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A Comparison of Inferencing and Meaning-guessing of New Lexicon in Context versus Non-context Vocabulary Presentation

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ABSTRACT

In a quasi-experimental study, the researcher used two approaches to vocabulary instruction with 34 Level III College of Languages and Translation students, enrolled in King Khalid University, KSA. The purpose of the study was to explore the effects of each approach. One strategy emphasized direct teaching of the individual meanings for a set of unfamiliar words. The second strategy emphasized teaching students to derive word meaning from sentence context, rather than teaching specific meanings. Pre-test/post-test comparisons indicate that both approaches were effective in helping students acquire, retain and further recall the lexical items instructed. The findings were discussed in relation to prior research, and implications as well as suggestions for vocabulary building material development were given at the end of the paper.

INTRODUCTION AND BACKGROUND

Vocabulary acquisition, important as it is, has received scant attention in the international research agenda (Lawson & Hogben, 1996; Nation, 1993, 2001). However, research done in the skill areas asserts that effective communication is a function of adequate and appropriate vocabulary acquisition rather than the learning of grammar rules (Vermeer, 1992; Coady, 1993; Rott, 1999). Further, much of this research assigns successful communication in ESL/EFL to inferencing and meaning-guessing depending on the acquisition of the most frequently used vocabulary items in the English language; this vocabulary range has been estimated to be between 2000 to 3000 words (Bensoussan, 1979, 1983; Nation, 1993). In the English Department of the College of Languages and Translation at King Khalid University, students find it difficult to globally understand spoken or written discourse, most probably because they lack the ability to guess word meaning from context. Preliminary extrapolation implies that those students over-rely on word lists including the English lexicon on one column and Arabic equivalents on the other. Classroom observations also suggest that those students were encouraged to learn vocabulary using these English-Arabic pairs in isolation since their early learning of the language which may have negatively affected their inferencing abilities.

Inferencing has been defined as the connections that people establish when they try to interpret texts (Brown & Yule, 1983). It is appropriately related to global understanding of longer pieces of discourse in which context may exercise an influence in enabling comprehension. Therefore, inferencing and meaning-guessing are the product of

contextualization. As such, EFL learners can possibly derive the meaning of unknown words using the context in which they appear, that is, a sentence in which the word to be learned appears (Clarke & Nation, 1980; Chern, 1993; Huckin & Bloch, 1993; Rott, 1999). Hence, training on contextualized meaning-guessing can help EFL students to do without English-Arabic vocabulary pairs which are inefficient in learning the vocabulary of the English language.

However, context can unfortunately be unhelpful in getting learners through the right meaning of especially new lexicon. This creates some kind of ambivalence in the research findings earlier cited, or at best, it denotes a gap in this research, thus guaranteeing further research into the value of contextual versus non-contextual vocabulary presentation. In this regard, Deighton (1959) notes that “while context always determines the meaning of a word, it does not necessarily reveal that meaning” (p. 2). Prior research indicates that vague or ambiguous contexts are not conducive to accurate inferencing of the meanings of new lexicon, not only in the foreign language, but in first languages as well (Schatz & Baldwin, 1986; Stein, 1993) as “the text does not supply sufficient support for the specific meaning; in fact, it lacks constraints to the extent that a wide range of fillers might be supplied and still make sense” (Dubin & Olshtain, 1993, p. 191). To this end, there may be apparent confusion in research findings or practice insights which strongly advocate contextual presentation of new lexicon. Again, as earlier noted, there needs to be further research into the issue of whether context can induce effective learning and long-term retention of new words. (For a review of pertinent research, see Nation, 1982.)

The problem that context is not adequate for presenting new lexicon for EFL learners as equally for L1 learners has already been explored. For example, some researchers explain the problem in terms of paucity of contextual clues or insufficiency of learners’ proficiency levels (Stein, 1993; Kroll & Curley, 1988). Other factors include, but are not restricted to, age of learners, their transitive abilities, memory load and other lexical factors (Lynn & Posnansky, 1977; Paribakht & Wesche, 1999; Cain, Lemmon, & Oakhill, 2004).

Furthermore, Haastrup (1991) suggests that language learners possibly use three sources of inferencing: *contextual*, *intralingual*, and *interlingual* cues. Contextual clues refer to one or two words from the immediate co-text of new lexicon, the entire sentence context containing new lexical items, or a specific aspect of co-text beyond the sentence in which the new word may help in global understanding of the whole text. Intralingual clues have to do with the morpho-syntactical and phonological features of the new word in which the learner utilizes his general information about phonology, orthography, morphology, word class and collocations to guess the meaning. Interlingual prompts relate to a language other than the second language, e.g., the learners’ first language. Interlingual prompts are used by learners when they rely on their knowledge of their mother tongues or another language they have acquired to extrapolate or guess the meaning of a word in their second language.

To date, the previous research has been quite ambivalent as to the advantages of inferencing and meaning guessing, especially when it comes to long-term retention and recall. For instance, some researchers (Nation, 1982; Lynn & Posnansky, 1977; Jenkins, Matlock, & Slocum, 1989) found that learning new words in context is not significantly more advantageous over any other technique of vocabulary presentation which advocate the presentation of new vocabulary in isolation or in context-free word lists. According to Carter (1998), “it is difficult to draw precise lines to suggest when a move from key-word techniques, or translation in pairs, or from using a monolingual or bilingual dictionary to context-based inferential strategies, is best instituted,” thereby indicating that there are “no clearly marked stages of transition” in the learning process, and that therefore “a mixture of approaches should be adopted” (p. 213).

Several paradigms have been proposed to explain inferencing and meaning guessing (Garnham, 1992). Prominent amongst these are the minimalist hypothesis proposed by McKoon and Ratcliff (1992) and the constructivist theory proposed by Graesser, Singer and Trabasso (1994). McKoon and Ratcliff (1992) suggest that L2 learners make minimal use of meaning guessing, thus making only a few inferences during comprehension as they rely less on their background knowledge and schemata while hearing or reading a text. Furthermore, this hypothesis presumes that inferencing only occurs locally when there are enough prompts at the most immediate level of sentence construction; that is, inferences are generated when there are contextual cues available within the adjacent clause or sentence in which the new word occurs.

The constructivist hypothesis, however, presumes that L2 learners consistently make inferences and rely mostly on word guessing both locally and globally (Graesser, Singer, & Trabasso, 1994). According to this model, schemata are in use while a learner is generating inferences for unknown words. Further, according to Nassaji (2004), many a researcher asserts that there must be an adequate range of vocabulary deeply constructed in one's background knowledge (as schemata) in order for L2 learners to make heavy use of inferencing strategies to guess the meanings of new lexicon in context. In addition, training learners to employ metacognitive strategies has been proven as being of paramount importance in helping learners to make use of inferencing in context (Prince, 1996).

As could be seen from this brief review of available literature, scanty as it appears, there is ambivalence as to the desirability of presenting new lexicon in context, despite the fact that vocabulary presented in context is widely believed by practitioners and some researchers to be of highest use, especially in helping acquisition rather than learning to occur naturally.

Equivocal as these findings are to evidence the effectiveness of contextualization for new word acquisition, more experimental research has been done, indicating that instruction in specific types of contextual clues and training in metacognitive strategy use can enhance vocabulary acquisition (Buikema & Graves, 1993; Jenkins, Matlock, & Slocum, 1989). For example, a meta-analysis study by Fukkink and de Gloppe (1998) revealed a mean effect size of 0.43 for contextual analysis interventions, which indicates the efficacy of contextualized word instruction. This means that contextual presentation of new vocabulary is important, but it requires further training and more supportive techniques like merging translation pairs with contextualized vocabulary presentation or metacognitive training, learning vocabulary through reading (Lublinter & Smetana, 2005). However, critics of this prior research on the value of context have expressed concerns about the quantity and quality of some of this research and the external validity of prior studies (Baumann, Kame'enui, & Ash, 2003; Kuhn & Stahl, 1998). This reasonably warrants further research into the effects of context, inferencing and meaning-guessing on enabling reading comprehension and global understanding of written discourse.

PROBLEM AND RESEARCH QUESTIONS

Prior research was unable to explain why L2 learners sometimes fail in utilizing effective inferencing and meaning guessing of unknown words presented in context. Therefore, this study proposes to address the following research question: Which is more effective for the presentation of vocabulary for Arabic-speaking EFL learners: vocabulary presentation in context or in isolation?

Research Method

Method

This study utilizes a quasi-experimental research method. The data of the study were gathered during a classroom experiment on vocabulary acquisition investigating the significance of whether non-context vocabulary presentation versus contextualized word instruction led to vocabulary learning, retention, and recall.

Sample

Participants in this study were 34 Level-3 students in the English Department, College of Languages and Translation at King Khalid University, studying Vocabulary Building II as part of their Level-3 syllabus in the academic year 2006/2007. All participants in the study were volunteers, and written informed consents had been signed by them before they were assigned to the research groups.

Participants were randomly assigned to two treatments: 17 students were assigned to the non-context word meanings condition, and the other 17 students were assigned to the context word meaning condition. Overall, the mean scores of the entire sample on the prior Vocabulary I course were at the 82nd percentile in Vocabulary Building I (SD = 14.7) and the 81st percentile in Reading Comprehension I (SD = 12.5). An analysis of variance found no significant differences between subjects for achievement test scores in either Vocabulary Building I, $F(5, 107) = 1.34, p > .10$, or Reading Comprehension I, $F(5, 107) = 1.48, p > .10$. In this way, the subjects are being equated on achievement in vocabulary-related courses.

Materials

The researcher selected 75 words from the Vocabulary II course assigned for study in the 2007 course syllabus of the College of Languages and Translation at King Khalid University. The list of words could be defined in short word definitions or by synonymy, but they were specifically selected because they presented new vocabulary to the students. Piloting this list on another class of similar class and proficiency level studying the same course, 15 words were discarded as known by most students. These words varied between nouns, verbs, adjectives, and adverbs.

Instructional Methods

Instructional modules were developed for the two approaches to vocabulary presentation: non-context vocabulary teaching and context vocabulary teaching.

i. The Non-context Vocabulary Mode

The word list, now 60 in number, was randomly grouped into 12 sets of 5 words each. For each set, a transparency that presented the 5 words, their definitions, synonyms, Arabic equivalents, and two sentences containing each word was developed. The researcher/instructor presented each word and its definition or Arabic equivalent to the class, while students were listening, and in some cases, they were repeating after the instructor. Next, the researcher/instructor covered the definitions and asked the students to read each word and to supply the definition themselves. Then, the definitions were shown but the words were hidden, and students were asked to read each definition aloud and give the corresponding

target word. Finally, students were asked to read each sentence containing a target word, and then reread the sentence substituting a definition or synonym for the target word. This procedure was followed throughout the non-context vocabulary mode treatment with the rest of the words in all 12 sets in three sessions, each amounting to 50 minutes.

ii. The Context Vocabulary Mode

In this treatment, students were trained on a metacognitive strategy of inferencing for guessing the meanings of unfamiliar lexical items. This metacognitive strategy, created by Jenkins, et al. (1989) known as SCANR, emphasized the use of contextual clues to derive the meanings of the new words, relying on global comprehension of the text rather than intralingual sources of inferencing (i.e., manipulation of morphology, phonology or syntax).

The SCANR strategy devised by Jenkins, et al. (1989, p. 221) moves in the following procession:

Substitute	a word or expression for the unknown word, e.g., pride or arrogance could be substituted for hubris
Check	the context for clues that support your idea, e.g., prompts in the proximate text that shows the meaning, as in this excerpt: <i>Hubris was considered a crime in ancient times not because it was not only proof of excessive pride, but also resulted in violent acts by or to those involved.</i>
Ask	if substitution fits all context clues. The teacher may provide one more sentence to check whether the new item fits meaningfully or not: e.g., <i>Hubris is a disease of the aristocrats.</i>
Need	a new idea? More example sentences could be elicited at this stage.
Revise	your idea to fit the context. Teacher, colleagues, or a dictionary could be consulted at this stage.

The researcher/instructor provided each new word in a sentence on the board, reading it aloud, and soliciting its meaning from the students who were encouraged to use the SCANR strategy. In other words, they were encouraged to substitute a synonym or provide a definition for the unfamiliar word in the sentence and to check whether it meshes with the context in which the original word fits. The instructor provided another sentence containing the same target word, and asked the students to use the SCANR strategy, while requesting that they check whether their proposed meaning fits both sentences and to revise their guesses where needed. In the end, the researcher told the group whether anyone had inferred the correct meaning. If no one had, the researcher gave the definition, explained the meaning as used in the two sample sentences, and proceeded to the next target word and sentence. This module practiced the 60 words in this fashion all throughout the three sessions, each extending to 50 minutes.

Measures

Pre-assessment

Two paper-and-pencil unannounced pre-tests were administered during one class session. Students were informed that these tests would not be used as part of their course grade, but they were asked to complete them as carefully as possible, as if they were completing them for a course grade. (They were not informed of the nature of the study until

after all elements had been administered and collected, so as not to affect the results inappropriately.)

The first test was the words-in-isolation test which gave individual words for which students wrote synonyms or definitions. The other test was the words-in-context test which presented each word in a sentence, for which students supplied a synonym or definition. To judge whether participants could recognize the target words, the researcher used sentences with the least prompts indicating the meanings of the target words (e.g., ‘The so called Age of the Dinosaurs spanned not centuries but millions of years.’). Both treatments included the same 20 words (the third of the total vocabulary presented in the training sessions) in both treatments. The words-in-isolation test was given first, followed by the words-in-context test.

Post-assessment

The words-in-isolation post-test and words-in-context post-test targeted the same vocabulary covered in both treatments, yet couched in new clauses and sentences and a multiple choice format to reverse the effects of familiarity and monotony. The multiple-choice format for the words-in-isolation post-test required participants to select a word’s correct meaning from four distracters, all of which were semantically and syntactically similar to the target word, preceded by an example sentence as in the following example:

He enjoys a distinctive prowess as a public speaker.

prowess

- a. the whole range or sequence
- b. power
- c. strength, skill, and intrepidity in battle
- d. heedlessness

The multiple-choice format for the words-in-context post-test required subjects to select a word’s correct meaning from four distracters, all of which were semantically and syntactically similar to the target word, with all tested words appearing in a prior story text contextualizing each word. For example, the following excerpt and test item were on the test:

They chuckled at the child’s efforts to walk. Some grinned, with their teeth appearing as if they were watching a comic film.

Chuckle

- a. to laugh softly, quietly, amusedly
- b. to cry
- c. to look sad
- d. to seem happy

The post-tests were administered approximately 4 weeks after the end of the treatments. Testing was carried out in 30-minute sessions on one day for both treatment groups.

The scoring (on both the non-context and the context tests) was conducted in the following manner: each correct answer received 1 point. Answers missing minor morphological elements were counted as correct because identification of the word’s lexical stem indicated that they knew the basic meaning of the word. When more than one answer was supplied, each answer was scored as a fraction of 1 point. For instance, if two answers

were supplied, one right and one wrong, that word was scored as +.5.; a decision was made not to give partial credit for approximations because after the first two pre-tests were administered, the students could have found out the correct meanings of the words when they read the story preceding the multiple choice questions. To determine the accuracy of inferencing of unknown words supplied in context, it was important to first discover which words students encountered on the non-context test, but could not decipher, and then compare their words-in-context performance with that obtained in the non-context test.

FINDINGS AND DISCUSSION

Pre-tests revealed that the participants in this experiment were unfamiliar with the 20 words that appeared in both modes of instruction and on the post-tests. In other words, calculated as percentages, all pre-test and post-test scores ranged from what was considered failing at the college where the study was conducted (0%-59% correct) to what was considered passing (60%-100% correct). The mean of all pre-test scores ranged from 21%-39% correct, and the mean of all post-test scores ranged from 83%-92% correct (see Table 1).

Table 1. Average Percent Correct Scores (N = 17)

Treatment Group	Mean Scores	SD	Range
Non-context Condition (Pre-testing)	27%	0.17	0 – 80%
Context Condition (Pre-testing)	38%	0.25	0 – 80%
Non-context Condition (Post-testing)	72%	0.15	40 – 100%
Context Condition (Post-testing)	92%	0.16	60-100%

A paired samples t-test of percent correct vocabulary scores that compared each vocabulary pre-test with its corresponding post-test showed that both modes of vocabulary instruction were effective in teaching participants new words across both treatments. Students knew significantly more words on all post-tests than they knew on all pre-tests (all p s < .001) (see Table 2 below).

Table 2. Differences Between Pre-test and Post-test Percent Correct Scores (N =17)

Pair	Mean	SD	t	p
Non-context Condition (Pre-testing)	-49%	.23	-14.42	.000
Context Condition (Post-testing)	-45%	.25	-12.34	.000
Non-context Condition (Pre-testing)	-65%	.19	-23.19	.000
Context Condition (Post-testing)	-62%	.29	-21.26	.000

It appears from the above findings that both instructional modalities of non-contextualized word presentation and contextualized word presentation could significantly improve students' vocabulary building, but only when both modalities are used complementarily.

The individual word training out of context and the contextualized word training using the metacognitive SCANR strategy both operate in different ways: the former builds on the mental lexicon of the students by adding to his repertoire more new words, whereas the latter enhances a student's ability to learn new words independently. These instructional strategies do not conflict, and in fact would seem to be complementary to each other. As well,

the first instructional mode has been manipulated by the students in the previous course, Vocabulary Building I, more extensively than any other schema-building or metacognitive strategy.

Furthermore, despite the fact that effective inferencing and meaning-guessing could help learners generate more inferences than individual out of context word presentation methods, inferencing and meaning guessing rely heavily on both students' extant lexical knowledge, effective recall and memory usage, and effectively prompted schema-stirring. This observation compatibly fits with prior research findings in this vein (e.g., Nation, 1982; Lynn & Posnansky, 1977; Jenkins, Matlock, & Slocum, 1989; Nassaji, 2004).

Both modes of instruction, different as they may be, relied on a constructivist paradigm (Graesser, Singer, & Trabasso, 1994), yet with relative variation. In the non-context word presentation, new lexicon was still presented in sentences that showed how these words were used, and so were the non-context test items. The tested words were presented in sentences with the least minimal contextual clues, but this may have helped in inferencing meanings of the new items. Conversely, the contextualized vocabulary presentation mode relied heavily on the constructivist model, and helped stir background vocabulary knowledge at both the local and global comprehension of new lexicon, which assisted with a more effective generation of inferences. In this fashion, integrating both techniques may be more effective than relying exclusively on either strategy, a finding more commensurate with some previous research (e.g., Jenkins, 1989).

This research also shows that, for words to be effectively learned, students must have several opportunities to meet and respond to such words. Much of the prior research has not satisfactorily determined the optimal number of such opportunities (Nagy & Scott, 2000), but, according to Beck and McKeown (1991), it is thought that significant word learning can take place with four meaningful opportunities to meet a word. Therefore, the employment of the SCANR strategy provided repetitive opportunities to encounter the new lexical items several times in several supporting contexts which may have helped in better vocabulary acquisition in this experiment.

The point from this research and related prior research indicated that not all direct instruction is effective in vocabulary acquisition. Indeed, several studies show that much instruction in vocabulary is cursory, and would be expected to result in little learning if it employs one technique or strategy for vocabulary presentation. Therefore, scholars find that the teaching of morphology, context, and dictionary skills are critical to strategic learning of vocabulary (Baumann, Kame'enui, & Ash, 2003), a finding also emphasized in this study.

IMPLICATIONS AND RECOMMENDATIONS

There should be an integration of both approaches now that in most real-life situations, learners have to deal with unknown words in their natural contexts. Direct instruction of vocabulary does have demonstrable effects on students' vocabulary learning and comprehension. Therefore, it is strongly recommended to present new vocabulary in context using example sentences, excerpts from readings which contain enough clues, merging several presentational techniques, and even context-free translation pairs could be used but only as a supportive technique, not as the only vocabulary presentation technique.

As pointed out earlier, lexical inferencing is of paramount significance for both comprehension and vocabulary learning. Therefore, textbook designers and material developers should stay away from providing glossaries appending textbooks of vocabulary building or reading comprehension, especially glosses accompanied by Arabic equivalents;

glossaries are oftentimes used to the detriment of developing inferencing and meaning guessing strategies as well as it jeopardizes students' home dictionary work.

In addition, material developers should provide learners with some exercises which pave the way for them to practice lexical inference, giving more space to contextualized vocabulary presentation, local and global comprehension tasks, and more drills with synonymy, antonyms, word puzzles, and other word games.

There are several factors that further need to be addressed by researchers in recognizing the most important influences of contextualizing new vocabulary to help effective vocabulary learning, given the fact that students may either actively resist it, believing the decontextualized vocabulary presentation condition to be superior (as in translation pairs, word lists with synonyms, antonyms, or definitions), or fail to elaborate the strategies that might make it possible.

CONCLUSIONS

If grammatical knowledge is the skeleton of language, then vocabulary is the flesh that fills in this skeleton and gives it life. However, it seems quite far-fetched to expect learners to know every single word or vocabulary item which appears in a text.

Providing learners with the meanings of all new words or encouraging extensive and expansive dictionary work may not sound appropriate or adequate enough to stimulate vocabulary acquisition. The reason is that only 'vocabulary lists' or 'word-translation pairs' approaches preclude students from searching for and applying suitable strategies such as inferencing and meaning-guessing of words in their natural context or doing word analysis in unfolding the meaning of unknown words.

Therefore, most EFL vocabulary learning guides and instructional methodologies advocate a "teach vocabulary in context" approach, suggesting that EFL vocabulary should never be taught in isolation as in word lists with their Arabic equivalents. Most scholars assume that vocabulary lists accompanied by translated meanings or Arabic equivalents create less opportunity for EFL learners to achieve autonomy in second language learning or could lead to confusion in getting the right contextual meaning, especially with polynoms, homophones, and homographs (McCarthy, 1990; Prince, 1996).

Furthermore, the words taught in Vocabulary Building courses should be designed to cover a range of subject areas. Thus, students are supported in knowledge of words that appear frequently in their reading. This support makes them more comfortable as readers and, hence, encourages them to read more. The learning of even more new words is facilitated as students read more widely and for more global comprehension of written discourse. In addition, Levels Three through Five teach important ways of manipulating and relating word relationships, and some test preparation; Levels Six through Eight should teach systematic reasoning through analogies and test preparation. This requires further deployment of cognitive and metacognitive strategies to help students master words independently.

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