



Teaching Word Meanings to Students at Different Reading Ability: A Controlled Assessment of the Contextual-Based Vocabulary Instruction on Reading Comprehension

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Abstract

The purpose of this study was to examine the effectiveness of contextual-based vocabulary instruction on reading comprehension of seventh-grade students at different reading ability levels in social studies. The Sentence Verification Technique test consisted of 16-items was used to determine participants' reading comprehension skills. In addition, a semi-structured interview form was used to describe participants' perceptions and experiences related to the vocabulary intervention program activities. The experimental condition received a contextual-based vocabulary instruction intervention program for eight weeks in 10 sessions; in contrast to the control condition participated in a wide reading program. As a result, this study yielded two findings: First, the results indicated that teaching students how to use contextual analysis to infer word meanings from context improved significantly their own reading comprehension scores. Second, the qualitative findings showed that poor readers could be able unlock the complexity of the meanings of unknown words and use the cognitive strategies that required to overcome their reading difficulties while reading through explicit instruction. The results suggested that it seemed as though the context-based vocabulary instruction used in this study to improve reading comprehension scores was a fairly powerful procedure for all students, both poor readers and average-high readers in the experimental condition.

Keywords

Contextual analysis
Contextual-based vocabulary learning
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Introduction

Vocabulary plays an important role in people's lives and their future expectations; an expansive vocabulary is the hallmark of an educated person. Because extensive vocabulary knowledge is strongly related to students' reading comprehension, at same time it has an important role in their overall school achievement (Beck, McKeown, & Kucan, 2002; Nelson & Stage, 2007). However, the amount of words in an individual's vocabulary is a good predictor of how well they can comprehend a text. In general, correlation between vocabulary growth and reading comprehension is high (Anderson & Freebody, 1981; Kuhn & Stahl, 1998). Researchers have emphasized that there is a mutual causal interaction between reading comprehension and vocabulary knowledge (Vadasy & Nelson, 2012). Nagy (2005) states that relationship of vocabulary to reading comprehension is likely bidirectional and reciprocal

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with comprehension, and vocabulary knowledge influencing each other and with both connected to reading volume. Figure 1 illustrates the cycle of learning that leads to vocabulary knowledge and reading comprehension growth (Nagy, 2005, p. 41). With regard to the cycle, Stanovich (1986) emphasizes that it is crucial to support students at each point in the cycle and he argues that students with larger vocabulary understand text or content and so they read more. According to the cycle, the amount of reading plays a bidirectional role at relationship between reading comprehension and vocabulary (Nagy, 2005). Accordingly, as the students increase their reading volume, they will have a broad vocabulary and they will be more successful in understanding of what they read, which helps them to become a better reader.

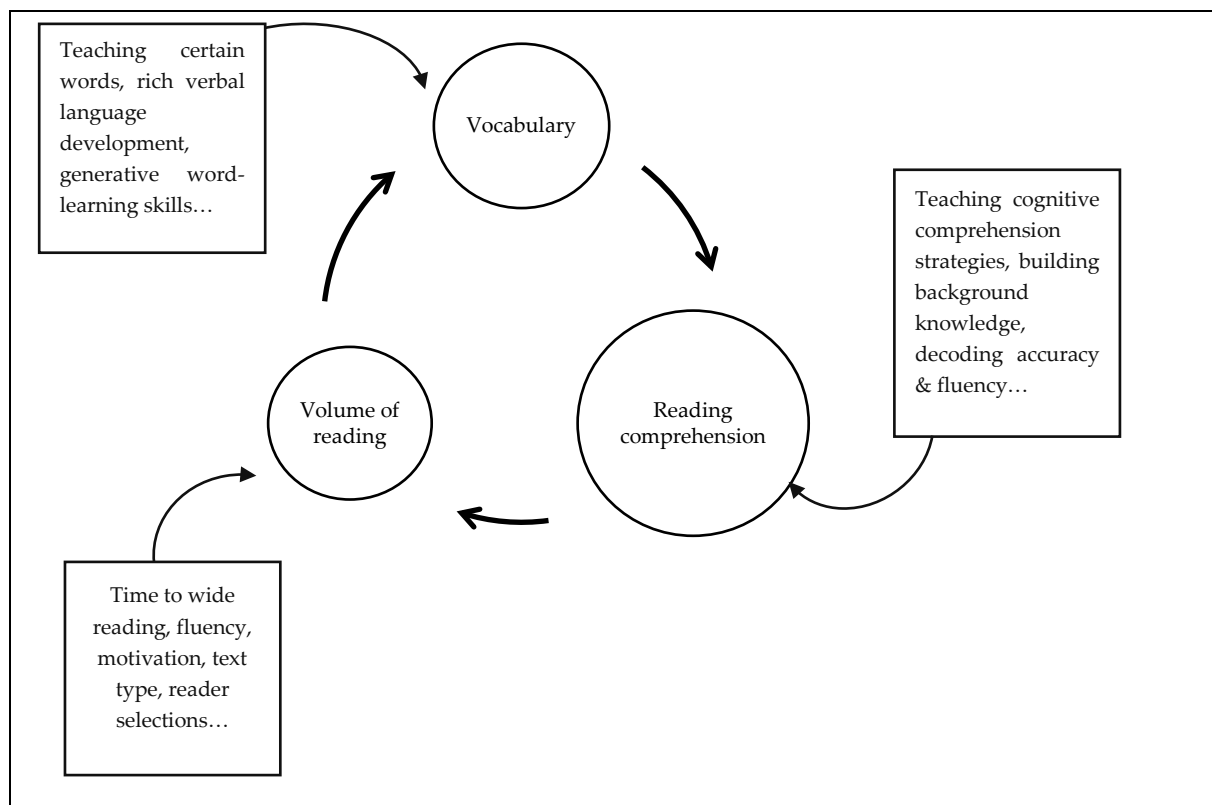


Figure 1. The Reciprocal Model of Vocabulary and Reading Comprehension and Some Instructional Implications On The Model

All this clearly demonstrates that there is a reciprocal causal interaction between the vocabulary and reading comprehension (Anderson, Wilson, & Fielding, 1988). In this respect, if the goal is to improve children's reading comprehension skills, then teachers should devote sufficient time to instruction of certain vocabulary words for students in their classrooms (Graves & Slater, 2004). However, students learn concepts better through explicit instruction thus, they are more successful in understand of what they read and perceive the social world (Alkış, 2012; Vacca & Vacca, 2007). Harmon, Wood and Hedrick (2008) point out the explicit vocabulary instruction plays a crucial role in content-areas where each student is expected to read and think "like a historian, scientist, writer or mathematician. Beck and McKeown (1991) argues three important vocabulary instructional positions that promote to develop children vocabulary and reading comprehension. The first position emphasizes direct teaching of new words meanings and related concepts (Zechmeister, Chronis, Cull, d'Anna, & Healy, 1995). The second position considers wide reading as an effective source of vocabulary growth and assumes that students learn incidentally new words and specific concepts while reading rather than direct teaching vocabulary (Nagy, Herman, & Anderson, 1987). Advocates of third position highlight the intrinsic complexity of unlocking the meanings of unknown words and promote the use of

dictionary (Schatz & Baldwin, 1986). These positions contribute to children's vocabulary growth and comprehension of reading materials in different ways.

Researchers have investigated the effects of explicit vocabulary instruction approaches, such as mnemonic strategies, repeated reading and wide reading, definitional methods and contextual analysis (Baumann, Kame'enui, & Ash, 2003; Levin, Levin, Glasman, & Nordwall, 1992; Scott & Nagy, 1997; Senechal, 1997). Previous research has shown that explicit instruction in specific new words meanings has significant effects on reading comprehension and vocabulary of students at different reading ability level (Fukkink & de Glopper, 1998; Nelson & Stage, 2007; Tomesen & Aarnoutse, 1998).

A vocabulary instruction program typically teaches students about 10-12 words per week or about 400-500 per year which perhaps 75% are directly learned (Nagy et al., 1987). Although word-learning methods helps students, it is not possible to give a definition for every word that they encounter. Because the number of words is too high to teach all of them (Stahl & Fairbanks, 1986). Considering the size of this practice in the content-areas, such as social studies and science, contextual analysis instruction (i.e., ways of inferring word meanings from context) as an instructional method (Baumann, Edwards, Boland, & Font, 2012) is effective in teaching specific words meanings to improve reading comprehension and make further reading easier.

Reading skills researchers have stated that only definitional methods of instruction do not reliably improve reading comprehension of readers; hence, this may cause a superficial a learning of content (Graves & Penn, 1986; Nagy et al., 1987; Stanovich, 1986). Nagy (1988) defines definitional methods alone do not produce sufficient in-depth knowledge and content understanding for comprehension, because definitions lead to only a relatively superficial level of vocabulary knowledge. Marzano (2004) suggested that teachers should integrate the definitional methods with rich contextual information factors, including the derivation of meanings of words in different types of context. Previous studies have indicated that teaching students to use context clues showed significant improvements in vocabulary and reading comprehension measures for students at varied reading skills (Goerss, 1995; Harmon, Hedrick, & Wood, 2005; İltter, 2016; Kermani & Seyedrezaei, 2015; Nash & Snowling, 2006; Nelson & Stage, 2007; Rinaldi, Sells, & McLaughlin, 1997). Hence, the skill of deriving word meaning from context has a great role in helping readers learn the meanings of unknown words from context they encounter during reading (Baumann, Kame'enui & Ash, 2003).

Contextual Analysis for Social Studies Reading Comprehension

Contextual analysis is a teaching and learning strategy through which readers infer word meanings from type of context clues (e.g., definition, examples, synonyms, generalization, contrast, cause-effect) or word parts before and after a known or unknown words (Baumann, Edwards, Boland, Olejnik, & Kame'enui, 2003). A simple strategy (e.g., definition clue) for meanings of *entomology* and *entomologists* would be cross out is and are called in the sentence as following (Vacca, Vacca, & Mraz, 2011, p. 174).

Etymology is the study of insects, and biologists who specialize in this field are called *entomologist*.

A similar example of context with multiple clues (Westfall, 2005, p. 10).

There is more methane gas in the natural gas, which is a light gas. A simple chemical compound of methane, carbon and hydrogen atoms. It is not easy to notice its presence because it is an odorless gas.

The hypothesis that students learned randomly by inferring the meanings of the unknown words they encounter while reading was documented in a number of previous studies (Goerss, 1995;

Shelfelbine, 1990). For this hypothesis, in first Nagy and Herman (1987) observed that readers learned many new words meanings by using certain contextual information and word parts following the contextual clues instruction intervention. They concluded that learning words from context increased students' reading volume, and so they advocated that contextual analysis supported incidental word-learning hypothesis. Greenwood and Flanigan (2007) emphasizes that context clues are very important for widely comprehending of a text, as well as for learning additional new vocabulary words. Therefore, contextual analysis as a vocabulary learning strategy has a sound and persuasive rationale in the development of readers' reading comprehension skills. This rationale depends on the fact that readers need a specific set of strategies that aid them use contextual information in order to cope with the unfamiliar words meanings while reading (Fukkink & de Glopper, 1998), but present-classes in schools many students particular poor readers and instructional readers (average reading comprehension level) have deliberately a limited ability in inferring the meanings of the unknown words from context while reading (Nelson & Stage, 2007; Vacca et al., 2011).

The purpose of this study was to investigate the effectiveness of context-based vocabulary instruction on middle-school students' reading comprehension skills in social studies classrooms. The reason for selection of the social studies as a content-area, social studies reading and comprehension is quite different from the other content-areas of reading (Monte-Sano, 2011). Because social studies reading embraces various technical terms, text structures, text types, it requires for students to use higher-level reading comprehension strategies. Because the social studies is a content-area based on citizenship development in a democratic society, which includes many subjects including geography, history of citizenship and history economic, it requires more inquiry, critical thinking, problem solving, effective listening and taking concise notes during lecture or reading (Massey & Heafner, 2004; Yalçınkaya & Sever, 2015). Therefore, social studies is a heavily text-based content-area that is tightly with literacy education (Monte-Sano, 2011). For example, teaching students how to critically think about, analyze and evaluate and build conclusions texts or primary sources like a historian (with a historical perspective approach) is one of the objectives of social studies literacy education (Demircioğlu & Akengin, 2009).

Achievement in social studies classrooms generally depends on the ability of students to use these skills effectively while reading or listening. One of the reasons for the struggles in the reading comprehension in the social studies classrooms is student have a limited ability and experiences of the vocabulary and higher-level reading strategies (Vacca & Vacca, 2007). The studies on the perceptions of primary and secondary school students in social studies classroom, participants described that social studies reading was boring and they defined that they did not thought social studies content as an easily understood content-area (Massey & Heafner, 2004; Stodolsky, Salk, & Glaessner, 1991). Over the past 10 years, studies on students' perceptions of social studies have shown that there is a worrying tendency regarding the artificial and persistent perception of social studies (Chiodo & Byford, 2004; Zhao & Hoge, 2005). For instance, Beck, Buehl and Barber (2015) determined that many students reported that they struggled with unknown vocabulary in social studies texts because they did not figure out the meanings of the words in the texts. However, many social studies teachers do not prefer explicit instruction to teach their students vocabulary or reading comprehension skills to improve social studies reading and comprehension. . Teachers generally expect reading and vocabulary skills to be acquired and used by their own students in advance, rather than gaining them to students (Dieker & Little, 2005; Fordham, Wellman, & Sandmann, 2002; Guillaume, 1998). But, the explanations of the literature have emphasized that the teachers should give the effective word-learning strategies to students and that they should have sufficient time to reading teaching to encourage students in order to increase the understanding of social studies content (Baumann, Kame'enui, & Ash, 2003).

In sum, students need independent strategies that they can apply when they encounter complex expository texts or unfamiliar words during reading without the need for anyone. Pressley (2002) mentioned the use of cognitive strategies during reading while describing the characteristics of a good reader. According to him, it is necessary to teach students how to become strategic readers for content literacy at an early age. Based on the comments reported here, social studies teachers should contribute to their students' content-area vocabulary learning by choosing books with text features in order to improve student reading comprehension skills (Beck et al., 2015). This study aimed to extend the literature by combining the previous studies on contextual analysis and to teach the seventh-grade students at different reading ability levels the strategy of inferring word meanings from context to support the development of reading skills in the social studies. A unique aspect of this study was that the skills of inferring or deriving word meaning from context was taught in social studies classrooms setting in which students at different reading ability levels were instructed simultaneously and without differentiation in terms of instructional intensity. For this purpose, following the sub-questions of this study were addressed:

- (i) What was the effect of contextual-based vocabulary instruction strategies on students' reading comprehension (whole of sample)?
- (ii) Was there a significant main effect between the pre-and post-test scores of the two treatment conditions?
- (iii) What was the effect of contextual-based vocabulary instruction on reading comprehension of students at different reading ability levels?
- (iv) How did the students describe context-based vocabulary instruction activities?

Method

Research Design

In this study, the role of context-based vocabulary instruction versus wide reading procedure that was embed in social studies lessons was assessed on seventh-grade students' reading comprehension skills. The study focused on investigating the experimental effects of contextual analysis as a vocabulary instruction and learning approach that was discussed its educational value in supporting reading comprehension and vocabulary learning (Baumann et al., 2002). The effects of vocabulary instruction program on the learning process and comprehension ability were investigated by the quantitative and qualitative research methods. Therefore, a mixed-type method was used which allowed both quantitative and qualitative research methods to be used together. In the quantitative approach, a 2x2x2 quasi-experimental by utilizing a nonequivalent control condition pre-and-posttest design was used (Creswell, 2008). In the qualitative approach, interviews were conducted out the students selected in the experimental condition after the end of the intervention, and thus the reflections of the vocabulary intervention program to the learning process were described by students. For this reason, the qualitative dimension of the study helped to support the quantitative data. According to Creswell (2008), the power of the mixed-type method provides an advantage that combines each qualitative data with quantitative data. In this way, in such research, quantitative data might provide consistent and generalizable information together with qualitative data.

Participants

Participants of this study consisted of seventh-grade students in Bayburt, Turkey during the 2015-2016 academic year and who were in a middle-school where a socio-economic low-level location. The reason for selecting the sample group among seventh-grade students was that these learners are entering to synthesize new knowledge, understand of what they read, and develop higher-level strategies to strengthen their learning experiences. Students at this stage tend to acquire metacognitive comprehension strategies, such as linking to text prior-knowledge knowledge, develop a reading purpose, recognizing viewpoints, asking questions and responding to determine main idea and details of text, interpreting text by dialogue with text. However, at this stage, students' prior-knowledge and cognitive abilities are still limited, but reading comprehension may be more effectively after the end of the stage (Chall, 1996). Thus, seventh-grade students are expected to encounter many conceptually

demanding lectures and expository texts so it was posited that teaching students how to use infer word meanings from context should help improve understanding the word meanings and their reading comprehension skills in social studies and other fields.

Participants were selected from three intact seventh-grade classes in the treatment school. Initially, the selection of participants was started with 96 students, of whom 40 were males and 56 were girls, who were in these classes. Some criteria were used to select the participants of the study. First, the reading comprehension was a dependent variable based on the achievement of the participants in reading. It was aimed to determine the reading comprehension scores of the participants in these classrooms because the reading comprehension ability was a factor that was thought to be effective on the sub-questions of this study. In order to meet this criterion, before receiving the instruction, the Sentence Verification Technique [SVT] (Royer, Carlo, Dufresne, & Mestre, 1996) consisted of 16-items was used to determine participants' initial reading comprehension skills or if they had any reading disorder. Hence, possible participants were identified by analysis of the SVT pre-test scores.

In the interpretation of the SVT test performance, the average readers answered approximately 71-79% of the items correctly, lower readers scored 70% or lower; and higher readers scored 80% or above (Royer, 2001). According to the SVT pre-test results, 25% of the participants in these classes received a score of 80% or higher in the test, while 40% of the participants received a score of 71-79%. 35% of the participants received a score of 70% or lower in the test. The scores of these students ranged from 40.27% to 63.6%. According to the examinee standards developed by Royer (2001), the SVT pre-test results showed that participants in the three classes had equivalent score averages. The mean scores from the SVT test of the classes were .884 (67.85%; $N=35$), 9.41 (66.99%; $N=33$) and 10.01(71.23%; $N=29$), respectively. In general, participants scored close to the level of the average reading comprehension standard of 71% from the SVT test, but when Royer's examinee standard was assessed, the results suggested that they understood the text at a low level. In the other class ($N = 29$), some students did not complete the SVT pre-test and excluded from the study. In sum, two classes were randomly assigned to an experimental condition and a control condition.

According to the results, 80% or higher of the SVT test students with higher reading comprehension ability, 71-79% of students with average reading ability, and 70% or lower of students with low reading comprehension ability were grouped (Royer, 2001). Tomesen and Aarnoutse (1998) have argued that average readers are just above the level of poor readers, but that they can serve as models for poor readers because they use some cognitive strategies while reading. Considering this comment and Royer's SVT test standards, good readers and average readers in this study were grouped together under one single group reading ability. However, participants with low reading ability were identified as "poor readers" and these were considered as a separate group. According to Kuhn and Stahl (1998), poor readers are passive in reading, they cannot clearly analyze their own reading behaviors, and they are insufficient to understand a part of the text or full text and recall main ideas and details because they know fewer vocabulary knowledge. This leads to the continuous opening of the gap between good readers and poor readers. Therefore, these readers are in the proximal developmental zone (direct or supplementary education scaffolding) because they are "at the Anxiety Level" (Akyol, 2009; Paris, Lipson, & Wixson, 1994; Rasinski, 2012; Vygotsky, 1978).

In the interpretation of the SVT test, scores of 71% or higher were identified as mean average-high reading ability group (average-high readers) and 70% or lower were defined as low reading ability group (poor readers). According to these evaluation standards, the students with a score of 71% or higher in the experimental condition ($N= 25$) were assigned as average-high readers [ranged from 73.1% to 86.76%]; students with a score of 70% or lower ($N = 10$) were assigned as poor readers [ranged from 43.89% to 64.58%]. In the control condition, the students with a score of 71% or higher in the test ($N = 21$) were assigned as average-high readers [ranged from %72.49 to %88.746]; while the students with a score of 70% or lower ($N = 12$) were assigned as poor readers [ranged from 45.03% to 66.72%]. As a result, in this study, active sample size was 68 students. While there were 35 (17 males, 18 females) in the experimental condition, there were 33 (19 males, 14 females) in the control condition.

In addition, to determine the reflection of the context-based vocabulary program activities to the learning process, interviews were conducted out the volunteer students in the experimental condition at the end of intervention. The maximum diversity sampling technique one of the purpose of sampling methods was used to select of the participants. Maximum variation sampling aims to capture whether or not there are any common partners or shared dimensions of phenomena among diverse cases, also to illuminate by revealing different dimensions of the research problem. Any common patterns that emerge from great variation have a particular value and interest in capturing the shared, central dimensions of a phenomenon or core experiences (Patton, 1990, p. 172). Some criteria (e.g., gender and reading ability level) were considered in participating in interviewing to further elucidate the perceptions of the effects of vocabulary intervention program. Fifteen students who provided these criteria and reported to take part in the interviews voluntarily were included in the study. Miles and Huberman (1994) state that a small number of participants should be used in qualitative studies. This was because the aim is to study in depth with the participants on a specific content and phenomenon. When personal information on the participants was examined, 8 out of 15 students were in the average-high reading ability group (4 boys and 4 girls) and 7 students were in the low reading ability group (4 boys and 3 girls).

Treatment Procedures

Procedures in the Experimental Condition

In order for the contextual analysis instruction program to be functional, target words to be taught should be connected to an instructional context (American Speech-Language-Hearing Association, 2004). To meet this criterion, the researcher who conducted this study (the author) identified 45 social studies concepts with one or more meanings that would had the most functional and meaningful effect on the participants. The selected concepts are largely unknown to the participants in this study, but they were the vocabulary words they would soon encounter. In addition, the selected concepts were described as important concepts that were seen as keywords in the social studies themes (e.g., the unit of Population in Our County) and considered useful for the seventh-grade students' vocabulary knowledge. The concepts were selected from different sources, such as seventh-grade social studies textbook (Evirgen, 2016; Ministry of National Education [MEB], 2005, 2016), issues discussed in class, social studied teacher opinions, and children's literature products that were appropriate to the grade-level. As a result, the target concepts to be taught were selected by considering the needs of the participants, and these concepts were thought to have a more functional impact on their vocabulary knowledge (Beck et al., 2002).

After this step, The Vocabulary Knowledge Scale, widely accepted in the literature was used to assess the participants' initial knowledge levels of the target concepts (Wesche & Paribakht, 1996). Vocabulary researchers have stated that the vocabulary scale can easily be used to measure participants' vocabulary development and pointed out this tool is quite successful in measuring students' knowledge of the meaning of the target words, their depth of use and their familiarity with the words (Baumann, Kame'enui, & Ash, 2003; Lubliner & Smetana, 2005). The scale included all vocabulary learning levels form unfamiliar with words to use the words productively (Wesche & Paribakht, 1996).

Stage 1. I have never seen the word before.

Stage 2. I know there is such a word, but I do not' know what it means.'

Stage 3. I have 'a vague contextual placement of the word'; and

Stage 4. I have the meaning of this word and use it in a sentence.

According to the results of Vocabulary Knowledge Scale, it was found that the majority (87%) of the students who participated in this study (Level 1 and 2) were not familiar with the selected words, some of the students (6%) had some knowledge (synonyms, example) about the meanings of these words and the rest of the students know words knew one or more meanings. As a result, 45 of 9 concepts program (e.g., *migration, peace, earthquake, power plant, municipality* etc.). were excluded from the study

and the remaining 36 concepts (Stage 1 and 2) were decided to use in order to get them through context-based vocabulary intervention.

Another criterion in this study was the selection of expository texts to use for the context-based vocabulary learning activities. According to the researchers, reading achievement in middle schools is largely based on understanding of expository texts. Because expository texts mostly contain various technical concepts, complex phenomena, or scientific generalizations, hence the reading comprehension is more difficult (Schumaker, Denton, & Deshler, 1984). However, previous research has shown that students had struggle in understanding of what they read due to unknown terms and complex phenomena in expository texts in relation to content-areas (Massey & Heafner, 2004; Williams, 2005).

First, the literature review was conducted to determine expository texts social studies texts for the participants in appropriate grade level resources. For the vocabulary instruction program activities, 15 expository text passages suitable for seventh-grade-level were selected by the investigator. (e.g., Natural disasters McGuire, 2013; Press freedom Ministry of National Education, 2016; the world's resources Reed, 2011, People's habitats Reed, 2011; Contributions to scientific knowledge of European Civilization (Evirgen, 2016). Some evaluation criteria was considered in the selecting of texts for the study (Baumann et al., 2012). (a) Linked to with the subjects in the social studies textbook chapters, (b) containing the target concept and their one or more meanings, related concepts, (c) containing the explicit contextual clues (e.g, example, definition, comparison, synonym / peer), (d) containing main ideas and details to improve students' understanding of what they read. The researcher developed an evaluation rubric for the evaluation of texts. Texts included main ideas about the target words, complementary key ideas, multiple meanings, and rich context clues. The assessment rubric consisted of a number of items, such as the suitability of the texts to the grade-level of the participants, the clarity of the passages, the meaning of the target words and their associated related words, some types of context clues including word types (e.g., academic vocabulary, scientific term, etc.), sentence structure, dictation and target word information (Blachowicz & Fisher, 2011). The rating scale consisted of a 4-point Likert-type scale (e.g., 1= not appropriate, 2 = relevant, 3= highly relevant, 4= excellent). The length of social studies text passages was ranged from approximately 200 to 500 words. The texts aimed to help students learn target concepts from context. A copy of the texts and the assessment rubric was delivered to two independent raters who studied in the field of reading-writing curriculum. As a result, it was concluded that three out of the 18 text passages found for this study did not fit the criteria in the assessment rubric. For two raters, the inter-rater reliability coefficient was calculated. The inter-rater reliability coefficient was found to change between .86 and .91. These scores indicated that there was high agreement between the raters for the analysis of the texts (LeBreton & Senter, 2008).

In this study, all the text passages were read by the investigator in both the experimental and the control condition. The investigator has had extensive experience as both a teacher training educator and K-12 education teacher. The K-12 classroom experiences that the investigator has had included six years working in settings with different students. The investigator also has been teacher educator for past six years. The teacher training education experience included skills of learning, reading practices and strategic learning models course related to evidence-based practice for teaching students.

Context Based Vocabulary Learning Practice

Target concepts were taught students the use of the contextual based vocabulary instruction within the daily social studies content for 8 weeks per week approximately 40 minutes (10 sessions). The context-based intervention program begun with activities pre-lesson activities and spread to all teaching activities applied during the lesson. Greenwood and Flanigan (2007) and Nagy (1988) define that learning words from context is an important avenue of vocabulary growth and it deserves attention and practice in the classroom. They also argued that for the achievement of th skill of inferring word meaning from context, teachers should model more time to acquire this strategy, and that in the ensuing years students had to undertake advanced practice until they reached the level for independent performance in the use of context to derive the meanings of new words. The following steps (Figure 2)

were used to teach students how to learn words from context (Antonacci & O'Callaghan, 2011; Tierney & Readence, 2005).

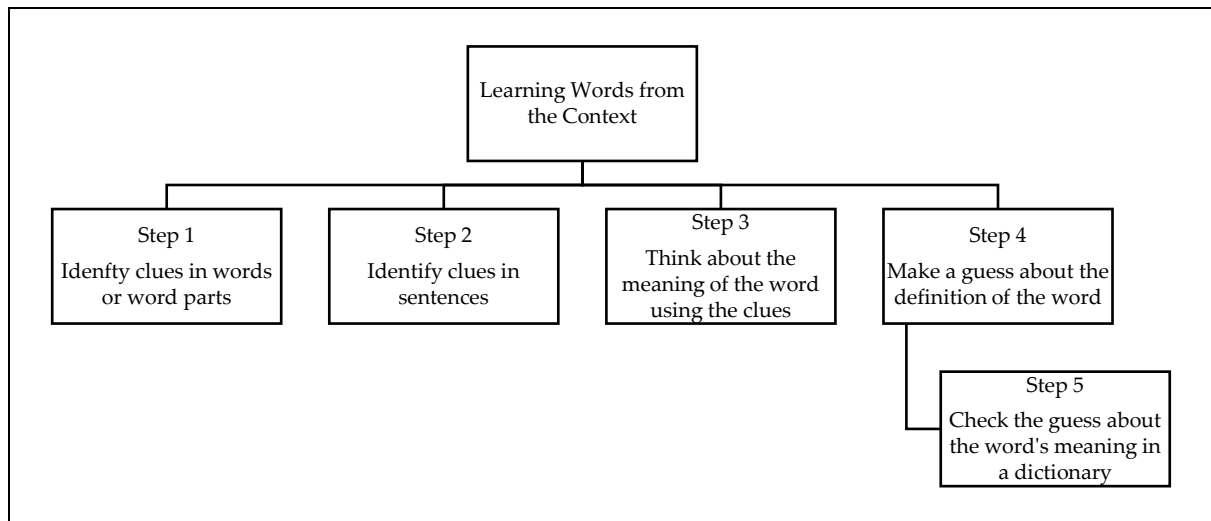


Figure 2. Teaching Unknown Word Meanings From The Context

A- On the first day, the teacher demonstrates how to identify context clues with a chart in order to help students decipher the meanings of unknown words from context.

1. To teach the strategy, the teacher pronounces to the students choosing two sample concepts that are important to understand the text but difficult (e.g., transportation, transportation).
2. The teacher distributes these concepts and a short text passage (at least 20-30 sentences) to the students with the meanings of each of them. Students were asked this text to read silently and explain the context clues that would help determine the meaning of these words in the text. It was important that texts included a variety of contextual information (e.g, definitions, examples, and prefix/suffix) about the words to acquire students the ability to infer word meanings from context.
3. The teacher gives general explanations on how to infer an unknown word meanings from context.
 - a) The teacher underlines the contextual clues that show to infer word meanings verbally. The teacher uses “Think-aloud method” verbally and physically modeling it to show students strategies of using contextual information.
 - b) Afterward, the teacher distributes students copies of the graphic context clues chart (see Figure 3) (Antonacci & O'Callaghan, 2011) that will help in word learning and demonstrates how it is used in identifying a words meanings via projection. A copy of the social studies text that contains the words and their meanings are distributed to students.

Words	Identify contexts cues and meanings		Combine the meanings clues	Check the meaning of word
	1. Stage	2. Stage	3. Stage	4. Stage
	Word/word parts	A sentence surrounding the word	Clue meanings (syntactic and semantic clues)	Check the word meaning in a dictionary
				My generated word meaning Dictionary definition

Figure 3. Context Clue Chart

B- *On the second day, the teacher uses following the procedures of vocabulary learning for each target word:*

1. *Selecting of concepts:* The teacher explains to students the words of the day. Students are asked whether they are familiar with the words by activating their prior-knowledge. Students are directed to read the text silently and underline the words in the text topic by using colored pencils and to write each word on their context clue chart (See Figure 3) in the word column.

2. *Identifying context clues of the target words:* The teacher directs students to identify context clues that can help them infer words' meanings from context. Students look for clues in word parts, such as root words, prefixes/suffixes or in nearby sentences while reading. Students write the context clues they have identified on their charts in the context clue column. If students have difficulty in identifying context clues, the teacher can use explicit instruction by demonstrating how to recognize text that will provide explicit context clues. The teacher models the strategy a number of times in order to promote the development of the students' skills to infer words meanings from context during normal reading.

3. *Combining context clues identified:* After identifying context clues by the students, they are revised in order to arrive at the target words meanings. Students are asked to generate new meanings of the words by combining context clues and write them on their chart.

4. *Students' self-definitions of the target words:* Students infer words meanings from the context clues and write them on their charts in the appropriate column. They can use a dictionary to check their definitions of the words. If students' meanings fit with the definitions in the dictionary, then they pass and move on to the next step. However, if the meanings do not fit, then the context clues that the students have identified are revised. Students are then guided to try again and determine the context clues that equal with the established meanings of the target words. The teacher helps students who have trouble identifying word parts or context clues in the text topic.

5. *Semantic mapping activity for reinforcing words' meanings:* In this step, the students matched the related concepts that appeared in the previous lesson activities with the appropriate meanings of the target word. The students were asked to practice mapping target words' meanings to other related words. This activity helped students expand their knowledge base and teach them that words and their meanings are highly interrelated (Stahl, 1999). The words' meanings appeared in a graphic organizer format with space provided for the students to write the associated related words, concepts and ideas (Nelson & Stage, 2007).

6. *Creating story activity using target concepts to control reading comprehension:* Lastly, the teacher directs the students to write stories to check whether the target words are used appropriately. Students are asked to write short stories in which they use each of the target words with their meanings. After the writing activity, students discuss the meanings of the words with their peers. After this process, students were asked to share their stories with their partners and to evaluate their understanding of what they read with reciprocal questioning (each student was asked to produce at least three reading comprehension questions about the stories).

In sum, for the experimental condition, the expository text passages were given during the first session and they were told to read the text silently. Subsequently, the Context Clue Chart in Figure 3 was given to help students acquire the skills of inferring word meanings from context. The training given students by the teacher in the next session 2 consisted of the defining, describing and combining of the context clues and strategy steps (Steps 2 and 3). In the course of the combining context clues phase, students were asked to connect new meanings by combing contextual clues that they identified in order to derive word meaning from context in 100% accuracy and used dictionary definitions to check the correctness (step 4). The next 9 sessions was made up of corrective feedback on the use of direct teaching, practice and strategy, from step 3 to step 6 (Creating stories from the target words/concepts). The 10

session was composed of the post-test. As a result, the basic implementation steps of the contextual vocabulary learning strategy was implemented in each classroom session. In this practice, the teacher repeated verbally the meaning and content of each step of the strategy. The teacher provided the necessary training by modeling for the students to reach an independent performance level in using this strategy, by establishing dialogues with the students and also by providing them corrective feedback on correct use of the strategy.

Procedures in the Control Condition

The students in the control condition aimed to improve their reading skills through wide reading strategy that embedded in daily social studies instruction for 8 weeks. No specific vocabulary instruction was given to these students. Students were asked to read passages in the textbook and expository texts regularly given by the teacher per week (Evirgen, 2016; MEB, 2016). Researchers have indicated that wide reading is an informal way of learning words and allows readers to choose a variety of materials based on their competence and relevant areas. Wide reading requires a large amount of text to be read to encourage understanding of the content. Wide reading includes an independent and paired reading that gives students the opportunity to choose a text based on their own interests and abilities (Bamford & Day, 2004; Brown, 2009; Pikulski & Chard, 2005). Nagy (2005) emphasizes that wide reading increases children's vocabulary and comprehension of text. Because wide reading allows the reader to repeatedly expose certain words in rich contexts (Blachowicz & Fisher, 2011).

Wide Reading Strategy Procedures

In the control condition, the teacher first created two reading groups in the class, taking into account the SVT pre-test results. Each of pair group included both the poor readers and average-high poor readers. The teacher presented two different reading passages for each group each week. Students were included in the same amount of weekly reading practice. These reading passages were read considering the ability of poor readers in each student group. Students read the same reading passages once. Each reading group once read two different pieces of text aloud and followed the text while the reader was reading. Thus, student groups worked on four different readings in total. This includes reading comprehension (reading words), new vocabulary learning and summarizing components of reading groups. Thus, students were asked to share their text summaries and their learning from the text to encourage other students to read at a realistic reading speed while reading from them (Wexler, Vaughn, Roberts & Denton, 2010). Therefore, all students were held accountable for the content of reading.

Students with large reading literacy have made the best reading every week a graph. This represents the student's ability to follow the minute he or she reads correctly. A student with a low reading level in the student groups was able to read 100 words correctly per minute and the reading level in the following sessions increased when he / she made fewer than 50% errors in two successive reading sessions (Wexler, 2007). If the student with a low reading level did more than two errors per 10 words, the reading level was reduced (Wexler et al., 2010). The teacher watched groups of students in all reading situations by walking around the classroom and randomly observed groups of students to make sure that they would finish their work on time. Thus, regardless of the conditions of the students, they can be read simultaneously with other student pairs and other students in the class. Students in the control condition participated in large reading exercises for 15 to 25 minutes per week for 8 weeks. The rest of the class hours were taught daily social sciences.

Instruments

1-Reading Comprehension Test: In this study, the Sentence Verification Technique test developed by Royer and colleagues (1996) was used to measure the effect of context-based vocabulary teaching on participants' reading comprehension achievement. The selection of the Sentence Verification Technique in measuring comprehension ability was the reason why this tool showed highly valid and reliable

results in the reading and listening comprehension measures. Previous studies have shown that SVT tests can be used as a variable dependent on assessing curriculum output, such as problem solving, reading comprehension, listening proficiency, and in distinguishing students from different reading levels (Stine-Morrow, Soederberg Miller, Gagne, & Hertzog, 2008; Ulusoy & Çetinkaya, 2012). According to Royer (2001), sentence verification technique is an evaluation tool that requires the use of multiple cognitive strategies (e.g., constructing meaning, listening, remembering, encoding) during reading in reading comprehension by activating reader's prior-knowledge. A test developed using a SVT represents to understanding of reading material, to establish dialogue with the text, to make a logical connection between the text's things, to obtain detailed information about text structure, to derive the meanings of the words from text, to raise awareness in the structure of the text. Hence it is a successful tool used to measure the understanding of what good and poor readers read (Rasool & Royer, 1986).

In the development of the SVT test, an expository text called "Salt Lake" ("Tuz Gölü," n.d.), which was suitable for seventh grade level (approximately 500 words in length), was selected. A set of test sentences measuring the reading ability of participants were comprised from the content of the text in accordance with Royer's (2001) examinee standards. With these test sentences, reading comprehension are measured through the use of textual clues, key concepts, or using details that identify the main idea the original texts read (Royer, 2001). The construction of SVT tests involves developing one to four types of test sentences from each sentence in a text. The first of test sentence is an original and it is a copy of a sentence in the original paragraphs in a text. The second types of test sentence, called a paraphrased. Meaning change means that the meaning in the original sentences is differentiated by changing one or more keywords in the original sentences. It should be noted that in the writing of such materials the main idea of the target text is identified and a few words are changed in this main idea. The third types of test a meaning-change and is constructed by changing one or two words in the sentence so that the meaning of the sentence is altered. The fourth type of sentence distractor. Distracting sentences constitute completely different sentences extracted from the sentences in the text, without disturbing the syntactic structure of the original text and adhering to the main theme in the whole text (Royer et al., 1996; Ulusoy & Çetinkaya, 2012).

In light of this information, the investigator read the original text and identified a set of test sentences in the original text passages. Then 16 test sentences were constructed from each passages in the text by considering four types of test sentences identified by Royer (2001). The original text was presented two independent raters who were graduate students in PhD education and unaware of the sub-research questions of the study. The raters independently constructed 16 test sentences from each passage in the original text according to the four item types of sentences. By comparing the test sentences constructed by the raters, the interrater agreement reached 100%. The actual SVT test sentences were determined as suitable for measuring participants' reading ability levels. After this step, *yes* and *no* items were added to each test sentence for the scoring of the SVT test. Students are instructed to answer *yes* to a test response if it has the same meaning as a sentence in the original text passage. Paraphrased and original sentences should receive *yes* responses (Royer, 2001). In the scoring test, if a student responds *yes* to these types of test sentences, then he receives one point. However, *no* is the correct response for test sentences that have meanings different from those in the original passage. Thus, *no* is the correct response to distractors and meaning-change sentences. If a student responds *no* to these types of items, he receives 0 point. The highest possible score on the SVT test is 16, and the lowest is 0. Examples of sentence types in the prepared SVT test were presented in Figure 4.

Sentence Types	Test Sentences
1-Paraphrased	Nearly all of the waters of the Salt Lake are dry in summer due to heavy drought.
Sentence in the text	Almost all of the waters of the Salt Lake is dry during the summer months due to intense evaporation.
2- Meaning-change	As it is one of the regions with the highest rainfall in Turkey, Salt Lake Region is very rich in terms of river network
Sentence in the text	Salt Lake Region is very poor in terms of river because it is one of the least rainfall region in Turkey
3- Original	Turkey supplies approximately 70% of its salt needs from this lagoon.
Sentence in the text	Turkey supplies approximately 70% of its salt needs from this lagoon.
4- Distractor	In the writing of the distracting kind, the sentences which are not included in the texts read by the readers are written according to the main theme of the text.
Sentence in the text	Unconscious irrigation in agriculture leads to pollution of Salt Lake.

Figure 4. Examples of Sentence Types in the Actual SVT Test

The SVT test and expository text was administered to 250 seventh-grade students middle-schools, except for the intervention school in Bayburt. The expository text and the SVT test were presented to participants on separate pages. Before administration, the investigator gave shortly a set of instructions participants on how to complete the test. Participants were asked to read carefully the original text and then to return to the page with the SVT test items to give their responses without turning to the text. The completion of the SVT test took approximately 30 min. Data gathered from the SVT test were analyzed with the use of the descriptive statistics. Royer's (2001) examinee standards were used in the interpretation of the SVT test performance (Scored of 71% or higher means average-high level of reading comprehension ability, 70% or lower means low level of low reading comprehension ability).

Table 1. Means and Standard Deviations of the SVT Test Items

Item Types	Mean	SD
Original	6.10	1.79
Paraphrased	5.08	2.08
Meaning change	3.36	2.16
Original	2.55	1.45

As shown in Table 1, the original test items had the highest mean scores ($M=6.10$) while the distractor items (2.55) and the meaning-change items (3.36) had the lowest mean scores in the SVT test. According to Royer's (2001) examinee standards, most of participants could be described as correctly comprehending approximately 76% of the text material on average level ($M \geq 76\%$). The Kuder Richardson [KR-20] reliability coefficient was .86 for the SVT test.

2-Interview Form: At the end of the contextual-based vocabulary intervention, 15 students in the experimental condition were interviewed to determine whether there was a change in students' learning, or to obtain data on possible changes. Semi-structured interview form was used to collect data in interviews and voice recorder used to avoid any data loss. In the interview process, students were asked open-ended questions to determine their reflection on the learning process. When the interview

questions were being developed, it was based on assessing the reflection of contextual-based vocabulary intervention on learning outcomes. Prepared draft questions were presented to two raters working on reading curriculum. The form was delivered two raters in the field of literacy education. Based on the evaluations of raters, the interview form was deemed to have reasonable validity. After this step, interviews were held with the identified students.

The interviews were conducted during the fall semester of the 2015-2016 academic year outside the school hours and in the school library and took 150 minutes. In order to encourage active participation and to ensure the privacy of the study, interviewers were guaranteed that the participants' personal information would be kept confidential. The participants were asked to share their own viewpoints or experiences based on trust and sincerity without any worried. In this way, data gathered during the interview process are provided to reflect the real opinions of the participants. Some educational gifts were presented to the participants as a way to increase the likelihood of voluntary recruitment due to their participation in the study. After this step, the participants were asked questions that set the sub-questions of the study and sufficient time was given for their responses. The average duration of the interviews ranged from 6 to 10 minutes. In all interviews, following principles were considered: (a) respect for the views, natural behavior, (b) providing communication at the time of interview, (c) ask similar questions, avoid avoidance, (d) avoidance of answers containing questions, (e) not interfering with the interview, (f) avoiding steering, (g) avoid multidimensional questioning, (h) asking questions that have two alternatives and (i) asking questions that can be easily understood (Fraenkel & Wallen, 1993).

Data obtained through the interviews were analyzed with the use of the content analysis technique. First, the collected voice recordings were listened to by the investigator one by one and then were transcribed in the computer. Interview transcripts were combined under certain codes according to similar semantic properties. The codes were re-read and grouped under certain categories by their content. The investigator delivered a copy of transcripts and audio recordings to a rater. The rater in the field of qualitative data coding and training was defined as a reliability encoder. The rater was informed about the purpose of studying and the research questions before the coding started. The investigator came together with the reliability coder to develop and explain an understanding of all interview records, codes and categories. Two coders discussed and practiced the codes they independently developed to make sure they understood how the codes were assigned to the data. In order to make the codes clearer on the basis of discussion and application, some changes made and more codes were added to define new and different subjects or ideas. The investigator and the rater divided by sum of number of disagreements and number of agreements multiplying by 100 calculate the inter-rater reliability (Miles & Huberman, 1994). After comparing the codes, the investigator and the rater reached 88% reliability. The relevant parts of the findings that were obtained to increase the inter-reliability of the study were given directly without being interpreted by the investigator. The results of each question in the interview form were presented in a descriptive way and the findings were explained by a direct quotation from the participants to support the data.

Findings

Because of unequal numbers of cell means (due to the use of intact classes as treatment units), the total sums of squares for all effects were adjusted using an SPSS regression approach (Tabachnick & Fidell, 1989). The distribution of CDT pre-and posttest results of the students with different reading skills in the experimental groups was given in Table 2.

Table 2. Distribution of the Participants of the SVT Test Scores

<i>Condition/Reading Comprehension</i>	Pretest Score		Posttest Score	
	Mean	SD	Mean	SD
Experimental (N=35)	6.66	1.94	9.66	2.21
Average-high readers*	9.10	1.87	12.59*	1.81
Low readers**	4.23	2.01	6.74**	2.45
Control (N=33)	6.39	2.23	88.15	1.76
Average-high readers#	8.60	1.99	10.75	.88
Low readers	4.18	2.48	5.56	2.63

* $p < .001$; ** $p < .05$; # Average and high reading ability level

A one-way analysis of covariance (ANCOVA) was performed on the students' SVT post-test scores with their SVT pre-test scores a covariate in order to investigate the effects of contextual-based vocabulary instructional intervention on students' reading comprehension performance. For the purpose of analysis, the pre-and post-test scores were represented by proportions of correct answers on the 16 comprehension questions in the SVT test. SVT post-test scores were used as the dependent variable for this study. The ANCOVA procedure allowed the investigator to identify the true impact of instructional treatment by controlling for differences between the experimental and control conditions prior-to-treatment. The results of the ANCOVA on the student' SVT post-test scores with their pre-test scores a covariate revealed a non-significant effect of the covariate pretest score $F(1, 64) = 0.21, p > .05$. However, a significant main effect was found for the treatment condition $F(1, 64) = 23.17, p < .001$, indicating that the contextual-based vocabulary instruction significantly affected students' reading comprehension the posttest score.

However, in the results of covariance analysis tests on posttest scores with a covariate pre-test scores, it was found that there was a significant main effect for the treatment conditions $F(1, 64) = 23.17, p < .001$, indicating that the contextual-based vocabulary instruction has a (statistically) significant effect on the experimental condition students' reading comprehension scores in the SVT post-test. The gain in the experimental condition measured by effect size was .51 compared to .37 in the control condition. The effect size determined for the experimental condition ($ES = .51$) suggested that the context-based vocabulary intervention improved reading comprehension scores moderately (Cohen, 1988) (Cohen, 1988; $ES = 0$ to .3 is small, .3 to .8 is moderate, .8 and above is large.). The result of the analysis of covariance confirmed that the use of the contextual-based vocabulary instruction procedure improved students' reading comprehension scores statistically significantly more for the experimental condition compared to the control condition, after adjusting for potential differences in reading comprehension at the onset of the study.

Table 3. Effect Sizes by the Condition and Reading Achievement Status

Scale/Status	Experimental Condition (N=35)			Control Condition (N=33)		
	Effect Size (η^2)	%95 CI		Effect Size (η^2)	%95 CI	
		Lower	Upper		Lower	Upper
Average-high readers *	.40	.21	.85	.34	.10	.54
Low readers	.21	.07	.43	-.12	-.42	.29

*Average and high reading ability level; CI=Confidence interval

The Boferroni multi-comparisons post-hoc test was used to examine the differences between the reading abilities in the two conditions. Boferroni multi-comparisons post-hoc test demonstrated that the average-high readers in the experimental condition showed the greatest gains in their reading comprehension skills at the posttest following the intervention, $F(1, 41) = 12.57, p < .001$. Follow-up, Boferroni multi-comparisons test results indicated that poor readers in the experimental condition showed small gains in their reading comprehension skills relative to the average-high readers in this condition. However, they nonetheless made remarkably more gains (statistically significant) than the students in the control condition as a result of the intervention $F(1, 41) = 1.43, p < .05$. This result showed that poor readers the experimental condition generally improved their own reading comprehension skills from pre- to post-treatment. The obtained effect sizes for the average-high readers and poor readers in the experimental condition were .40 vs. .21, respectively. When the students in the control condition received the wide reading strategy were examined separately, Boferroni multi-comparisons post-hoc test showed that the average-high readers were more likely to show gains (moderately effect) in their reading comprehension skills than the poor readers $F(1, 31) = 12.55, p < .05$ ($ES = .34, -.12$, see Table 3). Poor readers in the control condition did not show negligible changes in their reading comprehension skills the pre-to-post-treatment. The overall results of this study demonstrated that the use of explicit vocabulary instruction in contextual clues in understanding the meaning of an unfamiliar word by the experimental condition improved (statistically) significantly their reading comprehension scores from the pretest to posttest. However, it seemed as though the contextual analysis strategy for vocabulary instruction used in this study to improve reading comprehension skills was a fairly powerful procedure for all students in the experimental condition.

Descriptions of the Participants Related to the Vocabulary Instruction Intervention

One of the sub-objectives of this study was to described students' viewpoints and experiences about the context-based vocabulary intervention program. After the end of the instruction, it was invited voluntarily a number of students in the experimental condition for the interviews to reveal the implications of the instruction. The students were asked to reply following the questions: "What were the contributions of word-learning activities from reading text to your social studies learning outcomes or skills, so far?" and "What kind of changes did the activities make in your learning and reading skills?" In the interviews, data were analyzed with the use of the content analysis. The results showed that there was more than one main theme or sub-categories. The categories defined for the contextual vocabulary learning activities were merged with two main themes contextual vocabulary learning strategies ($f = 35$) and learning from the context as a way of improving reading comprehension ($f = 43$). Each student responses were coded and it was found that the students usually mentioned more than one category and the categories. Table 4 presents the categories and their repetition frequency.

A-Contextual vocabulary learning strategies: In the main theme of the contextual vocabulary learning strategies, it was found that the most commonly mentioned ($f = 14$, 40%) acquisition by the students was learning word meanings from context. Beyond this skill, twelve students (34.28%) characterized the activities as inferring word meanings from contextual information. In addition, five students (14.29%) mentioned that vocabulary learning activities provided to learn what constitutes the meaning of a word in a text (types of context clues). A smaller number of responses reported by the students about the activities helped coping the meanings of unknown words using textual clues ($f=3$, 8.57%) and developed incidentally word learning during reading ($f=1$, 2.85%). When the descriptions of the students were examined, the poor and average-high readers in the experimental condition shared that they learned how to use context clues. A poor reader shared as following:

I had previously encountered unknown concepts while reading. I can learn by identifying for the meaning of unknown words in the text thanks to the word lesson activities.

Another poor reader shared his own experience as following,

When I encounter an unknown word during reading, I immediately look at the words in the text in order to learn the meaning of this word,

One of the average-to high readers explained how she learned how to use contextual analysis:

Our teacher taught us how to derive the meanings of unknown words that provides understanding of a text. Therefore, I can better determine what constitutes the meaning of a word in a text.

A rather comprehensive response was given by another average-to high reader:

During the reading, the lesson activities provided to learn the meaning of the words and the encouraged me to learn new words incidentally. I also noticed that in order to learn an unknown word, it is necessary to have the meaning of a word in the text.

B- Learning from context as a way of improving reading comprehension: In contrast to contextual vocabulary learning strategies, the learning activities were explicitly supported the students understanding of what they read (both poor and average-to high readers). The descriptions of classroom activities indicated that the students had acquired a variety of improvements in their reading comprehension skills through the instructional activities. According to the findings, the students seemed exactly that the vocabulary learning activities had a significant main effect on their own reading comprehension skills.

A majority of the students ($f=13$, 34.28%) reported the instructional activities increased largely their volume of reading. Other frequently mentioned activities included developing a positive attitude toward the social studies reading ($f=10$, 23.21%) and better at reading comprehension and interpretation ($f=8$, 16.20%). Five of the students (11.6%) spontaneously mentioned the classroom activities enhanced their vocabulary. Four students (9.30%) described the activities as facilitating and supporting reading comprehension. The least mentioned category was the development of creative writing skills with story writing activity in order to evaluate the depth of use of new words ($f=2$, 4.65%). A poor reader commented as following,

I often had difficulty in comprehending a text because of unknown terms while reading. This situation made the text difficult to understand. However, now the contextual information in the text lead me to understand the text...

Another poor reader said,

I encountered many unknown words while reading. This situation made it difficult to find the main idea of the text. However, the vocabulary lessons solved this problem. Thank you for everything....

An average-high reader described the vocabulary lessons,

The change I see in myself is the development of reading skills, especially by reading informative social texts. I learned both new words and increased the amount of reading.

In this group, two students who expressed their opinions in a comprehensive way;

Well, I found out that learning from context was an effective strategy to understand a text. Activities taught me to learn the meaning of the words I did not know in a reading part by looking at the sentences. I also improved my reading comprehension ability.

At first, it was boring to read the texts, but later it was quite fun to learn the words from context, to write short stories about the target words. I love reading more now.

When the descriptions of the vocabulary lessons were examined, both the poor readers and the average-high readers shared that they achieved a number of improvements on their reading comprehension strategies and vocabulary learning skills through the vocabulary intervention program. But, in the responses students gave, it appeared that the word meaning derivation tasks evoked more diverse gains for reading comprehension than the contextual vocabulary learning strategies. Through the class activities, the students reported that they learned the needed strategies to infer word meanings from the context to cope with the unknown words they encountered while normal reading. Some of the students with average-high reading ability group mentioned that the process of the deviation word meanings was an effective strategy for reading comprehension. In addition, it was found that nearly all of poor readers reported they clearly developed their own comprehension skills and increased volume of reading by using strategy of deriving word meanings from context.

Responses of the students in all reading ability groups showed that the process of deriving word meanings from context independently increased their concentration to reading; hence, success developed their comprehension skills. In this respect, it is clear that teaching context clues to students within the context of the social studies instruction is complementary to their lack of reading comprehension read. Finally, the descriptions of instructional practices supported the quantitative results to determine the effect of context-based vocabulary instruction on reading comprehension ability. It was understood that the results demonstrated that the design of contextual analysis based on vocabulary instruction provided to complete deficiencies students' reading comprehension to increase their reading volume in the experimental condition.

Table 4. Distributions of the Students' Views Regarding the Vocabulary Learning Activities

Contextual Vocabulary Learning Strategies			Learning the Context of as a Development way Reading Comprehension		
Category	Numbers of Responses	Pupils (%)	Category	Numbers of Responses	Pupils (%)
Learning words meanings from context	14	40	Increase in volume of reading through expository texts	15	34.8
Deriving word meanings through context clues	12	34.28	Developed positive attitudes towards social studies reading	10	23.2
Learning what constitutes the meaning of a word in a text (types of context clues)	5	14.29	Better at comprehending and inferring reading	7	16.2
Using textual clues to cope with the meanings of unknown words	3	8.57	Enhancing vocabulary knowledge	5	11.6
Learning new words from contextual information incidentally	1	2.85	Facilitating reading comprehension	4	9.30
			Developing creative writing skills through stories	2	4.65
Total Responses	35		Total Responses	43	

The response of each student was coded and all students ($f = 15$) generally emphasized more than one category.

Discussion

The results demonstrated that the students in the experimental condition received the contextual-based vocabulary instruction showed greater gains in their reading comprehension performance as compared to the control condition received wide reading program. It was found that the contextual vocabulary lessons statistically significantly improved the experimental condition students' reading comprehension skills from the pre-test to the post-test. This finding suggested that teaching students the skill of contextual analysis to decipher word meanings supported their reading comprehension (Fukkink & de Glopper, 1998).

Comparison to the experimental condition students, the post-test results indicated that the students in the control condition showed small and moderate improvements in their reading comprehension scores. Findings from the posttest measures showed that reading activities through wide reading in the control condition contributed to the students' reading comprehension skills. The findings pointed out that quantity of students' reading significantly contributed to understand of what they read in the post-treatment measures of reading comprehension. Supporting this finding, Hedrick and Cunningham (2002) concluded that wide reading was an important source for listening comprehension of text for third-grade to fifth-grade students. Cunningham and Stanovich (1998) found that students improved overall reading skills and reading comprehension at the end of a treatment intervention included wide reading. In a recent study, Chen, Chen, Chen and Wey (2013) has conducted a study using wide reading using *e*-books was found that increasing the amount of reading that students significantly increased their volume of reading. Other research has demonstrated that a reading instruction program based on wide reading showed convincing results on the development of reading measures (Nathan & Stanovich, 1991; Pikulski & Chard, 2005; Wexler et al., 2010).

Fundamentally, increase the amount of students reading seems to be a logical and useful approach to improving the reading comprehension. Reading skills researchers have stated that wide reading was precipitated by a certain amount of reading skills. Despite convincing results wide reading directly contributes to vocabulary growth and reading comprehension Nagy and colleagues (1987) note that wide reading by itself promotes increasing students' volume of reading, but not often a reliable method to improve reading comprehension of children that desire to be independent good readers. However, many poor readers or struggle readers encounter a variety of words while reading, so they have some problems or gaps in the unlocking the meaning of unknown words or solving their complexity (Kuhn & Stahl, 1998; Stanovich, 1986), and hence it affects their motivation, reading fluency and the understanding of what they read. Therefore, students need a set of specific reading strategies that allow to access text and provide conceptual knowledge during reading (Rasinski, 2012). However, even a small development of the ability to infer the meanings of unknown word would result in a sizable number of new words learned for reading achievement (Fukkink & de Glopper, 1998; Graves, 2008). In this respect, context contextual factors in the teaching of a set specific words enable students to focus on rich contextual information that focus the meanings of unknown words during reading (Antonacci & O'Callaghan, 2011). But, this vocabulary program must be including ability to use context clues to decipher the meanings of unknown words that encounter during normal reading to understand of words of text (Ford-Connors & Paratore, 2015; US National Assessment of Educational Progress [NAEP], 2013).

Previous studies have indicated that the condition who was taught with the meanings of words through contextual analysis instruction showed significant improvements in the measurement of reading comprehension than untrained (Dole, Sloan, & Trathen, 1995; Goerss, Beck & McKeown, 1994; Rinaldi et al., 1997). A meta-analysis done in the 1980s by Stahl and Fairbanks (1986) found convincing results that contextual vocabulary instruction had immediate benefit and was tied to improved reading comprehension. Combined findings from these studies confirmed that explicit vocabulary instruction related to how to use context in understanding the meaning of the unfamiliar words helped readers of all reading ability levels during reading.

Given the reading needs of students, the ability to learn word meanings through contextual clues is highly necessary for general education classes, especially for the academic success of poor readers (Antonacci & O'Callaghan, 2011; Daalen-Kapteijns, Schouten-van, Parreren, & de Glopper, 1993). Because poor readers have less metacognitive awareness compared to good readers (Alexander & Jetton, 2000). Poor readers lack the strategies to monitor, control, identify reading problems, recognize mistakes and cope with them while reading (Roberts, Torgesen, Boardman, & Scammacca, 2008; US Department of Education, 2001). Poor readers are also not sufficiently skilled to use contextual information to cope with the clues of the meanings of unknown words and to derive logical conclusions from a text (Stanovich, 1986). As these readers begin to read with a lower vocabulary knowledge, they encounter more unknown words during reading. Because of this, poor readers cannot automatically infer the meanings of words from context because they are overcome (cannot recognize the word), which makes it difficult to understand of what they read (Kuhn & Stalh, 1998; Rasinski, 2012). From this point of view, researchers have suggested teaching teachers alternatively the ability to infer word meanings for students to overcome reading difficulties in general education classes and to encourage learners to become proficient readers (Armbruster, Lehr, & Osborn, 2003; Blachowicz & Fisher, 2011; Stahl, 1999). Indeed, with contextual approaches, it is suggested that the meanings of certain words are an effective predictor with the understanding and vocabulary of teaching (Baumann, Kame'enui, & Ash, 2003; Cain, Oakhill, & Lemmon, 2004; Nagy, 2005).

In light of the literature review, it is conceivable that the development of students' comprehension skills in the experimental condition was a result of learning strategies (see Table 4) in context to cope with the relatively unknown concepts they encounter during reading (Daalen-Kapteijns et al., 1993; Graves, 2008). The qualitative findings of this study showed that the students in the experimental condition were able to learn cognitive strategies for learning the meaning of words through the vocabulary intervention and to use them during reading. The participants in this study reported that the contextual analysis training encouraged them to learn new words and provided a great depth of their own reading volumes and vocabulary knowledge. The students also shared that they considered the process of word acquisition in context as a general understanding strategy of learning words meanings from contexts (Palinscar & Brown, 1984). Previous studies have conducted on the teaching of word meanings in the literature have shown similar findings with the result of this study. For instance, in a study conducted by Goerss and colleagues (1994), students reported that vocabulary words were not necessary for dictionary definitions, but that they learned what information was needed about a word in context. As a result, Goerss et al. observed that the students developed content learning from texts. All this indicated that the skill of inferring word meanings from context was a productive process to increase the understanding of texts (Antonacci & O'Callaghan, 2011; Daalen-Kapteijns et al., 1993).

When the results for the students at different reading levels were examined, it was found that the students in the experimental condition were to show small and medium gains in their reading comprehension scores relative to the students in the control condition. The average-high readers in the experimental condition showed the greatest improvement in the reading comprehension skills at the end of the intervention. However, poor readers continued to show (statistically significant) small improvements in their reading comprehension scores in the post-test. The obtained effect sizes for the average-high readers and poor readers in the experimental condition were .40 vs. .21, respectively. Normally, effects size above .33 were considered as significant in the context-based vocabulary instruction intervention (Cohen, 1988). According to Cohen (1988), this effect size indicated that contextual-based vocabulary instruction intervention was moderately effective in improving average-high readers' reading comprehension scores for the experimental condition. The Bonferroni multiple comparison Post-Hoc test results revealed that average-good readers in the experimental condition showed further improvements in the reading comprehension performance in compared to the poor readers. The poor readers nonetheless did make remarkable (statistically significant) more improvement in their reading comprehension skills than the students in the control condition as a result of the contextual vocabulary instructional intervention.

The results of this study on students at differentiated reading ability levels showed significant differences findings of previous studies on context-based vocabulary instruction. These studies have shown that a variety of reading ability level may affect the effects of vocabulary instruction intervention. For example, Nelson and Stage (2007) found that poor readers tended to show greater gains than those with average to high readers. Tomesen and Aarnoutse (1998) found that fourth-grade students with low reading ability were more likely to benefit from a direct vocabulary instruction program compared to students with average and high reading achievement. In these studies, although it is unclear why the students with low reading ability benefited more from in vocabulary teaching, but this simply suggests the possibility that a function of the floor effect of the vocabulary instructional intervention (modeling more time using context clues to gain strategy and guidance in generating new meaning) (Nelson & Stage, 2007). When students' descriptions on vocabulary lessons were examined, it was found that the quantitative results of the vocabulary instruction intervention were consistent with the students' viewpoints and descriptions. In the experimental condition, when the average-high readers were asked about their views on vocabulary activities, they reported that the context clues learning contributed a lot to their comprehension skills in social studies because they interpreted expository texts better by understanding of what they read. The majority of poor readers shared the fact that vocabulary activities positively affected their reading comprehension performance. The qualitative of this study supported quantitative findings to investigate the effect of context-based vocabulary instruction on the students' reading comprehension achievement. In sum, given the findings of this study as a whole, the results confirmed that poor readers used the cognitive strategies to cope with unknown words meanings while reading so that they could learn the meanings of words through explicit instruction (Chang & Ku, 2014; Kuhn & Stalh, 1998; Nash & Snowling, 2006; Tomesen & Aarnoutse, 1998).

Limitations

This study was designed to be effective in supporting context-based vocabulary instruction to understand participants' expository social studies texts, taking into account their initial reading comprehension skills. However, as in all studies, there were some limitations in this study that should be addressed in future research. The participants were selected from one geographic location and from the seventh-grade of a school with middle-class students. The findings may not reflect the overall position of all seventh-grade students. Future research should replicate the findings from this study in various contents and with different samples. Second, the sentence verification technique test was used to study the effects of context-based vocabulary training on the participants' reading comprehension. If measures (e.g., multiple choice reading comprehension tests that measure recall and general comprehension, text clues recalling, reading prosody, etc.) were used that were more closely related to the target words and vocabulary learning activities in the training practice, whether the students who received contextual analysis instruction showed significant improvements in their reading comprehension performance skills would have been investigated (Rasinski, 2012). Future research should attempt to strengthen the findings of this study by combining a set of reading measures (Akyol, 2009). Finally, this study seems to be a unique study focusing on both contextual analysis and students different reading ability levels in social studies classrooms. There is a need for extensive research to determine the types of contextual vocabulary instruction that work with a wide variety of students and their effectiveness on reading skills. This is important because research and discussions on academic vocabulary instruction focuses largely on other content-areas, such as science or social studies.

Conclusions and Implications

Despite the limitations described above, the quantitative and qualitative findings of this study showed that context-based vocabulary learning activities helped students infer word meanings and learn new words using contextual information. The results of the study confirmed that the experimental condition received the contextual based vocabulary instruction outperformed better in in the reading comprehension measure to increase the understanding and learning of the social studies content. In addition, the poor readers in the experimental condition showed more improvement in reading comprehension skills than control condition students at the end of contextual analysis training. Qualitative findings showed that poor readers in the experimental condition were able to learn and use context clues to develop their comprehension skills (Baumann, Kame'enui, & Ash, 2003; Tomesen & Aarnoutse, 1998). This finding suggests that poor readers were able to learn what they are being taught, but they also benefited from training through a set of specific cognitive strategies.

Considering the significant improvement in the reading comprehension scores, contextual analysis training was identified as an effective vocabulary teaching strategy to improve participants' comprehension skills for this study (Graves & Slater, 2004). As mentioned earlier, reading in social studies requires students to use higher-level reading skills as it includes various text types, text structures and technical terms (Massey & Heafner, 2004). In present-classes, however, many students have problems in the understanding of they read the meaning of the unknown words they encounter while learning the expository texts and complex contents. Therefore, the results of this study confirmed that teaching students the learning of the contextual analysis strategy served to better understand of what they read. Accordingly, contextual word derivation activities may allow readers to combine their vocabulary and comprehension skills and help them understand the expository social studies texts and content more.

Context analysis seems to be a promising and useful approach for poor and average-high readers to teaching word meanings even for a short time in average readers. In this sense, it is necessary to take this issue further into the content-area class. Accordingly, the following suggestions can be made based on the results of this study. In their class, the best advice for teachers to improve their reading skills or to help them overcome reading comprehension problems is the choice of appropriate expository texts that contain certain words that can be learned from context. However, for the development of comprehension skills, teachers should model more time and appropriate opportunities, until students reach the level of independent performance in order to acquire the ability of inferring word meanings from context. In sum, we believe that the growth in vocabulary and the success in the reading comprehension result in time to wide reading, but teaching students how to use contextual analysis strategy can encourage better in reading comprehension particular in content-areas. As a matter of fact, the review of literature and all the results of this study clearly demonstrated that the teaching of specific words meanings through contextual analysis can be an effective way to support and improve readers' reading comprehension (Baumann, Kame'enui, & Ash, 2003).

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