



Vocabulary Knowledge and Syntactic Awareness as Potential Catalysts for Reading Comprehension among Young Jordanian EFL Students

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Abstract: This study examines the potential effect of vocabulary knowledge and syntactic awareness on Jordanian ninth grade students' reading comprehension. The data were collected using pre-/post- reading comprehension, vocabulary, and grammar tests and an interview. The findings reveal significant differences (at $\alpha \leq 0.05$) in the students' reading comprehension scores on the post-test in favor of the experimental group. A number of implications and recommendations for future research are put forth.

Keywords: reading comprehension, syntactic awareness, vocabulary knowledge

1. INTRODUCTION AND BACKGROUND

Reading plays a vital role in learning and, thus, teaching children to become proficient readers is a major goal of primary education, in Jordan and around the globe. In the English as a foreign language (EFL) context, reading and, by extension, reading comprehension are valued by both teachers and learners (Richards & Renandya, 2002) as vital foundation skills for further language development (Martin-Chang & Gould, 2008) and better academic performance (Shanahan & Shanahan, 2008), later academic success (Butler, Urrutia, Buenger & Hunt, 2010) and, eventually, better employment (Deutsch, 2005) and quality of life.

However, even native-language readers are reported to have difficulty in text comprehension due to lack of background knowledge, inability to relate content to prior knowledge, inability to read fluently, difficulty decoding words, inability to attend to meaning while reading, inability to use comprehension strategies, and/or difficulty in understanding word meaning (Boardman, Roberts, Vaughn, Wexler, Murray & Kosanovich, 2008; Pressley, 2006; Reed & Vaughn, 2010). In the United States of America in 2005, one in four fourth-twelfth grade students was a struggling reader, and only about one-third of public school eighth grade students read at or above grade level (Boardman *et al*, 2008; Perie, Grigg & Donahue, 2005).

Thus, accounts of weakness among EFL learners (e.g., Cushing-Weigle & Jensen, 1996; Nation, 2005; Taguchi, Takayasu-Maass & Gorsuch, 2004; Rapp, Broek, McMaster, Kendeou & Espin, 2007) are hardly surprising. EFL learners, across proficiency levels, are reported to find it considerably difficult to comprehend text, which has been a matter of wide scholarly interest (e.g., Grabe, 2009; Hedgcock & Ferris, 2009; Koda, 2005).

Reading comprehension has several definitions (Shanker & Cockrum, 2009). However, most scholars agree that the ultimate goal of reading is understanding and learning from print (Boardman *et al*, 2008). According to Snow (2002, p.11), reading comprehension is "the process of simultaneously extracting and constructing meaning through interaction and involvement with written language". Grabe (2004, p.19) maintains that reading comprehension underlies "processing efficiency, language knowledge, strategic awareness, extensive practice in reading, cognitive resources in working memory to allow critical reflection, and appropriate purposes for reading".

Albeit extremely significant, learning from foreign language texts is hardly an easy undertaking. Research suggests that even college- (e.g., Pretorius, 2005) and school-age (e.g., Buly & Valencia, 2002) EFL learners considered proficient in spoken English find it difficult to understand discourse or glean patterns of meaning



beyond individual clauses from complex texts (Grabe, 1991; Grabe & Gardner, 1995).

Two sets of skills comprise reading comprehension: (1) lower-level lexical skills, namely, word reading efficiency and vocabulary knowledge, sentence skills (e.g., knowledge of grammatical structure) (Grabe, 2009; Shiotsu, 2010) and higher-level text processing skills (e.g., inference generation, comprehension monitoring and working memory capacity) (Hoover & Gough, 1990; Perfetti & Hart, 2001; Perfetti, Marron & Foltz, 1996, among several others) and (2) higher-level skills or those related to overall text comprehension (Kintsch, 2012). For successful reading comprehension to occur, both sets of skills are needed, as research has shown that vocabulary (Droop and Verhoeven, 2003; Qian, 2002), vocabulary and working memory (Seigneuric & Ehrlich, 2005) and word reading, grammatical awareness and vocabulary (Muter, Hulme, Snowling & Stevenson, 2004; Nation, Clarke, Marshall & Durand, 2004), inadequate processing, lack of knowledge or a combination of both (Perfetti, Marron & Foltz, 1996), and decoding, linguistic comprehension or both (Nation, 2005) affect reading comprehension.

In other words, reading comprehension is contingent upon several skills such as vocabulary knowledge (Biemiller, 2009; Braze, Tabor, Shankweiler & Mencl, 2007; Cain & Oakhill, 2006; Joshi & Aaron, 2000; Kuhn & Stahl, 2003; Martin-Chang & Gould, 2008) and fluency (defined as the ability to *read* with speed, accuracy, and proper expression) (National Institute of Child Health and Human Development (NICHD), 2000; Rasinski, Padak, McKeon, Wilfong, Friedauer & Heim, 2005). Traditionally, research on reading examined the effect of these factors on reading success and consistently reported that more reading leads to better reading comprehension, increased vocabulary, and greater fluency (Alber-Morgan, Ramp, Anderson & Martin, 2007; O'Connor, White & Swanson, 2007; Shany & Biemiller, 2010; Therrien, 2004).

Understanding vocabulary and word meaning is a requisite for good reading (Biemiller, 2009). Fostering learners' vocabulary is rudimentary for reading comprehension, as a learner who does not understand words is not likely to understand the reading text in which they occur (Armbruster, Lehr & Osborn, 2001; Hirsch, 1987; Nation, 2001; Richek, 2005). "Word consciousness" (Graves, 2006) is emphasized as a technique to train learners to realize the relationships among words based on their shared roots, prefixes, or suffixes (Beck, McKeown & Kucan, 2013).

The literature has a plethora of research (see, for example, Cunningham & Stanovich, 1997; Storch & Whitehurst, 2002) which reports that learners with a small vocabulary repertoire tend to avoid reading and, thus, deny themselves the chance to become good

readers. Therefore, fostering learners' vocabulary is rudimentary for reading success (Mezynski, 1983; Stahl & Fairbanks, 1986). Like that of vocabulary, knowledge of syntax (viz., the set of rules, principles, and processes that govern the structure of sentences in a given *language*) is also pivotal to reading comprehension, as it also determines text difficulty (Nelson, Perfetti, Liben & Liben, 2011; Scott, 2009).

Following this line of thought, vocabulary knowledge and syntactic awareness are addressed as fundamental requisites to reading comprehension (Madaoui, 2013; Nair, 2014; Shiotsu & Weir, 2007; Tausch, 2012). These authors realize that reading comprehension is a complex process in its own right, but it also depends on other equally complex lower-level processes. Their goal is to gauge the potential effect of vocabulary knowledge and syntactic awareness on reading comprehension. The reading comprehension training involved in the experiment is also consistent with research findings that reading success is contingent upon reading practice and time-on task (Cunningham, 2005; Moser & Morrison, 1998), coupled with accounts that exposing learners to a variety of texts increases reading comprehension, fluency and vocabulary (Ari, 2009; Guthrie & Humenick, 2004; Homan, Klesius & Hite, 1993; Shany & Biemiller, 2010).

2. PROBLEM AND PURPOSE OF THE STUDY

In Jordan, English is taught as a foreign language, starting at the first grade. The Jordanian EFL curriculum aims ultimately at developing the four language skills. However, Jordanian students are reported to face difficulties in text comprehension as a result of, among other factors, insufficient grasp over vocabulary and an inability to understand complex grammatical structures (Alkhaldeh, 2011). Notwithstanding the marked efforts of the Jordanian Ministry of Education in reforming EFL curricula, training EFL teachers and availing schools of state-of-the-art equipment, students continue to lag behind in their proficiency.

In the researchers' quest for a potential solution, vocabulary knowledge and syntactic awareness are used as potential catalysts to foster the participants' reading comprehension. Thus, the study seeks an answer for the question, *to what extent do vocabulary knowledge and syntactic awareness facilitate Jordanian EFL students' reading comprehension?*

3. SIGNIFICANCE OF THE STUDY

To the researchers' best knowledge, few studies have examined the role of vocabulary knowledge and syntactic awareness in EFL reading comprehension (e.g., Guo, 2008). Various stakeholders are hoped to benefit from the findings of this research. In addition to the more



obvious students and teachers, EFL textbook writers and curriculum designers may find practical implications for reading comprehension materials and instruction. Moreover, the findings may also be beneficial to the Jordanian Ministry of Education in its continuous quest for reform and innovation.

4. SAMPLING, INSTRUMENTATION, DATA COLLECTION AND DATA ANALYSIS

To achieve the purpose of the research, a sample of two intact ninth-grade classes was purposefully drawn from Alsareeh secondary school for girls, Irbid, Jordan. One 40-student section was randomly assigned to the control group and another to the experimental group. The control group was taught by the conventional method as outlined in the Ministry-prescribed Teacher Book whereas the experimental group was taught through the instructional program.

The two groups were pre- and post-tested on reading comprehension, vocabulary knowledge and syntax awareness. Between the pre- and post-tests, the instructional program, which comprises five reading comprehension passages and eight grammar points, was implemented over a seven-week interim, with four 40-minute sessions a week.

To answer the research question, means, standard deviations, adjusted means, and ANCOVA were used to determine any potentially significant differences in the participants' reading comprehension, which can be attributed to the treatment.

To probe further into the effectiveness of the instructional program and potential areas of improvement, the researchers designed a four-question, semi-structured interview schedule which was used to interview the teacher and some of the students of the experimental group. The researchers held individual 10-minute meetings with the participants at the school after implementing the program. The interviews were recorded and the responses were transcribed and, subsequently, analyzed for frequent themes.

Validity and Reliability of the Instruments

To establish the validity of the instructional program, the three tests and the interview schedule, they were checked by a jury of seven university professors and one English supervisor. They made a number of suggestions (e.g., more integration of reading comprehension, grammar and vocabulary activities, deleting a question from the interview schedule), which were all taken into account in the final versions of the instruments.

To establish the reliability of the reading comprehension, vocabulary knowledge and syntactic awareness tests, they were administered twice to a sample of fifteen students, who were excluded from the

main sample of the study, with a two-week time lapse. Pearson correlation coefficients between the first and the second administration amounted to 0.83, 0.82, and 0.86, respectively, which was deemed appropriate for the purposes of the current research.

5. FINDINGS OF THE STUDY

To answer the research question, which addressed the potential effect of vocabulary knowledge and syntactic awareness on reading comprehension, means and standard deviations of the students' pre- and post-test scores were calculated, as shown in Table I below.

TABLE I. MEANS AND STANDARD DEVIATIONS OF THE STUDENTS' PRE-/POST-READING COMPREHENSION TEST SCORES

Treatment	N	Grammar Pre-test (Covariate)		Vocabulary Pre-test (Covariate)		Reading Comprehension Pre-test (Covariate)		Grammar Post-Test (Covariate)		Vocabulary Post-Test (Covariate)		Reading Comprehension	
		Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
		No	40	8.45	4.01	10.18	4.80	9.85	2.73	10.65	3.58	12.70	4.06
Yes	40	7.65	2.12	9.68	2.43	9.50	3.00	13.28	2.21	14.40	3.12	14.43	2.65

Table I shows observed differences between the participants' mean scores in reading comprehension on the post-test, in favor of the students in the experimental group. To determine the potential statistical significance of these differences (at $\alpha \leq 0.05$), ANCOVA was used to compare the participants' performance on the reading comprehension post-test, as shown in Table II.

TABLE II. MEANS AND STANDARD DEVIATIONS OF THE STUDENTS' PRE-/POST-READING COMPREHENSION TEST SCORES

Source of Variance	Sum of Squares	df	Mean Square	F	Sig	Partial η^2
Grammar Pre-Test (Covariate)	0.58	1	0.58	0.16	0.69	0.23%
Vocabulary Pre-Test (Covariate)	11.08	1	11.08	3.13	0.08	4.11%
Reading Comprehension Pre-Test (Covariate)	138.31	1	138.31	39.06	0.00	34.85%
Grammar Post-Test (Covariate)	7.90	1	7.90	2.23	0.14	2.96%
Vocabulary Post-Test (Covariate)	59.24	1	59.24	16.73	0.00	18.64%
Instructional Program	18.40	1	18.40	5.20	0.03	6.65%
Error	258.53	73	3.54			
Total	763.89	79				



Table II shows a statistically significant effect (at $\alpha \leq 0.05$) in the students' mean scores on the reading comprehension post-test, as a result of the instructional program. To determine the group with the significant difference, adjusted means and standard deviations of the students' reading comprehension post-test scores (after instruction) were calculated, as shown in Table III.

TABLE III. MEANS AND STANDARD DEVIATIONS OF THE STUDENTS' READING COMPREHENSION POST-TEST

Program	Adjusted Mean	Std. Error
Without	12.71	0.35
With	13.96	0.35

Table III shows that the treatment has made a significant difference in the students' reading comprehension. Note also that the practical significance of the treatment is 6.65 (from Table 2 above), which signals a moderate effect for the implementation of the instructional program.

6. DISCUSSION OF THE FINDINGS

The findings reveal statistically significant differences (at $\alpha \leq 0.05$) between the reading comprehension of the participants who have received the vocabulary- and grammar-focused instruction and those who have not, which may signal the effectiveness of addressing vocabulary knowledge and syntactic awareness as catalysts for reading comprehension. The instructional program was found to have an effect, albeit moderate, on the participants' reading comprehension.

This positive effect may have resulted from the explicit vocabulary and grammar activities which allowed the participants the opportunity to improve their grasp on vocabulary and grammar and, subsequently, their reading comprehension. The treatment focused specifically on contextualized activities which fostered the participants' vocabulary and grammar towards the improvement of their reading comprehension.

Furthermore, not only have the researchers opted for explicit vocabulary and grammar instruction, but they have also increased the amount of student exposure to vocabulary and grammar to ensure effect. They have increased the number of vocabulary, grammar and combination of vocabulary and grammar activities in the instructional program to more than double those in the textbook. Compare the 20 vocabulary, 28 grammar, and 22 integrated vocabulary and grammar activities in the instructional program to the 31 vocabulary and grammar activities in the entire textbook, *Action Pack 9*.

This stronger exposure may have also increased the likelihood of the positive effect on the participants' reading comprehension.

7. CONCLUSIONS, RECOMMENDATIONS AND PEDAGOGICAL IMPLICATIONS

The findings of the study warrant several conclusions, most prominent amongst which are the following:

1. The treatment has brought about gains in the participants' reading comprehension, which may signal a positive relationship between the students' vocabulary knowledge and syntactic awareness on one hand and their reading comprehension on the other. Improving students' vocabulary knowledge and syntactic awareness was found to improve their reading comprehension.

2. The treatment was meant to gauge the potential effect of vocabulary knowledge and syntactic awareness (also used as covariates in the statistical analysis) on reading comprehension, but both vocabulary knowledge and syntactic awareness were also found to improve as a result of the explicit instruction offered in the course of the experiment.

3. In the interview, both the teacher and students reported reading comprehension gains brought about by the treatment, along with gains in vocabulary knowledge, syntactic awareness and students' motivation to read.

These researchers believe that EFL learners' reading difficulties do not result exclusively from insufficient knowledge of English syntax and vocabulary, but, to a large extent, from the absence of discourse-oriented reading skills and strategies. However, based on the findings of the study, it is evident that both vocabulary and syntax are rudimentary for student learning and, thus, teachers should be encouraged to design appropriate activities not only to foster students' vocabulary knowledge and syntactic awareness but also to use them as catalysts for improving reading comprehension.

However, as research (see, for example, Grabe, 2009; Han & D'Angelo, 2007) suggests that current EFL reading instruction is inadequate as it limits itself to pre-teaching vocabulary, activating background knowledge about the topic of the text, and asking post-reading comprehension questions, further attention is needed to discourse-level processing of texts (e.g., coherence). Thus, future research is recommended on other language skills, which would provide further evidence of the contribution of vocabulary knowledge and/or syntactic awareness to foreign language development.



8. LIMITATIONS OF THE STUDY

Despite the researchers' conviction that the current research is sound in method and procedure, they acknowledge that a potential limitation may ensue from the fact that the analysis was based on the participants' performance in only one test of reading comprehension. In addition, the participants in the experimental group received the treatment (viz., the instructional program) over a period of seven weeks before the administration of the reading comprehension test. Furthermore, only the variables of vocabulary knowledge and syntactic awareness were manipulated. A longer duration and a host of other variables (e.g., background knowledge, reading strategies) may have not only widened the scope of the research but also enhanced the credibility of its conclusions.

9. ENDNOTE

This manuscript is extracted from the first author's doctoral dissertation per the regulations in force at Yarmouk University, Irbid, Jordan.

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