabulary while delaying derivational morphology, mirroring the experience of native speakers who develop this knowledge over time and through later formal instruction.

More longitudinal studies are needed to track learner development from explicit and implicit instruction. A more integrated performance approach can be adopted to compare learners' production in different language skills, i.e., listening, reading, writing, and speaking. In general terms, how can knowledge of diacritics, root and pattern, and morphology predict learner performance on the proficiency continuum? One practical study would develop reading material and compare the performance of learners with explicit and implicit training on these aspects (diacritics and root-and-pattern morphology) in terms of their lexical processing and reading comprehension. Findings from this strand of research would inform pedagogical practices in a communicative classroom, particularly evaluating the outcomes of an explicit form-focused approach against the incidental meaning-based strategies in teaching these intricate morphological aspects of the language.

Research task 2: Developing task-based studies that integrate more communicative components to explore the role of the dynamic classroom environment in vocabulary learning.

Recent research has emphasized the crucial role of vocabulary instruction in learner development (e.g., Schmitt, 2008, 2010; Loewen, 2020; Laufer & Girsai, 2008; Webb & Nation, 2017; Grabe & Stoller, 2019). Vocabulary learning has been examined from the perspective of the amount and quality of processing, which is fostered by many factors that include (but are not limited to) frequency of exposure, attention to target words, increased noticing of the lexical items, intention and need to learn the word, increased manipulation of word properties, the amount of time spent with the lexical item, and the amount of interaction spent around the vocabulary (See Schmitt, 2008 for a comprehensive review). Based on Craik and Lockhart's (1972) depth of processing hypothesis, frameworks such as the involvement load hypothesis (ILH) (Laufer & Hulstijn, 2001) and the technique feature analysis (TFA) (Nation & Webb, 2011) were set to account for learning outcomes from vocabulary tasks with varying degrees of cognitive effort and/or engagement. Laufer and Hulstijn (2001) proposed the ILH to explain how much influence tasks have in facilitating deep processing for learners' vocabulary

knowledge. The ILH is based on three main components: need, search, and evaluation. In general terms, the more a learning task promotes each of the three components, the higher the vocabulary gains of learners should be. Many studies expanded the ILH and provided supporting evidence (e.g., Huang, Willson & Eslami, 2012; Keating, 2008; Kim, 2008a; Nassaji & Hu, 2012; Alanazi, 2019).

In the field of Arabic language acquisition, Golonka et al. (2015) utilized the ILH to teach Arabic vocabulary to intermediate learners. In line with the hypothesis, they concluded that higher cognitive effort yielded better retention regardless of context. On similar lines, Mohamed (2016) supported the hypothesis while pointing to a role of proficiency that interacted with learning outcomes. Additionally, individual variations in completing the tasks yielded different results, with higher gains for those who performed the tasks with higher accuracy. Findings from these studies provided insights into the value of allocating more time and scaffolding activities to support incidental learning, which would allow for repeated exposure of the target words.

The TFA proposed by Nation and Webb (2011) included five components: motivation, noticing, retrieval,

generation, and retention. This model was aimed at teachers, providing a more detailed assessment criterion for teaching materials and class-based activities. Several studies tested the predictive power of TFA in vocabulary learning (Gohar, Rahmanian, & Soleimani, 2018; Hu & Nassaji, 2016; Khoshsima & Eskandari, 2017; Zou & Xie, 2018; Hirata, 2019). However, all those studies were conducted in a lab-based/individual setting. One study (Rabie-Ahmed & Mohamed, in press) used the TFA framework in a task-based collaborative classroom setting. Their results highlighted the superiority of the collaborative setting over the individual performance as it increased the cognitive load, which resulted in more vocabulary gains.

Task-based approaches to vocabulary learning extend beyond individual performance and focus more on group-based collaborative learning in the classroom. One popular approach in second language acquisition (SLA) research is the input/interaction/output hypothesis (Gass, 1997). It holds that communication and conversation in class can push language learning, particularly when negotiation occurs. Receiving feedback and correction draws learners' attention to problems in their language production (Mackey, Gass, & McDonough, 2000). Findings from interaction research showed that feedback, correction, and negotiation play a

facilitative role in language development (e.g., Loewen & Nabei, 2007; Mackey & Silver, 2005; Ellis, Loewen, & Erlam, 2006; Li, 2010; Loewen, 2005; Loewen & Philp, 2006; Lyster, 2004; Mackey, 2006; Sheen, 2007). Under the interactional approach, researchers were interested in vocabulary as an important aspect of language development. They tested the relationship between interactive tasks and vocabulary learning and provided implications for conversation-based tasks in the classroom (Brown, Sagers, & LaPorte, 1999; de la Fuente, 2002; Ellis et al., 1994; Ellis & He, 1999, Mohamed, 2012). In sum, task-based approaches are mainly geared toward collaborative learning to achieve the learning objectives through communication among peers and with teachers. Although the word *collaborative* would give the impression that it is confined to conversational activities or speaking tasks, students can collaborate on different reading and writing tasks to achieve vocabulary learning objectives (e.g., Kim, 2008b). In that sense, vocabulary acquisition research would be more realistic and reflective of the learning environment when conducted in a task-based/collaborative setting.

With a focus on communicative classrooms, pedagogically oriented research established collaborative learning in a communicative language class as more effective in vocabulary development since learners get the chance to

receive and produce output (e.g., de la Fuente, 2006; Dobao, 2014; Kim, 2008b; Nassaji & Tian, 2010; Niu & Helms-Park, 2013; Storch & Wigglesworth, 2007). The context of teaching and learning Arabic has received little attention in this regard. Little is known about learners' engagement, interaction, feedback, vocabulary uptake, and teachers' perspectives and approaches in developing learners' lexical competence in the Arabic classroom. Looking at the feedback, quantitatively and qualitatively, in Arabic conversational activities, Atanassova (2012) found significant effects of proficiency on learners' perception of feedback and class communication. Rabie-Ahmed and Mohamed (in press) found a clear advantage for collaborative learning over individual-based tasks with learners of Arabic in their second semester. They mainly examined the role of collaborative vocabulary learning in promoting deeper processing of new vocabulary, which in turn resulted in more vocabulary gains. There is yet a promising ground for research in this area. While their study focused on beginner learners of Arabic, future studies could replicate Rabie-Ahmed and Mohamed's study with other proficiency levels of learners and examine the variable effects of task engagement in vocabulary acquisition.

Additionally, researchers could use the two vocabulary processing frameworks (ILH and TFA) to evaluate the

effectiveness of different vocabulary tasks or activities in the communicative class setting. With the recent abrupt transition to remote learning, an even more fertile ground of research is how pedagogical practices of Arabic can accommodate collaborative learning in remote settings. Researchers can find more information about ILH and TFA's application in Laufer and Hulstijn (2001) and Nation and Webb (2011).

Research task 3: Examining the role of extensive reading in Arabic vocabulary learning through offline and online measures.

It is commonly agreed that learners can gain vocabulary from readings within their lexical coverage (Nation, 2001, 2006). Textbooks generally fall short of achieving vocabulary learning goals efficiently. Moser (2021) pointed out that learners of Arabic would not be exposed to sufficient frequent vocabulary through their formal curricula. This requires attention to developing learners' lexical competence independently through authentic resources. One recognized route in language programs has been through extensive reading. In English language teaching, extensive reading programs have used graded readers to expand learners' vocabulary learning resources (Horst, 2005; Lai, 1993; Parry, 1991). Most studies (e.g., Chen & Truscott, 2010; Horst, 2005;

Pellicer-Sanchez & Schmitt, 2010; Pigada & Schmitt, 2006; Webb, 2005, 2007) pointed to the effect of repeated exposure through reading. Specifically, an average of 8 to 10 repetitions was shown to be appropriate for the development of receptive knowledge of vocabulary with relatively low gains in productive knowledge. Webb (2008) found that while repetition supported form recognition (identifying how the word looks), the quality of context was associated more with meaning recognition (identifying the meaning of the word). Thus, a rich context aids guessing and retention. Joe (2010) found that encountering target words repeatedly in a wide range of tasks is more conducive to vocabulary retention than contextual richness. Hu (2013) found a similar conclusion in that repeated exposure affected knowledge of form while contextual richness was more beneficial to form-meaning connections and grammatical functions.

Little effort has been given to extensive reading in Arabic pedagogy. An attempt to publish graded readers in Arabic was made by Khorshid (2009), who authored simplified stories titled *Sahlawayhi*, including gradual introduction and recycling of vocabulary at three levels. Although these stories are non-authentic and may be viewed as artificial, they open the space for more effort in this direction. In reading research, longitudinal studies can be conducted to examine learners'

lexical development. In this regard, Arabic language programs need to take steps toward launching extensive reading components in their curricula. Such an endeavor comes with major challenges as designing reading material or graded reading should be based on corpus-based resources, which the Arabic language does not enjoy as much as English. Whitcomb and Alansary (2017) reviewed the available corpora and demonstrated the need to utilize them for teaching and learning. Among frequently cited projects is Buckwalter and Parkinson (2014), who published a frequency dictionary of Arabic as a tool for all learners of Arabic, providing a list of the 5,000 most frequently used words in Modern Standard Arabic (MSA), as well as several of the most widely spoken Arabic dialects. It is highly recommended that Arabic language research take advantage of these resources for developing reading material, textbooks, and testing instruments. A research agenda on the role of extensive reading in Arabic vocabulary learning should be implemented. An example of a future study in this area would be the use of existing Arabic graded readers (e.g., Khorshid's Sahlawayhi mentioned above) to measure vocabulary growth over time. Another future study could explore how students benefit from authentic literary sources in terms of comprehensibility and vocabulary gains.

While paper-and-pencil research measured vocabulary processing offline (i.e., after reading), another approach, eye tracking, has been used to measure the online processing of vocabulary and context while and after reading. This approach hypothesized a link between online processing and vocabulary outcomes. This assumption was coined the eye-mind link, which proposes a connection between overt and covert attention (Godfroid, 2012, 2019). Studies on eye-tracked reading generally concluded that learners spend more processing time on unknown words in context and that the amount of time spent on target words predicts the amount and quality of learning vocabulary from reading (e.g., Chaffin, Morris, & Seely, 2001; Godfroid et al., 2018; Godfroid, Boers, & Housen, 2013; Rayner, 2009; Mohamed, 2018a; Pellicer-Sánchez, 2016, 2020; Williams & Morris, 2004).

Little has been done in researching Arabic vocabulary using the eye-tracking method. For example, Mohamed (2018b) used Arabic sentences with embedded pseudo words in different exposure conditions. Eye-movement results showed that learners fixated more on initial encounters with target words and that their fixation times gradually decreased from first to last exposure. The longer they looked at novel words, the more learning gains they reported, particularly in meaning recognition and recall of these words. The study

provided practical implications and further directions for investigating the cognitive aspects of reading comprehension and incidental vocabulary acquisition in L2 Arabic. It is of particular interest to vocabulary researchers because it can capture incidental learning processes while and after reading. One future study can explore the online reading of Arabic graded readers with embedded target words, which can provide unique data about learners' processing of novel vocabulary and contextual information. It will also shed light on the issues raised earlier in this article about the role of diacritics and root morphology. A recent review by AlJassmi et al. (2021) highlights the eye-tracking research done with Arabic reading and presents key theoretical questions to be examined empirically. With most studies focusing on ESL, there is a need for looking at less represented languages, particularly Arabic, while providing implications regarding text direction and non-Roman scripts in eye-tracking research.

Research task 4: Examining the plausibility of teaching standard Arabic and a dialect simultaneously.

Arabic is a diglossic/multiglossic language in which at least two varieties (MSA and the dialects) are used under different conditions within speech communities, often by the same speakers. Ferguson (1959) maintains that diglossia refers

to a linguistic situation whereby there are two connected varieties of a given community's language—one is considered as the high (H) or standard variety, while the other one is seen as the low (L) or nonstandard variety. In the Arab world, spoken Arabic differs from one country to another, while the written language is almost the same. Thus, the diglossic nature of Arabic increases the amount of language that students need to learn.

In fact, the field of teaching and learning Arabic as a multiglossic and multidialectal language poses practical challenges and unsolved debates. Ryding (2018) used the term “reverse privileging” to refer to the fact that MSA, the secondary discourse, is taught first, while the dialect is inadequately taught even though it should be the primary discourse. The debate on diglossia in the Arabic classroom raises critical questions on what vocabulary and language structures to teach. Students need standard Arabic vocabulary to learn their grammar, read authentic texts, and write adequately. However, they remain alienated from the spoken dialect and the culture even after several years of Arabic instruction. Hence, teaching dialects has an important role because it particularly taps into intercultural competence in a second language. Most practitioners in the field have generally implemented the integrated approach, in which MSA is taught along with at least one spoken dialect (e.g., Al-Batal, 1992,

2017; Younes, 2006, 2014; Wahba, 2006). The core idea of integration was implemented using dialect in the classroom while delivering standard Arabic mostly through homework and other reading and writing assignments. Other teachers implemented this integration in various ways. For example, some programs teach dialects separately after sufficient exposure to MSA, while others teach them side-by-side by devoting certain hours over the semester for a dialect component.

Research on diglossia in the Arabic classroom has been mostly qualitative and descriptive in nature. For instance, Al-Batal (2017) compiled a volume entitled “Arabic as One Language,” advocating the role of learning and using dialects in developing students’ competence. The studies featured in the book addressed the different models of integration, reported learning outcomes from some programs, discussed students’ perceptions of learning dialects, and presented teachers’ voices and their preparedness for the implementation of the integrated approaches.

Some research addressed the significance of diglossia from the perspective of study-abroad programs (e.g., Palmer, 2008; Trentman, 2013). The main argument in these studies is that teaching dialects delivers a more realistic immersion

experience of the language and provides a rich space for developing learners' sociolinguistic competence. More recently, the concept of translinguaging—the implementation of more than one language in the process of language learning in the classroom (Garcia, 2009)—presented itself in the field of second language learning as a viable strategy to fully use the whole linguistic repertoire of learners (Creese & Blackledge, 2010). This new trend has raised initial discussion in Arabic-related research (e.g., Abourehab & Azaz, 2020; Azaz & Abourehab, 2021; Al Masaeed, 2020). These studies presented somewhat contrasting perspectives on the viability of the concept in the Arabic classroom. With this research strand in its infancy, the field is still open for further investigation that would inform pedagogical practices in the upcoming years.

The proficiency guidelines for Arabic by the American Council on the Teaching of Foreign Languages (ACTFL) highlight the need to be competent in standard Arabic and at least one spoken dialect to achieve a superior level in the language. While the majority of teachers agree on the importance of teaching dialects, most research on its efficacy remains anecdotal rather than empirical. Additionally, more research needs to be done in an actual classroom setting (Trentman, 2011). Regarding vocabulary research in ASLA, a major research task that needs to be conducted is to examine

the plausibility of teaching standard Arabic and a dialect simultaneously and how it might influence (either positively or negatively) the learners' vocabulary acquisition. Researchers could examine the rate of vocabulary gains in classes that teach standard Arabic and a dialect or dialects simultaneously and compare such gains with other classes that focus solely on teaching standard Arabic.

Moreover, researchers could examine the effects of the simultaneous teaching of standard Arabic and dialects on reading competence. This can be carried out from many different perspectives. One possibility would be to investigate the differences in reading speed and reading comprehension of students who study standard Arabic only versus students who get a component of dialects.

Finally, it would be interesting to establish whether there is an ordering effect of teaching the standard and the dialect variety in the classroom setting. A critical question to pose here is whether teaching a spoken variety along the standard Arabic curriculum would boost or delay learners' communicative fluency. Many aspects of transfer and translingual practices could be revealed through a carefully designed study and analysis of class input and learning outcomes. An additional route that studies on diglossia can take is the development of sociolinguistic competence and

sociopragmatics through language instruction. Since pragmatic competence can more practically be achieved through the spoken dialect, it becomes imperative for Arabic programs to take the lead in developing curricula and research instruments to probe into this promising area of research.

Conclusion

In this research agenda, we reviewed the current state of ASLA research, particularly in the domains of reading, vocabulary, and integrated instruction of diglossia. This review discusses the challenges related to Arabic in terms of diacritics, root-and-pattern morphology, learning rich and variable vocabulary from reading, and juggling between standard Arabic forms and speaking competence in a dialect. It shows that the field has yet to take significant strides toward establishing a research-informed pedagogy and standards-based curricula that allow researchers to explore areas that are more practically relevant to the actual Arabic classroom environment. More empirical and controlled studies need to be conducted to confirm or disconfirm teachers' beliefs and assumptions about learners' development in Arabic as a second language. While basing arguments and hypotheses on established theories from studies in other languages, research in the Arabic classroom will redefine these theories and create

Arabic-specific paradigms that would inform pedagogical practices to achieve learning goals and meet learners' demands and expectations.

References

- Abourehab, Y. & Azaz, M. (2020). Pedagogical translanguaging in community/heritage Arabic language learning. *Journal of Multilingual and Multicultural Development*. doi: 10.1080/01434632.2020.1826496.
- Abu-Liel, A. K., Ibrahim, R., & Eviatar, Z. (2021). Reading in multiple Arabics: Effects of diglossia and orthography. *Reading and Writing*, 1–26.
- Abu-Rabia, S. (1995). Learning to read in Arabic: Reading, syntactic, orthographic and working memory skills in normally achieving and poor Arabic readers. *Reading Psychology: An International Quarterly*, 16(4), 351–394.
- Abu-Rabia, S. (1997). Reading in Arabic orthography: The effect of vowels and context on reading accuracy of poor and skilled native Arabic readers. *Reading and Writing: An Interdisciplinary Journal*, 9, 65–78.
- Abu-Rabia, S. (1999). The effect of vowels on the reading comprehension of second-and sixth-grade native Arab children. *Journal of Psycholinguistic Research*, 28, 93–101.
- Abu-Rabia, S. (2001). The role of vowels in reading Semitic scripts: Data from Arabic and Hebrew. *Reading and Writing: An Interdisciplinary Journal*, 14, 39–59.

- Abu-Rabia, S. (2002). Reading in a root-based-morphology language: The case of Arabic. *Journal of Research in Reading*, 25(3), 299–309. doi: 10.1111/1467-9817.00177.
- Abu-Rabia, S. (2007). The role of morphology and short vowelization in reading Arabic among normal and dyslexic readers in grades 3, 6, 9, and 12. *Journal of Psycholinguistic Research*, 36(2), 89–106.
- Abu-Rabia, S. (2019). The role of short vowels in reading Arabic: A critical literature review. *Journal of Psycholinguistic Research*, 48(4), 785–795.
- Abu-Rabia, S., & Awwad, J. (2004). Morphological structures in visual word recognition: The case of Arabic. *Journal of Research in Reading*, 27(3), 321–336.
- Abu-Rabia, S., & Saliba, F. (2008). The lexical status of basic Arabic verb morphemes among dyslexic children. *Australian Journal of Learning Difficulties*, 13(2), 115–144.
- Abu-Rabia, S. & Siegel, L. (1995). Different orthographies: Different context effects. *Reading Psychology*, 16(1), 1–19. doi: 10.1080/0270271950160101.
- Alanazi, Z. (2019). The effects of a sentence completion task vs. a sentence generation task on vocabulary learning: An exploratory study. *Linguistics Journal*, 13(1).

- Al-Batal, M. (1992) Diglossia proficiency: The need for an alternative approach to teaching. In A. Rouchdy (Ed.), *The Arabic language in America* (284–304). Wayne State University Press.
- Al-Batal, M. (Ed.). (2017). *Arabic as one language: Integrating dialect in the Arabic language curriculum*. Georgetown University Press.
- Alhawary, M. T. (2018). Empirical directions in the future of Arabic second language acquisition and second language pedagogy. In *Handbook for Arabic Language Teaching Professionals in the 21st Century* (408–421). Routledge.
- AlJassmi, M. A., Hermena, E. W., & Paterson, K. B. (2021). Eye movements in Arabic reading. *Experimental Arabic Linguistics*, 10, 85.
- Almadi, N. (2007). *The contribution of short vowels to reading aloud and silent reading of dyslexic and regular readers*. (Master Thesis, University of Haifa).
- Al Masaeed, K. (2020). Translanguaging in L2 Arabic study abroad: Beyond monolingual practices in institutional talk. *The Modern Language Journal*, 104(1), 250–266. doi:10.1111/modl.12623.
- Atanassova, G. (2012). Beginning and advanced learners' awareness of corrective feedback in the Arabic foreign

language classroom (Doctoral dissertation, Georgetown University).

- Azaz, M., & Abourehab, Y. (2021). Should standard Arabic have “the lion’s share”? Teacher ideologies in L2 Arabic through the lens of pedagogical translanguaging. *Journal of Intercultural Communication Education*, 4 (1), 90–105.
- Boudelaa, S., & Marslen-Wilson, W. D. (2011). Productivity and priming: Morphemic decomposition in Arabic. *Language and Cognitive Processes*, 26(4–6), 624–652.
- Brosh, H. (2015). Arabic spelling: Errors, perceptions, and strategies. *Foreign Language Annals*, 48(4), 584–603. doi: 10.1111/flan.12158.
- Brown, C., Sagers, S. L., & LaPorte, C. (1999). Incidental vocabulary acquisition from oral and written dialogue journals. *Studies in Second Language Acquisition*, 21(2), 259–283.
- Buckwalter, T., & Parkinson, D. (2014). *A frequency dictionary of Arabic: Core vocabulary for learners*. Routledge.
- Chaffin, R., Morris, R. K., & Seely, R. E. (2001). Learning new word meanings from context: A study of eye movements. *Journal of Experimental Psychology: Learning, Memory, and Cognition*, 27(1), 225–235.

- Chen, C., & Truscott, J. (2010). The effects of repetition and L1 lexicalization on incidental vocabulary acquisition. *Applied Linguistics*, 31(5), 693–713.
- Craik, F. I., & Lockhart, R. S. (1972). Levels of processing: A framework for memory research. *Journal of Verbal Learning and Verbal Behavior* 11, 671–84.
- Creese, A., & Blackledge, A. (2010). Translanguaging in the bilingual classroom: A pedagogy for learning and teaching? *The Modern Language Journal*, 94(1), 103–115.
- de la Fuente, M.J. (2002) Negotiation and oral acquisition of Spanish L2 vocabulary: The roles of input and output in the receptive and productive acquisition of words. *Studies in Second Language Acquisition* 24, 81–112.
- de la Fuente, M. (2006). Classroom L2 vocabulary acquisition: Investigating the role of pedagogical tasks and form-focused instruction. *Language Teaching Research*, 10(3), 263–295. doi: 10.1191/1362168806lr196oa.
- Dobao, A. (2014). Vocabulary learning in collaborative tasks: A comparison of pair and small group work. *Language Teaching Research*, 18(4), 497–520. doi: 10.1177/1362168813519730.
- Ellis, R., & He, X. (1999). The roles of modified input and output in the incidental acquisition of word meanings. *Studies in Second Language Acquisition*, 21, 285–301.

- Ellis, R., Loewen, S., & Erlam, R. (2006). Implicit and explicit corrective feedback and the acquisition of L2 grammar. *Studies in Second Language Acquisition*, 28, 339–368.
- Ellis, R., Tanaka, Y., & Yamazaki, A. (1994). Classroom interaction, comprehension and the acquisition of L2 word meanings. *Language Learning*, 44, 449–491.
- Ferguson, C.H. (1959). Diglossia. *Word*, 15, 325–340.
- García, O. (2009). Education, multilingualism and translanguaging in the 21st century. In A. Mohanty, M. Panda, R. Phillipson & T. Skutnabb-Kangas (Eds.), *Multilingual education for social justice: Globalising the local* (pp. 128–145). New Delhi, India: Orient Blackswan
- Gass, S. (1997). *Input, interaction and the development of second languages*. Mahwah, NJ: Lawrence Erlbaum Associates.
- Godfroid, A. (2012). Eye tracking. In P. Robinson (Ed.). *The Routledge encyclopedia of second language acquisition* (234–236). New York/London: Routledge.
- Godfroid, A. (2019). Investigating instructed second language acquisition using L2 learners' eye-tracking data. In *The Routledge handbook of second language research in classroom learning* (44–57). Routledge.
- Godfroid, A., Boers, F., & Housen, A. (2013). An eye for words: Gauging the role of attention in incidental L2

- vocabulary acquisition by means of eye-tracking. *Studies in Second Language Acquisition*, 35(3), 483–517. doi: 10.1017/S0272263113000119.
- Godfroid, A., Ahn, J., Choi, I., Ballard, L., Cui, Y., Johnston, S., & Yoon, H. J. (2018). Incidental vocabulary learning in a natural reading context: An eye-tracking study. *Bilingualism: Language and Cognition*, 21(3), 563–584.
- Gohar, M., Rahmanian, M., & Soleimani, H. (2018). Technique feature analysis or involvement load hypothesis: Estimating their predictive power in vocabulary learning. *Journal of Psycholinguistic Research*, 47(4), 859–869. doi: 10.1007/s10936-018-9568-5.
- Goldberg, D., Looney, D., & Lusin, N. (2015). Enrollment in languages other than English in institutions of higher education. Report of the Modern Language Association, Available at: www.mla.org/pdf/2013_enrollment_survey.pdf.
- Golonka, E., Bowles, A., Silbert, N., Kramasz, D., Blake, C., & Buckwalter, T. (2015). The role of context and cognitive effort in vocabulary learning: A study of intermediate-level learners of Arabic. *The Modern Language Journal*, 99(1), 19–39.
- Grabe, W., & Stoller, F. L. (2019). *Teaching and researching reading*. Routledge.

- Hansen, G. (2010). Word recognition in Arabic as a foreign language. *The Modern Language Journal*, 94(4), 567–581. doi: 10.1111/j.1540-4781.2010.01094.x.
- Hirata, M. (2019). Evaluating multi-skill vocabulary activities using the technique feature analysis (TFA) framework. *The Journal of Asiatefl*, 16(1), 377–384. doi: 10.18823/asiatefl.2019.16.1.27.377.
- Horst, M. (2005). Learning L2 vocabulary through extensive reading: A measurement study. *The Canadian Modern Language Review*, 61(3), 355–382. doi: 10.3138/cmlr.61.3.355.
- Hu, H. C. M. (2013). The effects of word frequency and contextual types on vocabulary acquisition from extensive reading: A case study. *Journal of Language Teaching and Research*, 4(3), 487–495.
- Hu, H., & Nassaji, H. (2016). Effective vocabulary learning tasks: Involvement load hypothesis versus technique feature analysis. *System*, 56, 28–39. doi: 10.1016/j.system.2015.11.001.
- Huang, S., Willson, V., & Eslami, Z. (2012). The effects of task involvement load on L2 incidental vocabulary learning: A meta-analytic study. *Modern Language Journal*, 96(4), 544–557.
- Husaini, N. S., & Mohamed, N. (2020). Vocabulary size in Arabic language among undergraduate students of

- Arabic language for professional communication, *UiTM. International Journal of Modern Languages and Applied Linguistics*, 4(2), 38–62.
- Ibrahim, R. (2013). Reading in Arabic: New evidence for the role of vowel signs. *Creative Education*, 4(04), 248.
- Joe, A. (2010). The quality and frequency of encounters with vocabulary in an English for academic purposes programme. *Reading in a Foreign Language*, 22(1), 117–138.
- Keating, G. D. (2008). Task effectiveness and word learning in a second language: The involvement load hypothesis on trial. *Language Teaching Research*, 12, 365–386.
- Khaldieh, S. (2001). The relationship between knowledge of Icrab, lexical knowledge, and reading comprehension of nonnative readers of Arabic. *The Modern Language Journal*, 85(3), 416–431. doi: 10.1111/0026-7902.00117.
- Khorshid, A. (2009). *Sahlawayhi: Graded stories for beginners: set 1 (550 words)*. American University in Cairo.
- Khoshsim, H., & Eskandari, Z. (2017). Task effectiveness predictors: Technique feature analysis vs. involvement load hypothesis. *Iranian Journal of English for Academic Purposes*, 6(2), 50–69.

- Khoury, G. (2008). Vocabulary acquisition in Arabic as a foreign language: The root and pattern strategy (Ph.D. dissertation). Boston University, Boston, USA.
- Kim, Y. (2008a). The role of task-induced involvement and learner proficiency in L2 vocabulary acquisition. *Language Learning*, 58, 285–325.
- Kim, Y. (2008b). The contribution of collaborative and individual tasks to the acquisition of L2 vocabulary. *The Modern Language Journal*, 92, 114–130.
- Lai, F. K. (1993). The effect of a summer reading course on reading and writing skills. *System*, 21, 87–100.
- Laufer, B., & Girsai, N. (2008). Form-focused instruction in second language vocabulary learning: A case for contrastive analysis and translation. *Applied Linguistics*, 29(4), 694–716.
- Laufer, B., & Hulstijn, J. (2001). Incidental vocabulary acquisition in a second language: The Construct of Task-Induced Involvement. *Applied Linguistics*, 22(1), 1–26.
- Layes, S., Lalonde, R., & Rebaï, M. (2017). Study on morphological awareness and rapid automatized naming through word reading and comprehension in normal and disabled reading Arabic-speaking children. *Reading & Writing Quarterly*, 33(2), 123–140.

- Li, S. (2010). The effectiveness of corrective feedback in SLA: A meta-analysis. *Language Learning*, 60(2).
- Loewen, S. (2005). Incidental focus on form and second language learning. *Studies in Second Language Acquisition*, 27, 361–386.
- Loewen, S. (2020). *Introduction to instructed second language acquisition*. Routledge.
- Loewen, S., & Nabei, T. (2007). Measuring the effects of oral corrective feedback on L2 knowledge. In A. Mackey (Ed.), *Conversational interaction in second language acquisition* (361–377). Oxford: Oxford University Press.
- Loewen, S., & Philp, J. (2006). Recasts in the adult English L2 classroom: Characteristics, explicitness and effectiveness. *The Modern Language Journal*, 90(iv), 536–556.
- Looney, D., & Lusin, N. (2019, June). Enrollments in languages other than English in United States institutions of higher education, Summer 2016 and Fall 2016. In Modern Language Association. Modern Language Association. 26 Broadway 3rd Floor, New York, NY 10004-1789.
- Lyster, R. (2004). Differential effects on prompts and recasts in form-focused instruction. *Studies in Second Language Acquisition*, 26, 399–432.

- Mackey, A. (2006). Feedback, noticing and instructed second language learning. *Applied Linguistics*, 27, 405–430.
- Mackey, A., Gass, S., & McDonough, K. (2000). How do learners perceive interactional feedback? *Studies in Second Language Acquisition*, 22, 471–497.
- Mackey, A., & Silver, R. E. (2005). Interactional tasks and English L2 learning by immigrant children in Singapore. *System*, 33, 239–260.
- Masrai, A., & Milton, J. (2019). How many words do you need to speak Arabic? An Arabic vocabulary size test. *The Language Learning Journal*, 47(5), 519–536.
- Midhwah, A. A., & Alhawary, M. T. (2020). Arabic diacritics and their role in facilitating reading speed, accuracy, and comprehension by English L2 Learners of Arabic. *The Modern Language Journal*, 104(2), 418–438.
- Mohamed. A (2012). Investigating incidental vocabulary acquisition in conversation classes: A qualitative and quantitative analysis. *MSU Working Papers in SLS*, 3(1), 30–48.
- Mohamed. A (2016). Task-based incidental vocabulary learning in L2 Arabic: The role of proficiency and task performance. *JNCOLCTL*, 18, 121–157.
- Mohamed, A. A. (2018a). Exposure frequency in L2 reading: An eye-movement perspective of incidental vocabulary

- learning. *Studies in Second Language Acquisition*, 40(2), 269–293.
- Mohamed, A. A. (2018b). Looking at words: An eye-tracking investigation of L2 Arabic vocabulary learning. In *Routledge Handbook of Arabic Second Language Acquisition* (149–166). Routledge.
- Moser, J. (2021). Evaluating Arabic textbooks: A corpus-based lexical frequency study. *International Journal of Applied Linguistics*, 31(2), 248–263.
- Mughazy, M. (2005) Reading despite ambiguity: The role of metacognitive strategies in reading Arabic authentic texts. *Al-'Arabiyya*, 38/39, 57–74.
- Nassaji, H., & Hu, H. C. M. (2012). The relationship between task-induced involvement load and learning new words from context. *International Review of Applied Linguistics in Language Teaching*, 50(1), 69–86.
- Nassaji, H., & Jun Tian. (2010). Collaborative and individual output tasks and their effects on learning English phrasal verbs. *Language Teaching Research*, 14(4), 397–419. doi: 10.1177/1362168810375364.
- Nation, I. S. P. (2001). *Learning vocabulary in another language*. Cambridge; New York: Cambridge University Press. doi: 10.1017/CBO9781139524759.

- Nation, I. S. P. (2006). How large a vocabulary is needed for reading and listening? *Canadian Modern Language Review*, 63, 59–82.
- Nation, I. S., & Webb, S. A. (2011). *Researching and analyzing vocabulary*. Boston, MA: Heinle, Cengage Learning.
- Niu, R., & Helms-Park, R. (2013). Interaction, modality, and word engagement as factors in lexical learning in a Chinese context. *Language Teaching Research*, 18(3), 345–372. doi: 10.1177/1362168813510383.
- Palmer, J. (2008). Arabic diglossia: Student perceptions of spoken Arabic after living in the Arabic-speaking world. *Journal of Second Language Acquisition and Teaching*, 15, 81–95.
- Parry, K. (1991). Building a vocabulary through academic reading. *TESOL Quarterly*, 25, 629–653.
- Pellicer-Sánchez, A. (2016). Incidental L2 vocabulary acquisition from and while reading: An eye-tracking study. *Studies in Second Language Acquisition*, 38(1), 97–130.
- Pellicer-Sánchez, A. (2020). Expanding English vocabulary knowledge through reading: Insights from eye-tracking studies. *RELC Journal*, 51(1), 134–146.
- Pellicer-Sanchez, A., & Schmitt. (2010). Incidental vocabulary acquisition from an authentic novel: Do things fall apart? *Reading in a Foreign Language*, 22(1), 31–55.

- Pigada, M., & Schmitt, N. (2006). Vocabulary acquisition from extensive reading: A case study. *Reading in a Foreign Language*, 22(1), 1–28.
- Rabie-Ahmed, A., & Mohamed, A. (in press). Collaborative vocabulary learning in an online Arabic classroom: Revisiting involvement load and technique feature analysis in vocabulary teaching activities. *Foreign Language Annals*.
- Rayner, K. (2009). Eye movements and attention in reading, scene perception, and visual search. *The Quarterly Journal of Experimental Psychology*, 62(8), 1457–1506.
- Redouane, R. (2003). Learners' variability in coining new words in L2. *Al-'Arabiyya*, 49–80.
- Ryding, K. C. (2018). Transcultural content and translingual reflection: Rethinking the Arabic language learning experience. *Language, Politics and Society in the Middle East*, 30–48.
- Ryding, K. C., & Allen, R. (2013). *Teaching and learning Arabic as a foreign language: A guide for teachers*. Washington, DC: Georgetown University Press.
- Saiegh-Haddad, E. (2005). Correlates of reading fluency in Arabic: Diglossic and orthographic factors. *Reading and Writing*, 18(6), 559–582. doi: 10.1007/s11145-005-3180-4.

- Schmitt, N. (2008). Review article: Instructed second language vocabulary learning. *Language Teaching Research*, 12(3), 329–363. doi: 10.1177/1362168808089921.
- Schmitt, N. (2010). *Researching vocabulary: A vocabulary research manual*. Palgrave Macmillan.
- Shalhoub-Awwad, Y., & Leikin, M. (2016). The lexical status of the root in processing morphologically complex words in Arabic. *Scientific Studies of Reading*, 20(4), 296–310.
- Sheen, Y. (2007). The effects of corrective feedback, language aptitude, and learner attitudes on the acquisition of English. In A. Mackey (Ed.), *Conversational interaction in second language acquisition* (301–322). Oxford: Oxford University Press.
- Storch, N., & Wigglesworth, G. (2007). Writing tasks: Comparing individual and collaborative writing. In M.P. García Mayo (Ed.), *Investigating tasks in formal language learning* (157–177). London: Multilingual Matters.
- Taha, H. (2016). Deep and shallow in Arabic orthography: New evidence from reading performance of elementary school native Arab readers. *Writing Systems Research*, 8(2), 133–142.

- Tibi, S., & Kirby, J. R. (2017). Morphological awareness: Construct and predictive validity in Arabic. *Applied Psycholinguistics*, 38(5), 1019–1043.
- Tibi, S., Tock, J. L., & Kirby, J. R. (2019). The development of a measure of root awareness to account for reading performance in the Arabic language: A development and validation study. *Applied Psycholinguistics*, 40(2), 303–322.
- Trentman, E. (2011). L2 Arabic dialect comprehension: Empirical evidence for the transfer of familiar dialect knowledge to unfamiliar dialects. *L2 Journal*, 3(1).
- Trentman, E. (2013). Imagined communities and language learning during study abroad: Arabic learners in Egypt. *Foreign Language Annals*, 46(4), 545–564.
- Wahba, K. M. (2006). Arabic language use and the educated language user. In Kassem M. Wahba, Zeinab A. Taha, & Liz England (Eds.), *Handbook for Arabic language teaching professionals* (139–155). Mahwah, New Jersey: Lawrence Erlbaum.
- Webb, S. (2005). Receptive and productive vocabulary learning: The effects of reading and writing on word knowledge. *Studies in Second Language Acquisition*, 27(01), 33–52.

- Webb, S. (2007). The effects of repetition on vocabulary knowledge. *Applied Linguistics*, 28, 46–65. doi: 10.1093/applin/aml048.
- Webb, S. (2008). The effects of context on incidental vocabulary learning. *Reading in a Foreign Language*, 20(2), 232–245.
- Webb, S., & Nation, P. (2017). *How vocabulary is learned*. Oxford University Press.
- Whitcomb, L., & Alansary, S. (2017). Using linguistic corpora in Arabic foreign language teaching and learning. In *Handbook for Arabic Language Teaching Professionals in the 21st Century, Volume II* (219–231). Routledge.
- Williams, R.S., & Morris, R.K. (2004). Eye movements, word familiarity, and vocabulary acquisition. *European Journal of Cognitive Psychology*, 16, 312–339.
- Younes, M. (2006). Integrating the colloquial with Fusha in the Arabic as a foreign language classroom. In Kassem M. Wahba, Zeinab A. Taha, & Liz England (Eds.), *Handbook for Arabic language teaching professionals* (157–166). Mahwah, New Jersey: Lawrence Erlbaum.
- Younes, M. (2014). *The integrated approach to Arabic instruction*. Routledge. London.

Zou, D., & Xie, H. (2018). Personalized word-learning based on technique feature analysis and learning analytics. *Journal of Educational Technology & Society*, 21(2), 233–244.