On the Effect of Semantic-Structural Elaboration on Qur'anic Reading Efficiency of Intermediate Learners

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Abstract
Arabic, as the only medium of performing religious rituals, is a widely used language in Islamic communities. Amongst uses of Arabic, reading and recitation of the Holy Qur'an enjoy a critical position. Accordingly, many religious schools have invested in teaching Qur'an and its required skills. Research findings have shown that Qur'anic teaching follows a traditional procedure in theory and practice. Considering the importance of conducting applied linguistics studies on teaching Qur'anic reading, the current research was an attempt to investigate the effect of semantic-structural elaboration of Qur'anic reading efficiency, encompassing reading reaction time, fluency, and comprehension. To this aim, an intact group of intermediate Qur'anic learners was selected through non-random convenience sampling and an experimental (pretest/intervention/posttest) design was employed in which the group underwent three different experiments. After raising awareness on five frequent Qur'anic roots and their derivations that occurred in different Qur'anic verses, tests were administered and parametric data were collected and analyzed through SPSS. Research findings revealed that intervention adversely affected reaction time by a significant increase ($t(24) = -12.067$, $p < 0.000$.) while promoting reading fluency and reading comprehension ($t(24) = -9.643$, $p < 0.000$, and $t(24) = -6.914$, $p < 0.000$, respectively). It was suggested that, though semantic-structural elaboration significantly increases learners' knowledge of semantic, syntax, and morphology and promotes language skills, form-focused instruction is cognitively demanding and must be done with due caution. These findings could have implications for Qur'anic teachers, learners, and applied linguists in general.

Keywords: Qur'anic Roots, Qur'anic Semantics, Qur'anic Reading, Fluency, Comprehension

1. Introduction
As a leading ritual language of Muslims and a great number of Arab countries, Arabic is amongst the leading languages of the world in respect to language users and socio-political weight. Yunes (2006) found that almost all Arabic learners across the world have a greater inclination for learning Arabic reading among other language skills due to their needs for efficient use of authentic Arabic texts. Merhi et al (2020) submitted proof on these findings and asserted that the main motive for learning Arabic among non-Arab Muslims is reading Arabic discourse, particularly when performing their religious rituals. Using Webb's (2007) concept of "learning burden", Young (2011) asserts that acquiring mastery in Arabic is largely dependent on the effort

required to learn an Arabic word. Though Nation (2001) had previously postulated that earlier linguistic knowledge such as phonological awareness and syntagmatic knowledge can reduce the threshold of learning burden for Arabic vocabulary, word-level knowledge and lexical semantics (word semantics, root semantics, derivational semantics) play a more critical role in acquiring mastery in Arabic reading and speaking (Young, 2011, p.21).

Undoubtedly, Arabic, like other languages enjoys a distinctive semantic system underlying its lexical system that reflects its linguistic and cultural heritage. According to Ishkewy et al (2014) Arabic as a Semitic language is highly reliant on semantics (Semiotics, or the study of word meaning, Yule, 2006) for being processed by readers or listeners and therefore an Arabic user barely can process its written or oral discourse without sufficient information about Arabic semantics. These authors believe that the semantic knowledge affects word-level processing of Arabic and establishes a meaningful relationship between lexical items of a single Arabic discourse. Thus, the cohesion and coherence of Arabic text are highly dependent on semantic awareness (Ishkewy et al, 2014, p. 72). Evidently, both the Arabic standard language and its religious Qur'anic variety include semantically loaded discourses that embrace a good bulk of synonyms, antonyms, hypernyms, hyponyms, meronyms, homonyms, and other semantic features that directly influence Arabic text linguistics, its processing, its translation, and its comprehension. Al-Yahya et al (2010) also concluded that semantics plays a critical role in the processing of Qur'anic texts, their understanding, and their translation and alleviates issues related to linguistic confusion in this divine discourse.

The importance of lexical semantics in mastery in reading is also underscored in other languages. Jiang (2018) believes that word semantics is critically reliant on its semantics and without adequate semantic development, learning second language vocabularies is almost impossible. Jiang (2018, p.11) adds that three cognitive processes are involved in acquiring lexical items in a foreign language including a) establishment of a lexical entry in second language learner's mental lexicon, b) incorporation of accurate information about a word's form, meaning, and syntactic properties in the lexical entry and finally, c) development of the ability to access the lexical entry automatically. It is believed that the earliest process helps the learner to recognize a visual or auditory input of a lexical item as a single word, the second helps him to use the lexical item in an accurate and appropriate manner and the last process enables him to employ the lexical item in an efficient manner within an unrehearsed situation. In spite of that, a review of the literature reveals that semantics, in comparison with syntax, morphology, and phonology, is amongst intact areas in Arabic linguistic studies which need further investigation and research. Besides, many research findings have shown that many word-level problems such as lexical errors, translation problems, reading and listening comprehension deficiencies are rooted in the undeveloped semantic domain of second language learners (Malt & Sloman, 2003; Jiang, 2004; Saji & Imai, 2013 and etc.). In the same line of research, Zribi and Ahmed (2013) report that dealing with semantic errors in discourse is challenging. Yet, detecting semantic errors and correcting them in Arabic is more difficult than in other languages because in this language, lexical items are graphically very identical and the language itself enjoys a discursive syntax, morphology, and orthography which increases the difficulty.

Research findings have also shown that this inherent linguistic formidability influences language skills. Among those language areas that receive a direct impact from word-level complexity is reading skill because it is highly dependent on the semantic and morphology of vocabularies. Considering this importance on one side and research gap on the other, the present study is an attempt to investigate the effect of semantic elaboration on reading fluency, and reading comprehension of intermediate Qur`anic learners in an Iranian context. Thus, the following research question is formulated as the main quest of the research:

Research Question: Does semantic-structural elaboration promote reading efficiency (reaction-time, reading accuracy, and reading comprehension) of intermediate Qur'anic learners?

To answer this question a quantitative experimental design was adopted and the

effect of semantic instruction on these variables amongst intermediate Qur'anic learners in a Howzavi center is investigated.

2. Literature Review

The history of the importance of connecting formal-structural aspects of lexical items as well as their semantic-notional aspects dates back to Wilkins' (1972) notional-functional syllabus asserting the need for presenting lexical items in semantically related fashions. Then, Crow (1986) and Marzano (1988) reported that the presentation of vocabulary in semantic clusters assists both language teachers and language learners to recognize minimal differences in similar confusing lexical sets. Besides, Gairns and Redman (1986) concluded that the presentation of new words in semantically related sets brings about regularity, coherence, and structure to the comprehension of language learners. In the same line of research, Seals (1991) affirmed previous findings and added that teaching lexical items that are derived from the same lexical domain has a number of instructional benefits for language learners. In addition to linguistics, a number of interdisciplinary theories in psycholinguistics have produced evidence on the importance of semantics in language learning, especially in processing, memorizing, and recalling lexical items. The mental lexicon theory of Aitchison (1987) and the semantic frames of Tinkham (1994) have underscored the importance of lexical items' semantics in a variety of pedagogical applications.

In addition to this focal attention in theory, a good bulk of practical and empirical studies are carried out in relation to lexical semantics. In the context of the Arabic language, Dawson et al (2021) investigated the relationship between form and meaning underscoring derivational suffixes and their meaning. This study was intended to examine whether developing readers show superior semantic, phonological, and orthographic learning of novel words when those words contain an existing suffix that is congruent with the definition of that word. Experimental groups of this study revealed significantly stronger semantic recall for items taught in the congruent compared with the incongruent condition. These findings supported the fact that the presence of familiar suffixes in unfamiliar words facilitates novel word learning in adolescents. Emphasizing the importance of extracting semantic relations in Qur'anic text for pedagogical purposes, Bentercia et al, (2017) carried out a correlation study and focused on semantic relations resulting from proposed conjunctive patterns that are enclosed by two terms. The obtained results proved the importance of semantic relations in the grammatical and linguistic competence of language processors. Understanding the importance of semantics in the syntactic, morphological, and orthography of Arabic, Zribi and Ahmed (2013) conducted a study aimed at detecting semantic errors in Arabic texts. To fulfill their goals these authors combine four contextual methods (employing statistics and linguistic information) in order to decide about the semantic validity of a word in a sentence. Research findings revealed that the implemented system enjoys an acceptable precision rate of about 90% and a recall rate of about 83% and therefore can be applied in languages other than Arabic. Finally, Al-Shaikhi (2011) carried out research on the effect of semantic and thematic categorization of vocabulary on Arabic-speaking learners of English as a foreign language to discover the most effective method of clustering learners. To this aim, the researcher examined three types of clustering: semantically-semantically-unrelated sets, and thematically related sets as well as their effectiveness in assisting Arabic-speaking learners to recall and acquire new lexical items. The results of the analyses conducted through one-way analysis of variance revealed that semantically related presentation of lexical items resulted in better learning compared with the thematically related presentation of vocabulary.

In spite of the fact that a huge bulk of studies have examined the effect of vocabulary on different aspects of language learning and language skills, little research is conducted on the importance of semantic-structural elaboration for learning language skills especially receptive skills which require a greater degree of language processing for

performance. Considering this research gap on one side and the effect of fast processing of discursive Arabic lexical items on the other, the major incentive of the present study is to investigate the effect of semantic-structural elaboration through instruction on reading efficiency including processing reaction time (henceforth PRT), reading accuracy and reading comprehension of a semantically loaded Qur'anic text extracted from Holy Qur'an.

3. Method

This study employed a quantitative method which was fulfilled through a pre-test/post-test experimental design. Parametric data were collected from the study`s participants and analyzed through appropriate analytical measures through SPSS software (Version 23).

3.1 Participants

To answer the research questions, an intact group of 25 intermediate Qur'anic learners (11 male learners and 14 female learners) registered in a Howzavi Qur'anic center for learning Qur'an's reading and interpretation in the city of Qom was selected through non-random convenience sampling. Several studies regarding the generalizability of findings and estimation of significant effect are reported for a small number of participants (Creswell, 2008). Particularly when researchers use a parametric test (t-test here), analyses only one dependent variable (reading efficiency), utilizes only one group for comparison (paired samples here), requires qualitative manipulations (manipulation of Arabic roots here), and requires time and expense for further sampling, the researcher only needs to use a small number of participants (Rooney and Evans, 2018). They were all male learners aged between 11-23 years old. Though they were placed at this level through a selection test, an oral test of Qur'anic reading proficiency was administered to the participants to remove any possible outlier. Since this was a research-developed test, two experts in Ayatullah Borujerdi University commented on the content and face validity of the test. Also, to investigate the reliability of the test, a pilot study was conducted on 49 Qur'anic learners in the same university, the results of which are presented in the following table.

Table 1: Reliability Statistics of the test

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
0.81	0.83	17

This test was administered to students but findings did not reveal any outlying scores and the sample was homogenous in Qur'anic proficiency because non-of them scored two standard deviations upper or lower than the mean score. Then, considering the sub-questions of the research, these participants were administered three tests measuring reaction time, reading fluency, and reading comprehension both at pre-test and post-test conditions.

3.2 Materials

The Qur'anic materials from which pre-tests and post-test were developed were selected from some highly frequent roots and their derivations in Holy Qur'an. The information associated with these Qur'anic lexical Items is presented in the following tables.

Table 2:Semantic-Structural information of selected roots

Qur'anic root	Transliteration	Forms	Frequency	Semantic
أ/م/ن	a/m/n	19	858	be + safe, be + secure, guard, keeper, trust, be + trusted, belief, faith, to believe
ب/أ/س	b/a/s	7	73	might, power, torture, hardship, fear, poverty, sorrow, being sad, calamity, punishment
ب/ ر/أ	b/r/a	12	31	God's creation, to create (only of God), to cure, to prove someone is innocent, to disown someone, to be without blemish
ج/ن/ب	j/n/b	8	33	side, part, the great part, partner, neighbor, to put aside, to avoid, to disdain, to ward off
ر/ض/ع	r/da/a	5	11	To suck a mother's milk, to suckle a baby, suckling mother, to suck a mother, breastfeed

Table 3: Selected roots and their derivations

Root	Form	Example
أ/م/ن	أمنَ	فَإذا **أمِنتُم** فَمَن تَمَتَّعَ بِالعُمرَةِ إِلَى الحَجِّ فَمَا استَيسَرَ مِنَ الهَدىِ
	آمَنَ	إِنَّ الَّذينَ آمَنوا وَالَّذينَ هادوا وَالصّابِئونَ وَالنَّصارى مَن **آمَنَ** بِاللَّهِ وَاليَومِ الآخِرِ وَعَمِلَ صالِحًا فَلا خَوفٌ عَلَيهِم
	ااُتمِنَ	وَإِن كُنتُم عَلى سَفَرٍ وَلَم تَجِدوا كاتِبًا فَرِهانٌ مَقبوضَةٌ فَإِن أَمِنَ بَعضُكُم بَعضًا فَليُؤَدِّ الَّذِى **اؤتُمِنَ** أَمانَتَهُ وَليَتَّقِ اللَّهَ رَبَّهُ
	آمِنُ	وَضَرَبَ اللَّهُ مَثَلًا قَريَةً كانَت **آمِنَةً** مُطمَئِنَّةً يَأتيها رِزقُها رَغَدًا مِن كُلِّ مَكانٍ
	أمانَه	إِنّا عَرَضنَا **الأمانَةَ** عَلَى السَّماواتِ وَالأَرضِ وَالجِبالِ فَأَبَينَ أَن يَحمِلنَها وَأَشفَقنَ مِنها وَحَمَلَهَا الإِنسانُ
	أمنٌ	وَإِذ جَعَلنَا البَيتَ مَثابَةً لِلنّاسِ **وَأَمنًا** وَاتَّخِذوا مِن مَقامِ إِبراهيمَ مُصَلًّى
	أمَنَةً	ثُمَّ أَنزَلَ عَلَيكُم مِن بَعدِ الغَمِّ **أَمَنَةً** نُعاسًا يَغشى طائِفَةً مِنكُم
	أمينٌ	أُبَلِّغُكُم رِسالاتِ رَبّى وَأَنا لَكُم ناصِحٌ **أَمينٌ**
	إيمانَ	وَالَّذينَ تَبَوَّءُوا الدّارَ **وَالإِيمانَ** مِن قَبلِهِم يُحِبّونَ مَن هاجَرَ إِلَيهِم
ب/أ/س	مَأمَنَ	وَإِن أَحَدٌ مِنَ المُشرِكينَ استَجارَكَ فَأَجِرهُ حَتّى يَسمَعَ كَلامَ اللَّهِ ثُمَّ أَبلِغهُ **مَأمَنَهُ**
	مَأمون	إِنَّ عَذابَ رَبِّهِم غَيرُ **مَأمونٍ**
	مُؤمِن	وَما كانَ **لِمُؤمِنٍ** وَلا **مُؤمِنَةٍ** إِذا قَضَى اللَّهُ وَرَسولُهُ أَمرًا أَن يَكونَ لَهُمُ الخِيَرَةُ مِن أَمرِهِم
	تَبتَئِس	قالَ إِنّى أَنا أَخوكَ فَلا **تَبتَئِس** بِما كانوا يَعمَلونَ
	بَأس	فَإِذا جاءَ وَعدُ أولاهُما بَعَثنا عَلَيكُم عِبادًا لَنا أُولى **بَأسٍ** شَديدٍ فَجاسوا خِلالَ الدِّيارِ
	بَأساء	وَما أَرسَلنا فى قَريَةٍ مِن نَبِىٍّ إِلّا أَخَذنا أَهلَها **بِالبَأساءِ** وَالضَّرّاءِ لَعَلَّهُم يَضَّرَّعونَ
	بائِس	فَكُلوا مِنها وَأَطعِمُوا **البائِسَ** الفَقيرَ
	بَئيس	وَأَخَذنَا الَّذينَ ظَلَموا بِعَذابٍ **بَئيسٍ** بِما كانوا يَفسُقونَ
	بِئس	كانوا لا يَتَناهَونَ عَن مُنكَرٍ فَعَلوهُ **لَبِئسَ** ما كانوا يَفعَلونَ
	بِئسَما	وَلَمّا رَجَعَ موسى إِلى قَومِهِ غَضبانَ أَسِفًا قالَ **بِئسَما** خَلَفتُمونى مِن بَعدى
ب/ر/أ	نَبرَأ	ما أَصابَ مِن مُصيبَةٍ فِى الأَرضِ وَلا فى أَنفُسِكُم إِلّا فى كِتابٍ مِن قَبلِ أَن **نَبرَأَها**
	بَرَّأَ	يا أَيُّهَا الَّذينَ آمَنوا لا تَكونوا كَالَّذينَ آذَوا موسى **فَبَرَّأَهُ** اللَّهُ مِمّا قالوا
	ابرِئُ	**وَأُبرِئُ** الأَكمَهَ وَالأَبرَصَ وَأُحيِى المَوتى بِإِذنِ اللَّهِ
	تَبَرَّأَ	وَما كانَ استِغفارُ إِبراهيمَ لِأَبيهِ إِلّا عَن مَوعِدَةٍ وَعَدَها إِيّاهُ فَلَمّا تَبَيَّنَ لَهُ أَنَّهُ عَدُوٌّ لِلَّهِ **تَبَرَّأَ** مِنهُ
	بَرىءٌ	فَإِن عَصَوكَ فَقُل إِنّى **بَرِىءٌ** مِمّا تَعمَلونَ
	بَراءٌ	وَإِذ قالَ إِبراهيمُ لِأَبيهِ وَقَومِهِ إِنَّنى **بَراءٌ** مِمّا تَعبُدونَ
	بَراءَةٌ	**بَراءَةٌ** مِنَ اللَّهِ وَرَسولِهِ إِلَى الَّذينَ عاهَدتُم مِنَ المُشرِكينَ
	بَرِيَّة	إِنَّ الَّذينَ آمَنوا وَعَمِلُوا الصّالِحاتِ أُولئِكَ هُم خَيرُ **البَرِيَّةِ**
	بارِئ	فَتوبوا إِلى **بارِئِكُم** فَاقتُلوا أَنفُسَكُم ذلِكُم خَيرٌ لَكُم عِندَ بارِئِكُم فَتابَ عَلَيكُم إِنَّهُ هُوَ التَّوّابُ الرَّحيمُ
	مُبَرَّءون	أُولئِكَ **مُبَرَّءونَ** مِمّا يَقولونَ لَهُم مَغفِرَةٌ وَرِزقٌ كَريمٌ
ج/ن/ب	اجنُب	وَإِذ قالَ إِبراهيمُ رَبِّ اجعَل هذَا البَلَدَ آمِنًا وَ**اجنُبنى** وَبَنِىَّ أَن نَعبُدَ الأَصنامَ
	يُجَنَّب	وَ**سَيُجَنَّبُهَا** الأَتقَى
	يَتَجَنَّب	وَ**يَتَجَنَّبُهَا** الأَشقَى
	اجتَنِب	وَلَقَد بَعَثنا فى كُلِّ أُمَّةٍ رَسولًا أَنِ اعبُدُوا اللَّهَ وَ**اجتَنِبُوا** الطّاغوتَ
	جنبُ	فَإِذا قَضَيتُمُ الصَّلاةَ فَاذكُرُوا اللَّهَ قِيامًا وَقُعودًا وَعَلى **جُنوبِكُم**
	جُنُب	يا أَيُّهَا الَّذينَ آمَنوا لا تَقرَبُوا الصَّلاةَ وَأَنتُم سُكارى حَتّى تَعلَموا ما تَقولونَ وَلا **جُنُبًا**
	جانِب	لا يَسَّمَّعونَ إِلَى المَلَإِ الأَعلى وَيُقذَفونَ مِن كُلِّ **جانِبٍ**
د/ض/ع	أرضَعَ	يَومَ تَرَونَها تَذهَلُ كُلُّ مُرضِعَةٍ عَمّا **أَرضَعَت** وَتَضَعُ كُلُّ ذاتِ
	تَسترضِع	وَإِن أَرَدتُم أَن **تَسترضِعوا** أَولادَكُم فَلا جُناحَ عَلَيكُم إِذا سَلَّمتُم ما آتَيتُم بِالمَعروفِ
	رَّضاعَة	اللّاتى أَرضَعنَكُم وَأَخَواتُكُم مِنَ **الرَّضاعَةِ** وَأُمَّهاتُ نِسائِكُم
	مُرضعه	يَومَ تَرَونَها تَذهَلُ كُلُّ **مُرضِعَةٍ**

In addition to the exemplar verse presented in this table, almost all of these roots had other occurrences in Holy Qur'an from which the authors selected test contents but they are not mentioned here due to space limitations.

3.3 Procedure and Data Analysis

The researchers used the content extracted from semantically and structurally loaded lexical items from Holy Qur'an to develop three reading efficiency tests that measure word-level reaction time, reading fluency, and reading comprehension. The parallel forms of these tests were also developed based on appropriate measures. Research team and two Qur'anic experts in Ayatullah Borujerdi university controlled the content and face validity of the tests. The reliability of the tests was calculated through Cronbach's Coefficient Alpha which was r = 0.791 for pre-test and r = 0.802 for post-test. After administering the pre-test exams (on three different days), the participants underwent 5 sessions of instruction on the semantic and structure of the selected roots based on the roots identified in tables 2 and 3. In this phase, in addition to the direct presentation of materials, appropriate exercises were carried out and appropriate meta-linguistic and corrective feedbacks were given to students. Then, after one-week interval (for removing the practice effect of pre-tests), participants were administered the parallel forms of pre-test exams (again, on three different days). The performance of participants on pre-test/post/test exams in each variable was analyzed through paired-samples *t*-test in SPSS. The result then were reported in their standard format.

4. Results and Discussion

The data were obtained from each test and entered into the software. All data were parametric in nature and were measured on the basis of a 0-20 scale for reading comprehension and a 0-100 scale for reaction time and reading fluency. The results of t-test analyses for each variable are presented below.

4.1 Reaction time output

Fifty different Qur'anic derivations of the selected roots were chosen and typed randomly with fifty similar or non-similar no-Qur'anic words by a standard Arabic orthography. Then each word was changed into JPEG format. The one hundred JPEG lexical items were rendered into a 140 seconds movie made of 100 different episodes each taking 1.4 seconds to display. Participants were asked to raise their hands as soon as they detected a Qur'anic lexical item. Each correct answer received 2 scores which could result in a score between 0 and 100. Each participant was tested individually. The same test was repeated in the post-test. The scores obtained in pre-test and post-test were entered into SPSS and analyzed through paired-samples t-test. The result of this analysis is presented below:

Table 4:Paired samples t-test for reaction time

	Paired Differences					t	df	Sig(two-tailed)
	Mean	STD	STD-E.M	95% of Confidence Interval				
				Lower	Upper			
Pretest/Post-test	-22.6800	09.397	1.879	-26.559	-18.801	-12.067	24	.000

Thus, as indicated in table 4.1, t (24) = -12.067, p < 0.000. Considering the means of the two tests and the direction of the t-value, we can conclude that there was a statistically significant increase in the reaction time of the participants in detecting Qur'anic roots following the semantic-structural elaboration.

4.2 Reading Fluency output

Two parallel Qur'anic texts made of Qur'anic verses containing different derivations of the selected roots were given to students. Students were required to read the texts aloud in 60 seconds. All lexical items read inaccurately, with hesitation and etc. were spotted and calculated by two raters to extract the number of mistakes. Then the number of mistakes was subtracted from total lexical items read accurately during the given time (60 seconds). The number obtained was divided by words read per minute. The resulting number was fluency percentage which was multiplied by 100 to result in a round score between 0 and 100. The scores were entered into SPSS and

compared. The results are reported in table 4.2.

Table 5:Paired samples t-test for reading fluency

	Paired Differences					*t*	*df*	*Sig (two-tailed)*
	Mean	*STD*	*STD-E.M*	*95% of Confidence Interval*				
				Lower	*Upper*			
Pre/Post-test	-25.200	13.067	2.613	-30.594	-19.806	-9.643	24	.000

Accordingly, t (24) = -9.643, p < 0.000 indicate a statistically significant increase in reading fluency of the participants in fluently and accurately reading Qur'anic roots following the semantic-structural intervention.

4.3 Reading Comprehension output

Considering the materials selected above, the research team developed two parallel forms of a reading comprehension test containing summarization, main idea, fill in the blanks, synonyms, antonyms, and making inferences items. Each test encompasses 20 items each receiving one single score resulting in a total score between 0 and 20. Participants' scores in pre-test and post-test were collected and analyzed through paired-samples t-test. The output is presented in table 4.3 below:

Table: samples t-test for reading comprehension

	Paired Differences					t	df	Sig (two-tailed)
	Mean	STD	STD-E.M	95% of Confidence Interval				
				Lower	Upper			
Pre/Post-test	-3.280	2.372	0.474	-4.259	-2.301	-6.914	24	.000

Based on table 4.3, t (24) = -6.914, p < 0.000. These findings showed that instructional intervention aimed at semantic-structural elaboration has exerted a significant effect on the reading comprehension of participants.

In sum, three different t-tests conducted in this study revealed that semantic-structural elaboration promoted the reading efficiency of Iranian Qur'anic learners to a significant extent, saving word reaction time. These findings stand firm behind those studies holding that vocabulary knowledge, word-level meaning, and morphological-structural awareness promote various skills and sub-skills of language learning. These findings are discussed in detail in the following section.

4.4. Discussion

The findings of this study in the first experiment (reaction time) are in line with Ahmadi (2014) who had concluded that semantic-structural elaboration, in spite of raising awareness of language learners on word meaning, morphology, and syntax, increases reaction time due to increased processing and devotion of time and attention to formal aspects of the lexical items encountered. Also, obtained results stand firm behind some findings of Barcroft (2002) which states that semantic and structural elaboration on lexical items are cognitively demanding and therefore inhibit or debilitate some aspects of language learning. Barcroft (2002, p. 351) has suggested, therefore, that language teachers must be aware of the fact that language learners, especially in the initial stages of acquisition, suffer from serious limitations in their ability to allocate processing resources devoted to different learning tasks. This part of the findings implies that, despite the linguistic and metalinguistic awareness associated with semantic-structural elaboration, for beginners, semantic-structural instruction should be carried out with due caution to not impede their learning. Yet, a good bulk of studies have produced evidence on the efficacy of this practice for promoting other aspects of language learning such as vocabulary acquisition and recall. Just recently Dawson et al (2021) supported semantic and syntactic properties of suffixes facilitate links between word form and word meaning during the acquisition of new lexical representations and accordingly exert a direct effect on those aspects of language that are essentially word-based such as word reading fluency and reading comprehension. Dawson et al (2021, p.44) reported that when semantic-structural elaboration is done, properties of the suffix become congruent with whole-word meaning and therefore more linguistic learning occurs. Reichle and Perfetti (2003) had previously

argued that morphological knowledge may contribute to word knowledge and word processing by supporting the development of high-quality lexical representations which in turn, promotes learning of different language skills on top of which stands reading because it is strictly dependent on processing linguistic input. Again, like Barcroft (2002), these authors, in harmony with Bowers and Kirby (2010), suggested that instructing these aspects of linguistic competence needs to be delayed to more advanced levels of language learning. They added that adolescents benefit more from familiar suffixes in words during word learning. Besides, instruction at this level promotes understanding of morphological relationships, which, in turn, enhances acquisition of new vocabulary and consequently, those language skills which are more dependent on vocabulary.

5. Conclusion

Considering the importance of discovering the most effective ways of teaching different aspects of foreign language, the current research was an attempt to shed light on the effect of semantic-structural elaboration on some aspects of reading skill amongst Iranian intermediate Qur'anic Leaners as learners of Arabic as a foreign language. An experimental design was employed in which the effect of semantic-structural elaboration on some frequent Qur'anic roots as well as their derivations was examined. Research findings showed that, despite burdening learners with an additional cognitive load that reduces learners' reaction time, semantic-structural elaboration does not impede speed because it promoted the reading fluency of learners. Also, due to the increase in morphological, syntactic, and semantic metalinguistic knowledge of language learners, they outperformed in the reading comprehension post-test. This study had some limitations in sampling, design, and methodology. Future research is suggested to include more participants through random sampling to secure the generalization of research findings. Also, it is suggested that reaction time and reading fluency measurement needs to be estimated through computer-assisted procedures rather than being conducted manually. This study had theoretical and practical implications for language teachers, Qur'anic trainers, and linguists but the major implication of this research for instruction was that focus on a form such as semantic and/or structural elaboration for initial levels of learning any foreign language needs to be carried out with caution.

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