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Hanada Taha Thomure
Zayed University, hanada.taha@zu.ac.ae

Gail Brown
Designed Learning, Australia

Richard Speaker

Haitham Taha
Sakhnin College for Teachers' Education, Israel

Rana Tamim
EduBridges

See next page for additional authors

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Research Article

Arabic Reading Fluency Rates: An Exploratory Study

معدّلات الطلاقة القرائية باللغة العربية: دراسة استطلاعية

Hanada Taha Thomure[1], Gail Brown[2], Richard Speaker[3], Haitham Taha[4], Rana Tamim[5], Nerolie O' Neill[6]

[1]1Endowed Chair of Arabic Language, Zayed University, UAE
[2]Education Consultant, Designed Learning, Australia
[3]Retired. Past Chair of the Department of Curriculum and Instruction, University of New Orleans, Louisiana, USA
[4]Chair of Graduate Studies on Learning Disabilities, Sakhnin College for Teachers' Education, Israel
[5]Founder and CEO, Edubridges, Dubai, UAE
[6]Independent Education Management Professional

ORCID
Hanada Taha Thomure: https://orcid.org/0000-0003-4111-0137

Corresponding Author:
Hanada Taha Thomure;
Email: hanadaster@gmail.com

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Abstract

Reading fluency has been defined as the process of automatically associating graphemic and phonetic information in a text with minimal conscious attention if any at all. Research has found that the effect of fluency on reading proficiency is of importance to student learning and that increasing oral reading fluency (ORF) rates has been correlated in several studies to improved comprehension. However, no reading fluency rates (FR) or standards in Arabic have been established to date. This exploratory study begins to examine Arabic language ORF and proposes an initial Arabic reading fluency scale. Thirty-five teachers from six private bilingual schools across three Arabian Gulf countries (KSA, the UAE, and Kuwait), administered ORF tests that comprised of authentic, vowelized, and leveled Modern Standard Arabic (MSA) connected texts on 1003 students in Grades 1–6 in Fall and Spring of the same academic year. Results of independent samples *t*-test revealed changes in reading fluency between Fall and Spring. Furthermore, the range of FR for these initial data within each grade level was significant. Results obtained, however, appeared to be lower than several of the international ORF charts used for English and Arabic languages. Girls outperformed boys in Grades 1–3, while boys outperformed girls in Grades 4–6. The study has several limitations and several likely implications that extend to languages other than Arabic possibly including the potential importance of extended reading practice and early exposure to text.

الملخص

تُعَرَّف الطلاقة القرائية على أنها عملية ربط معلومات متعلّقة بصوت الحروف في نصّ ما بمعلومات رسم الحروف بشكل آلي وسريع وبأقلّ ما يمكن من الانتباه الواعي. وجدت البحوث أهمية تأثير الطلاقة في كفاءة القراءة على تعلّم الطالب. كما وجدت البحوث أنّ زيادة معدّلات الطلاقة القرائية الشفوية مرتبطة بتحسّن في الفهم القرائي. وبرغم ذلك، فإنّ معدلات أو معايير الطلاقة القرائية الشفوية غير متوفّرة بدقّة باللغة العربية. ستبدأ هذه الدراسة الاستطلاعية بالنظر إلى معدّلات الطلاقة القرائية الشفوية باللغة العربية وستقترح معدّلات مبدئية لذلك. اختبر خمسة وثلاثون معلّما/ة من ستّ مدارس خاصة، ثنائية اللغة في ثلاثة دول عربية (المملكة العربية السعودية، الإمارات العربية المتحدة، الكويت) ١٠٠٣ طالب/ة من الصف الأول الإبتدائي إلى السادس في الطلاقة القرائية الشفوية من خلال نصوص مشكلة وأصيلة باللغة العربية المعيارية المعاصرة. أُجري الاختبار في خريف وربيع السنة الدراسية نفسها. كشفت نتائج العينات المستقلة (اختبار-ت) عن تغيّرات في معدّلات الطلاقة القرائية ما بين الخريف والربيع، كما كشفت عن فروق دالة إحصائيا في الطلاقة القرائية في كل مرحلة صفية. النتائج كشفت أيضا أن معدّلات الطلاقة باللغة العربية أخفض من معدّلات الطلاقة العالمية وتحديدا تلك الموضوعة للغة الإنكليزية. تفوّقت الفتيات على الفتيان في الصفوف ١-٣، بينما تفوّق الفتيان على الفتيات في الصفوف ٤-٦. رُصدت بعض القيود على الدراسة وبعض التَّبِعات التي تمتدّ لربما إلى لغات أخرى ومنها أهمية التدرّب المتكرّر على القراءة وأهمية التعرّض المبكّر للنصوص القرائية.

OPEN ACCESS

Keywords: *Arabic language teaching and learning, Automaticity, Early reading skills, Literacy, Oral reading fluency*

الكلمات المفتاحية: مشاركة الآلية القرائية -- الطلاقة القرائية الشفوية -- القرائية -- تعليم اللغة العربية وتعلّمها -- مهارات القراءة المبكّرة

1. Introduction

The goal of this study is to explore Arabic oral reading fluency (ORF) rates in Grades 1–6, a topic that has been somewhat overlooked in Arabic language teaching and learning. Research has considered that students who are fluent readers in Grade 1 will be fluent readers in Grade 4, and that struggling readers in Grade 1 will most probably be struggling in Grade 4, coupled with decreased motivation and self-esteem (Fuchs et al., 1993; Mullis et al., 2007; OECD, 2015; Park et al., 2015; PIRLS, 2006; Wagner, 2017). Research on reading fluency in languages that use phonemic writing systems, such as English and Arabic, suggests that successful readers are taught to use a whole array of textual features including phonological, orthographic, semantic, and syntactic (AlGhanem & Kearns, 2014; Badian, 1996; Ehri, 2013; Park et al., 2015; Saiegh-Haddad, 2005; Samuels, 2004). Teaching phonemic awareness was found to have an important impact on the development of reading fluency in both English and Arabic, where children first work on the sounds of the letters they are learning at the level of the phoneme (Gillon, 2002; Saiegh-Haddad, 2005; Stanovich, 2000).

1.1. Definitions and theoretical framework

The definition of reading fluency has seen several iterations over time; however, the basic tenets of reading fluency remain generally similar. More recently, reading fluency has been defined as the oral reading that is characterized by accuracy, automaticity, and expressiveness or prosody (Dowd et al, 2020; Hudson et al., 2005; Kuhn et al., 2010; Logan, 1997; Perfetti, 2007). Accuracy helps the reader access meanings of words in text. Automaticity allows readers to be efficient and enables more cognitive capacity to understand texts, while prosody helps the reader to group and stress the words read in an appropriate manner that can impact on comprehension (Ehri, 2002, 2013; Hudson et al., 2005; Kuhn et al., 2010; Lutz & Guthrie, 2008; Moats, 2001; Perfetti, 2007; Wolters et al., 2020). Voice expressiveness or prosody entails using appropriate pauses, pitch, stress, and vocal intonations to help build and interpret the meaning and comprehension of the text (Hussein, 2014; Kuhn & Stahl, 2003; Kuhn et al., 2010;

Lutz & Guthrie, 2008; Park et al., 2015; Veenendaal et al., 2015; Wolters et al., 2020). This more recent definition of fluency is more inclusive according to Sadoski et al. (2012) who argued that the LaBerge and Samuels automaticity model (LaBerge & Samuels, 1974) detailed decoding behaviors and processes but did not account for the more sophisticated reading processes such as word concreteness, imageability, and comprehension. Despite that, and because of the novelty of using fluency measures to assess reading in Arabic language, this paper is based on LaBerge and Samuels' (1974, p. 293) conception of reading fluency that is focused on automaticity which helps decrease the level of attention given to the processing of reading subskills and allows the reader to divert their attention to understanding the text. Automaticity, according to LaBerge and Samuels, is developed through consistent practice and is characterized by speed, ease, and autonomy, enabling cognitive capacity for reading comprehension (Logan, 1997; Samuels, 2004).

LaBerge and Samuels developed a theory of automatic information processing in reading known as the La Berge and Samuels model (LS) (Samuels, 2004). The LS model offered a detailed account of decoding and included four main domains: visual memory, phonological memory, episodic memory, and semantic memory, with reader's attention represented within that framework at each stage. Visual memory is the very first phase in the reading process, where the reader encounters visual stimuli in print including a whole letter, a word, or features of an image such as a straight line, curved line, or arc that could be a feature of a letter. The LS model is designed so that with each new phase, readers acquire more information stored in the memory which helps them with the process of meaning making. Episodic memory uses memories of specific events to help with meaning making, while the semantic memory activates the meanings of the words being read. Selective attention is used in all phases; words that are well-known require minimal attention, while unfamiliar words require more attention and analysis. The analysis mechanism works in all of those phases (LaBerge & Samuels, 1974; Sadoski et al., 2012), so fluency or "automaticity" is defined as the process of automatically or instantly associating graphemic and phonetic information in a text with minimal conscious attention if any at all.

1.2. Educational and clinical use of ORF in Arabic

ORF rates are, in many instances, measured through the quantification of reading words in connected text correctly in a minute (Fuchs et al., 2001). To achieve reading fluency, Fuchs et al. (2001) proposed that students needed explicit and implicit instruction

on phonemic awareness, phonological awareness, alphabetic principle, fluency, and reading in tandem with continuous screening, monitoring, and support. Students who score within a range normed for their grade level and time of year are usually considered progressing and moving toward reading proficiency. Those who score below those ranges might need some form of intervention to help them approach the needed fluency level for their grade.

Several English language ORF studies conducted predominantly in North America have been published to help teachers understand the norms for the number of correct words read per minute in the Fall, Winter, and Spring of each grade level (Good et al., 2001; Hasbrouk & Tindal, 2017; Rasinski, 2003; Wang et al., 2011). Examples of more widely used normed ORF rates include those proposed by Hasbrouk and Tindal (2017), Good et al. (2001), and the curriculum-based measurement also known as the ORF (CBM/ORF) developed by Deno (1985).

There are no similar systems for assessing ORF of connected Arabic text that are widely available and establishing Arabic-specific ORF rates is a need in teaching and learning. However, it is important to note that more recently, research is recognizing that reading speed in different languages might not be the same (Dowd & Bartlett, 2019; Dowd et al., 2020). Reading speed in transparent languages might be of more importance than in opaque languages (Dowd & Bartlett, 2019; Dowd et al., 2020). As such, it is important that establishing fluency benchmarks and expected student reading performance take into consideration the specific language those are targeting (Dowd & Bartlett, 2019).

Reading in Arabic has similarities and differences to reading in English. Arabic and English are both alphabetic languages having an agreed-on and uniform set of graphemes. Arabic language is diglossic (AlMousa, 2007; Ferguson, 1959; Khamis-Dakwar et al., 2012; Obeid, 2010), meaning that it has many regional spoken varieties or spoken Arabic (SpA) coexisting with a standardized written variety (Ferguson, 1959) known as Modern Standard Arabic (MSA). Although SpAs are used for everyday conversation (Saiegh-Haddad, 2005), however, the realm in which MSA is used is quite wide and intertwining with SpAs. MSA is mostly used in media, news broadcasts, newspapers, literary works, formal contexts, some tv shows, children's cartoons, and in schools and textbooks.

Research supports the importance of early and frequent oral exposure to MSA as a tool to help children bridge any gap between their home SpA and MSA, through listening to stories, songs, cartoons, and other forms of oral exposure (Abu-Rabia, 1999; Taha-Thomure et al., 2021).

Table 1

EGRA reading proficiency in selected Arab countries for Grade 2 or 3

Country	Language	Fluency benchmark (correct words per minute [CWPM])
Egypt	Arabic	50
Jordan	Arabic	46
West Bank (Palestine)	Arabic (with diacritics)	30
West Bank (Palestine)	Arabic (without diacritics)	35

Source: RTI International (2017, p. 25).

Besides the results from the Early Grade Reading Assessment (EGRA), no established norms for oral reading rates in Arabic were found and very few studies looked at fluency (Clarke et al., 2015; Dowd & Bartlett, 2019; Dowd et al., 2020; Faour, 2012;). EGRA is a test developed in 2006 for the purpose of measuring students' ability to read basic connected text (Dowd & Bartlett, 2019; Dowd et al., 2020; Dubek & Gove, 2014).

EGRA's Arabic research reported an ORF benchmark of 50 wrcpm by the end of Grade 3 in Egypt (RTI International, 2013; see Table 1). Those benchmarks were set before the actual reading took place depicting the number of words expected to be read correctly by proficient readers in lower primary grades (RTI, 2017).

Additionally, no studies were found regarding the effect of instructional time spent in the language for Arabic (Gulf News, 2016). This is a key point as most private schools in the Arabian Gulf, which form about 60% of all schools, restrict Arabic language teaching and exposure to 45 min a day, while the rest of the time is spent in another language, mostly English. As such, establishing a baseline for the range or number of words that Arabic speaking learners ought to be able to read in Grades 1–6 is important for both learning and for clinical reading intervention purposes.

The purpose of this study is to explore Arabic ORF rates using connected texts for Grades 1–6 native learners in private bilingual schools. The main question that this study explores is: What is the number of CWPM that Arabic speaking students in Grades 1–6 in bilingual schools can read in connected texts written in MSA?

2. Methodology

2.1. Sampling

A convenience nonrandom sampling approach was used for the purpose of this study. Fifteen private schools operating in three Arabian Gulf countries (the KSA, the UAE, and

Kuwait) were contacted with the objective of inviting them to participate in the research. The schools were chosen because the researchers have previously worked with them and had established contact with their administrations.

A total of six private schools reflecting a 40% return rate responded, indicating their willingness to participate (two schools from the KSA, three from the UAE, and one from Kuwait; see Table 2). All six participating schools are bilingual schools attended mostly by native Arabic-speaking learners. In these six bilingual schools, students spend their day learning English language, Mathematics, Science, and Arts in English language, while they learn Arabic language and Islamic & Social Studies in Arabic language. The students spend between 9 and 12 hours a week in Arabic-medium classes (that includes Arabic language and Islamic & Social studies), while the rest of their time is spent in English-medium classes (English language, Mathematics, Science, Arts). The consent of both teachers and parents was secured to allow students to participate in the project. Oral description of what the experience of participating in this study is going to be like was explained by teachers to all participating students.

2.2. Participants

A total of 35 teachers (41 classrooms) distributed in six private schools across three Arabian Gulf countries (two schools in the KSA, three schools in the UAE, and one school in Kuwait) provided ORF data from an overall sample of 1,034 students (Table 2). All participating teachers were accredited by their country's Ministry of Education and had an undergraduate degree either in education, Arabic language literature or Arabic language, and at least three years of classroom teaching experience.

3. Measures

An ORF measure is an individually administered and timed test that looks at accuracy and fluency in reading connected text (Park et al., 2015). The measure used for the current study was prepared by the researchers and administered by teachers using a common written protocol. Translated, vowelized, and leveled MSA texts were used for each grade level from Grades 1–6 (Appendix A). Texts chosen were translated by an international publishing house and vetted by several Arab ministries of education including the UAE, Bahrain, Qatar, Morocco, Lebanon, Iraq, and Libya. Leveling of texts was completed using a well-established Arabic text leveling system known as the Arabi21 and Hanada Taha leveling system (Taha, 2017). Leveling of all texts used

Table 2

Participant distribution

Country	# Schools	# Teachers	# Students	Grade	# Sections
Kuwait	1	6	137	1	1
				2	1
				3	1
				4	1
				5	1
				6	1
Saudi Arabia (KSA)	2	15	333	1	3
				2	3
				3	3
				4	3
				5	3
				6	3
United Arab Emirates (UAE)	3	14	502	1	5
				2	4
				3	5
				4	1
				5	4
				6	4
Total	6	35	1,003		47

ensured that they were appropriate for the grade level they were utilized for based on seven criteria including: (i) genre, (ii) complexity of sentence structures, (iii) accessibility of the vocabulary words used, (iv) level of symbolism in the text, (v) number of words, (vi) ideas and themes, and (vii) vowelization (Taha, 2017). The same text was used in both fall and spring readings.

To ensure face validity of the texts, three experts in the field of children's Arabic literature and teaching were asked to review them and judge their clarity and relevance. Based on their feedback, cumulative word counts were added to the end of each line in the teacher's copy of the texts, and the font size was made larger for Grades 1 and 2. The researchers tested the measure on a pilot sample of three teachers who tested 10 students each. Cronbach Alpha was computed to determine the internal consistency reliability (Cohen et al., 2007) and was found to be $\alpha = 0.93$, indicating that the reading measure is reliable. Calculating inter-rater reliability was impossible, due to limited resources and difficulty of securing approvals from schools in different countries with different privacy policies. The best case-scenario to partly make up for the absence

of inter-rater reliability was to ensure that all teachers received the same training from the same trainer using common exemplars.

3.1. Procedures

Students' ORF was measured twice over one academic year, in Fall and Spring. Students in participating schools were mostly native Arabic speakers from many countries of the Arab world. No information about students' nationalities were made available to the researchers given the schools' privacy policies.

The choice of Fall testing was mainly to ensure that students were pretested about two months after they started the new academic year. Internationally, ORF measures such as DIBELS are given either twice or three times a year to measure progress over time within the same grade level (DIBELS, 2020). For Grade 1 students, ORF measures were administered one reading only in the Spring because in the Fall they were learning letter sounds.

In order to avoid having researchers disrupt classrooms, students' Arabic language classroom teachers and one coordinator in each school were trained on how to administer the ORF measures. The teacher training included two 2-hr online meetings with the Arabic language teachers and coordinators in each of the participating schools. The first meeting presented the study rationale, the concept of ORF, and how it is measured. A written protocol on how to administer the ORF measures was also shared with all to refer to when needed. The second meeting was mostly hands-on with the researcher and coordinators and teachers in each school demonstrating an ORF test example several times and discussing any questions or comments about timing and scoring. Researchers remained in touch with school coordinators regularly to answer any further questions.

Teachers then administered the test to students with the help of the school's Arabic language coordinator. Participating teachers asked students to read one leveled, grade appropriate, authentic, connected MSA text for 1 min without stopping. Teachers timed the test from the first word read aloud and ended the test after 1 min. During the 1-min reading, teachers marked on their sheet all the words read incorrectly by the student. The teacher then counted the number of miscues and subtracted that from the total number of correct words read to arrive at the wrcpm result.

Table 3

Participant distribution

Grade	Frequency	Percentage
1	176	17.5
2	174	17.3
3	189	18.8
4	110	11.0
5	172	17.1
6	182	18.1
Total	1003	100

4. Results

Given that the objective was to explore Arabic language fluency rates (FR) for students in Grades 1–6, exploratory data reported in the Fall and Spring oral reading tests are now discussed. Table 3 provides frequencies and percentages of students who took the ORF test across grade levels tested.

4.1. Oral fluency rates

For a general understanding of exploratory FR, the average number of correct words was calculated for different grade levels for the Fall and Spring testing as presented in Table 4. Analysis revealed a progression from 19.74 wrcpm on average by the end of Grade 1 to 66.36 wrcpm by the end of Grade 6, revealing a wide range in FR in each grade level as reflected in Table 4. High standard deviations, particularly in the early grades, support this wide range in fluency.

Exploratory results for Grade 4 Fall reading show a higher average number of words read correctly per minute than those in Grade 5. Also, exploratory results from individual countries show that fourth graders in Kuwait and the UAE scored higher than the fifth graders in the Fall reading (Table 5). Fifth graders in the KSA appeared to consistently score higher than fourth graders in the Fall and Spring readings. Similar results for the Spring potentially show that the gap was redeemed for the UAE fifth graders and that they seem to have outperformed their fourth-grade counterparts, however, that gap persisted for fifth graders in Kuwait, who were again outperformed by fourth graders (Table 6).

Further analysis shows that Grade 5 girls outperformed fourth graders, but that Grade 4 boys outperformed Grade 5 boys in both the Fall and Spring readings. Figure **1**

Table 4

Analysis for the number of CWPM by grade level for the total sample

Grade level		N	Minimum	Maximum	Mean	Std. Deviation
1	Fall	176	NA	NA	NA	NA
	Spring	176	0	54	19.74	18.46
2	Fall	174	0	75	21.06	17.91
	Spring	174	0	88	29.72	21.88
3	Fall	189	0	80	32.45	18.74
	Spring	189	3	81	37.82	20.21
4	Fall	110	3	123	47.91	22.72
	Spring	110	11	122	55.89	25.21
5	Fall	172	4	150	43.67	22.12
	Spring	172	1	148	53.62	24.99
6	Fall	182	6	129	59.29	29.46
	Spring	182	4	130	66.36	30.15

indicates that the exploratory results of independent samples *t*-test may show likely differences in performance between boys and girls in each grade level in the fall that could possibly shed light on the higher reading FR found in Grade 4. There was a significant effect for gender for Grade 2 with girls outperforming boys, $t(172) = 2.30$, $p < 0.05$. Similar results were seen for Grade 3, $t(187) = 3.52$, $p < 0.01$ with significant differences between the genders favoring girls. In Grade 4, boys outperformed girls, $t(108) = -2.80$, $p < 0.01$, and results were significantly different. In Grade 5, significant differences between boys' and girls' performance on the oral reading test were reported, $t(170) = 2.88$, $p > 0.01$. In Grade 6, boys outperformed girls, and results were significantly different, $t(180) = -3.16$, $p < 0.01$.

For the Spring results, there was a significant effect for gender, $t(174) = 2.09$, $p < 0.05$, in Grade 1 with girls reading more words correctly per minute than boys. Significant results were also reported for Grade 2 with girls outperforming boys, $t(172) = 3.08$, $p < 0.01$. Similar results were seen for Grade 3, $t(187) = 2.81$, $p < 0.01$ with significant differences between the genders favoring girls. In Grade 4, boys again outperformed girls, $t(108) = -3.60$, $p < 0.01$, and results were significantly different. In Grade 5, we found that both groups were outperformed by Grade 4, but there was no significant difference between boys' and girls' performances on the oral reading test, $t(170) = 1.20$, $p > 0.05$. In Grade 6, boys again outperformed girls, and results were significantly different, $t(180) = -2.55$, $p < 0.05$. Generally, the KSA students outperformed most other students in the UAE and Kuwait. Although all participating schools shared similar socioeconomic profile and the use of MoE-designed textbooks, two KSA schools, however, had more

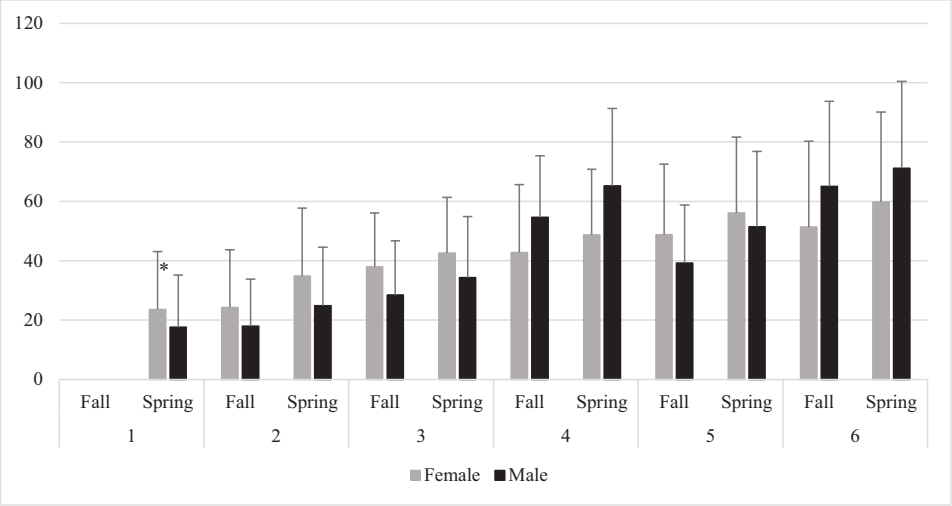
Table 5

Average number of CWPM in Fall by country and grade level

Country	Grade level	N	Mean	Std. Deviation
Kuwait	1*	NA	NA	NA
	2	24	10.29	10.99
	3	17	18.94	14.37
	4	23	53.78	23.85
	5	24	38.08	12.37
	6	24	47.29	21.72
KSA	1*	NA	NA	NA
	2	57	35.82	19.86
	3	58	41.21	16.34
	4	64	46.55	20.96
	5	68	54.06	24.76
	6	56	61.86	31.86
UAE	1*	NA	NA	NA
	2	93	14.80	11.31
	3	114	30.01	18.64
	4	23	45.83	26.15
	5	80	36.51	18.46
	6	102	60.71	29.25

Figure 1

Independent samples t-test comparing gender performance by grade level



experience assessing fluency and individualizing reading instruction based on that, while the other schools in the UAE and Kuwait did not report engaging in fluency assessment and reading instruction.

Table 6

Average number of CWPM in Spring by country & grade level

Country	Grade Level	N	Mean	Std. Deviation
Kuwait	1	25	19.32	11.89
	2	24	17.04	16.16
	3	17	29.24	18.10
	4	23	67.91	27.30
	5	24	42.71	13.75
	6	24	63.63	30.30
KSA	1	61	36.87	16.08
	2	57	47.19	22.41
	3	58	48.66	17.96
	4	64	56.22	22.38
	5	68	66.26	25.58
	6	56	70.84	29.62
UAE	1	90	8.24	11.59
	2	93	22.29	15.56
	3	114	33.59	19.52
	4	23	42.96	25.34
	5	80	46.14	22.61
	6	102	64.55	30.43

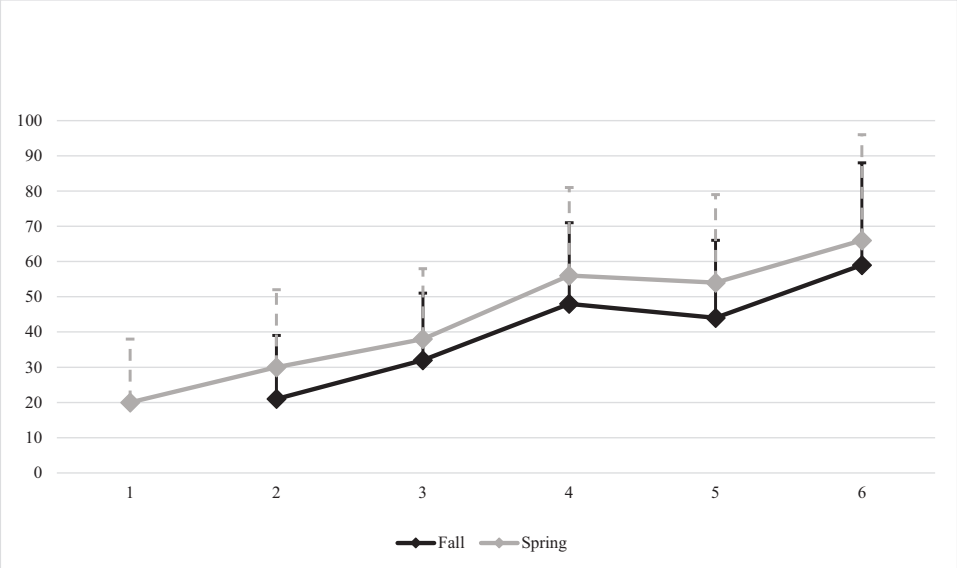
Exploring initial ranges for Arabic ORF required two steps. First, the means and standard deviations of each grade level in the sample were examined (Figure **2**) and words read correctly per minute for each grade Fall and Spring rates within one standard deviation were computed. This provided a wide range around the mean to be considered at each grade level in the Fall and Spring. For example, the range for Grade 2 in the Fall was 3–30 wrcpm, while the Spring range was 8–55 wrcpm. By Grade 6, the Fall range was 30–88 wrcpm while the Spring one was 36–96 wrcpm. The observed pattern was of gradual rate increase from Grade 1 through 4, stagnation in Grade 5 and then an increased rate in Grade 6.

To explore initial oral reading ranges for Arabic language, we use the terms Very Weak, Weak, Target, Advanced, and Superior to describe the readers in our sample (Table 7). Concerned about students needing scaffolding might be missed if the traditional 2 SD below is suggested, the researchers instead used 0.5 standard measurement. The data reflected large standard deviations depicting an excessive spread of data well dispersed away from the mean.

Hence, a cut-off of 0.5 SD seems to be more suitable than 1 or 2 SDs, especially that the data are skewed for most variables.

Figure 2

Initial draft for Arabic ORF rates in private, bilingual schools: Number of correct words read per minute



The researchers were questioning the idea of only providing support for the very low performing population, especially when little is known about Arabic literacy development. Thus, 0.5 SD below the mean is an arbitrary cut-off the researchers chose to mark the complications with Arabic literacy development that need to be more carefully studied.

The wrcpm exploratory ranges are displayed in Table 7 whereby students who appear to have reading challenges are divided into categories and would possibly be recipients of different interventions to improve their reading skills.

5. Discussion

A primary goal of this study was to explore ORF rates in Arabic language connected texts in Grades 1–6 in private, bilingual schools. Fluency in this article was based on LaBerge and Samuels' (1974) definition which looks at reading fluency as the process of automatically associating graphemic and phonetic information in a text with minimal conscious attention if any at all.

The first observation in this study is that ORF explored (Table 7) for Arabic language seem to be in line with ranges published for the Arabic MSA version of EGRA for the West Bank (Palestine), 30–35 wrcpm for Grades 2 and 3, but appear to be much lower than ranges published for Egypt and Jordan, that have reported 50 and 46 wrcpm,

Table 7

The preliminary Taha Thomure Ranges for Arabic ORF rates in bilingual (Arabic–English) schools: Number of words read per minute

Grade		Means	SD	Very Weak below M – 1 SD	Weak M – 1 SD to M – 0.5 SD	Target M ± 0.5 SD	Advanced M + 0.5 SD to M + 1 SD	Superior above M + 1 SD
1	**Fall**	—-	—-	—-	—-	—-	—-	—-
	Spring	20	18	Below 2	2 to 11	11.5 to 29	29.5 to 38	Above 38
2	**Fall**	21	19	Below 2	2 to 11.5	12 to 30.5	31 to 40	Above 40
	Spring	30	22	Below 8	8 to 19	19.5 to 41	41.5 to 52	Above 52
3	**Fall**	32	19	Below 13	13 to 22.5	23to 41.5	42 to 51	Above 51
	Spring	38	20	Below 18	18 to 28	28.5 to 48	48.5 to 58	Above 58
4	**Fall**	48	23	Below 25	25 to 36.5	37to 59.5	60to 71	Above 71
	Spring	56	25	Below 31	31 to 43.5	44to 68.5	69 to 81	Above 81
5	**Fall**	44	22	Below 22	22 to 32	32.5 to 54	54.5 to 65	Above 65
	Spring	54	25	Below 31	31 to 43.5	44to 68.5	69 to 81	Above 81
6	**Fall**	59	29	Below 30	30 to 44.5	45to 73.5	74 to 88	Above 88
	Spring	66	30	Below 36	36 to 51	51.5 to 81	81.5 to 96	Above 96

respectively, for Grades 2 and 3 (RTI International, 2017). A key factor in reading difficulty is the lack of automaticity in decoding (La Berge & Samuels', 1974). The researchers suggest that the limited exposure to Arabic language in class might have limited student MSA proficiency and ability to perform well on the ORF measures (Gregory et al., 2021). Thus, results seen in this study could have possibly been due to the lack of sufficient exposure to MSA texts where not enough traces have been left on learners' memories to help them focus quickly and recall those words from memory (La Berge & Samuels, 1974).

The second observation was that girls outperformed boys in ORF in the early Grades 1–3. This is in line with international findings where girls have consistently outperformed boys (OECD, 2011). However, boys in this study outperformed girls in Grades 4 through 6 in Spring and in Grade 4 in Fall which might reflect some sociocultural practices in those Arab countries that might be encouraging boys to read. Another hypothesis looks at the

gender gap from a sociocultural perspective where there are strong research findings strengthening the claim that females are rewarded for engaging in reading and that females tend to have more motivation and a positive attitude toward reading than boys (McGeown et al., 2012).

Third, results suggest that Grade 4 students in Kuwait and the UAE outperformed Grade 5 students in the Fall. In the Spring, Grade 4 students in Kuwait again outperformed their peers in Grade 5. This is an interesting finding that sent the researchers to take a closer look at the texts students were asked to read in this study (Appendix A). For Grade 4, the text was a translated Magic School Bus text. For Grade 5, the text was translated from English and extracted from the Mystery of the Golden Key book. The Magic School Bus text used for Grade 4 had more action verbs in it, while the Grade 5 text was rich in descriptive language where some background knowledge would be needed which might be what affected students' oral reading rates and interfered with automaticity. It needs to be mentioned that the number of Grade 4 classes participating in the study was the smallest (one section from each country, except KSA). This difference in sample size for Grade 4 might have had a statistical effect on Grade 4 data.

Based on the results, this study proposed tentative benchmarks (Table 7) for Arabic oral reading. The suggested benchmark ranges were determined to be 1 SD above and below the observed mean for the Fall and Spring to develop reading rates ranges that progress from very weak, to weak, to target, to advanced and superior. Those ranges need to be taken only as a reflection of the oral reading data from the sample in this study and will need further verification in future research. Further large-scale research with potential to extend research into current instructional practices, instructional time, and effective interventions is needed. There is additionally an urgent need to develop culturally and linguistically responsive Arabic tests that teachers can use formatively in class to understand where each student is in terms of reading and comprehension and how best they can be helped and supported.

6. Limitations

Several limitations are present in this study. Firstly, the sample included only private schools. The small sample used for this study included six private, bilingual schools which is not representative of the student population in each country. Future research should ensure that a representative sample of students, from each Arabic-speaking

country and school type is selected to ensure that normative benchmarks can be developed.

A second limitation to this study involves the choice of texts used to measure oral reading rates. The fact that Grade 4 performed better than Grade 5 students might partly be due to the text choice wherein Grade 4 was more of an action-verbs filled text, while in Grade 5 it was a text that used descriptive language. This could have slowed down students' reading and interfered with automaticity according to the LS framework. In future research, it may be useful to use more than one text at each grade level, following the lead of other researchers (Good & Kaminsky, 2002; Good et al., 2001; Hasbrouk & Tindal, 2017).

In addition, this study did not examine comprehension and was solely focused on measuring fluency, however, given the exploratory nature of the study and working with teachers most of whom have never assessed fluency before, the researchers wanted this initial study to focus on CWPM. It will be important to incorporate comprehension as an integral part of the definition of fluency in future studies (Dowd et al., 2020).

7. Conclusion and Implications

This study is only an initial attempt at understanding how reading proficiency develops in Arabic language speakers attending private, bilingual schools. Results discussed earlier will need to be verified and cross validated with a more representative sample of students, and other standardized reading assessments (Rasinski, 2003), especially standardized reading assessments in Arabic. Moreover, it would be important to replicate this study using a more representative sample that includes students in public schools and using authentic texts that are originally written in Arabic rather than translated texts.

Despite various definitions of "fluency", it remains that fluency plays an important role in comprehension and aids in increased reading levels of students. Every time learners are exposed to a text, it leaves traces in their memories, builds their reading knowledge, and helps them build reading automaticity (Logan, 1997) making retrieval of words faster and easier. Thus, repeated reading of a text, for example, using different strategies and points of emphasis might be an important implication for teachers here.

The idea is that if teachers are working on the main components of Arabic language reading including phonological awareness, morphological awareness, MSA and SAV awareness, alphabetic concept, word concepts, sight words, and intensive reading of texts that are meaningful and cognitively engaging, then most students will probably develop the needed reading skills (LaBerge & Samuels, 1974; Samuels, 2004). Students

need to have access to good-quality children's literature and need enough time during the day allocated to engage in various forms and genres of reading. Also, teacher-friendly reading fluency assessments would be needed that reflect all components of fluency.

Reading fluency needs to be assessed in the classroom as part of a well-designed, structured, and evidence-based reading program using direct and explicit instruction (Guthrie & Klauda, 2014; Hudson et al., 2005; Osborn & Lehr, 2003; Rasinski, 1989, 1990, 2003, 2012; Taha-Thomure, 2018; Waters et al., 1984). The goal of such programs should be motivation to read, love of reading, and lifelong learning.

This study has some important implications for reading instruction in Arabic, including how it should be redefined and planned to where it becomes systematic, intentional, well-planned, and organically embedded in early literacy education.

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Competing Interests

None.

Author Biography

Hanada Taha Thomure, Ph.D., is a Professor of Arabic Language Teaching and Learning. Her main research interest revolves around the modernization of the teaching of Arabic language and literacy, standards and literature-based instruction, and national literacy strategies. She is the Endowed Chair of Arabic language at Zayed University and the director of the Zayed University Arabic Language Center for Research and Development, UAE.

Gail Brown, Ph.D., is passionate about learning and her PhD is in reading comprehension, specifically questioning. Gail has two married sons and one granddaughter. She walks early each morning to see the sunrise and lives on the coast near Sydney, Australia. She has written many texts for her classroom materials, and published her first book, *COVID Conversations*, about missing her granddaughter during social isolation. Gail has lectured at several Australian universities and presented at national and international literacy conferences for over 20 years. Gail is an education consultant and develops comprehension materials for and collaboratively with classroom teachers. Her website is www.designedlearning.com.au

Richard Speaker, Ph.D., has worked with students and teachers in elementary and secondary schools and universities for over 40 years. He recently retired as the Chair of the Department of Curriculum and Instruction at the University of New Orleans. His research and curriculum development interests focus on the integration of literacies and technologies in the learning of language, literacy, and content disciplines; and how teachers and learners collect language and concepts in their development of skill.

Haitham Taha, Ph.D., is a Professor for Reading Psychology and Learning Disabilities. His main research interest is investigating the cognitive and psycholinguistic processes in reading acquisition, spelling, and visual word recognition. Prof. Taha is the chair of the graduate studies on learning disabilities in Sakhnin College for teachers' education in Israel. In addition, he is a fellow researcher in "E. J. Safra Brain Research Center for Learning Disabilities" at the University of Haifa in Israel.

Rana Tamim, Ph.D., Dr. Tamim's specialization areas include the impact and role played by technology in facilitating learning; appropriate pedagogical approaches to the integration of technology in the design of learning environments; and the impact of pre-service and in-service training on teachers' attitudes toward technology integration.

Nerolie O'Neill, M.A., As one of the first Reading Coaches for the National Partnership in Australia, Ms. O'neill developed state-wide notoriety for her work on teaching reading in high school, differentiated instruction, and critical thinking. Nerolie's current work in the Middle East furthers her exploration of the connection between language and learning toward a deeper understanding of first and second language development and the critical role of teacher expertise.

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Appendix A

Table A-1

Titles of Texts Used in the Fall and Spring ORF

Grade Level	Text Title
Grade 1	Firfir & Fifi in School
Grade 2	Wake Up Sarah
Grade 3	My Grandpa's Donkey
Grade 4	Magic School Bus
Grade 5	Mystery of the Golden Key
Grade 6	Adventures of the Shark Lady