

# Incidental L2 Vocabulary Acquisition through Reading Comprehension: Issues, Agreements and Controversies

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## Abstract

It is argued that a large portion of second language (L2) vocabulary knowledge is acquired *incidentally* in the sense that words are acquired as a natural by-product of children/learners performing everyday linguistics activities and tasks. However, the question of whether the majority of L2 words are acquired incidentally is a simplistic one as there is a number of issues that center around the process of incidental L2 vocabulary acquisition and for which agreed-upon answers cannot be cited. It is the purpose of the present paper to present an overview of the research on incidental L2 vocabulary acquisition, with a particular focus on issues related to incidental L2 vocabulary acquisition which have attracted the most attention in the field of L2 vocabulary research. Wherever possible, the implications of the research on incidental vocabulary acquisition for L2 pedagogy are discussed.

**Keywords:** vocabulary knowledge, Incidental vocabulary acquisition, L2 vocabulary research, L2 pedagogy

## I. Introduction

One common belief among first language (L1) researchers is that most of words acquired by children during the process of first language acquisition are acquired incidentally in that words are learned when the child's attention is focused on an on-going task (e.g., talking to his/her parents or reading or listening to a story) rather than specific lexical items. Specifically, the most common task through which children expand their vocabulary knowledge is reading comprehension (Anderson et al., 1988; Nagy, 1988; Nagy & Herman, 1987). For instance, Anderson et al. (1988) claim that, during primary and secondary school years, when children acquire literacy knowledge, they usually read about one million words per year and therefore it would be probable that reading activities are a more important source of L1 vocabulary acquisition than other language skills, particularly the listening skill.

However, the same cannot be said with much certainty about vocabulary acquisition in the second language (L2). In fact, L2 researchers are not in the same boat with respect to whether more of L2 lexical knowledge is acquired incidentally and whether incidental vocabulary acquisition is more effective than intentional approaches to vocabulary teaching and learning. It seems that more research is required before we are able to reach firm conclusions about the topic.

In this review article, the current findings on issues in the realm of incidental L2 vocabulary acquisition that have attracted a lot of attention are discussed. Specific attention is given to the findings that have been controversial and new interpretations of some misinterpreted findings are presented. Then, a paradox in research on incidental L2 vocabulary acquisition is discussed which is then followed by some suggestions as to how to survive this research paradox. At the end it is necessary to mention that, since most studies on incidental vocabulary acquisition have investigated such type of learning through L2 reading, our discussion of incidental vocabulary acquisition in this paper mainly focuses on L2 reading comprehension.

## **II. Clarifying a Misconception about Incidental Learning**

Before going any further, one important point is in order which sometimes causes confusion among the readership of the research on incidental L2 vocabulary acquisition. This confusion arises from the fact that, in incidental L2 vocabulary acquisition, the teacher (or other second parties) does not direct the learner's attention to the target words (TWs). For instance, in Laufer (2006, p. 156), "participants were not told that the purpose of the experiment was vocabulary learning and that they would be tested on vocabulary". This has led some to believe that incidental vocabulary learning is handled by unconscious cognitive mechanisms.

However, it should be noted that it is the learner who makes the final decision as to what part of input should be cognitively processed and attended to, not the teacher. On the other hand, the elaboration of cognitive processing does not depend on learning types (intentional vs. incidental) and, thus, "careful attention can be paid to the properties of a certain word during intentional learning .... just as well as during incidental learning" (Hulstijn & Laufer, 2001, p. 542).

Further, as Schmidt (1990, 1993) contends, any aspect of a second language should be *consciously attended* or *noticed* by the learner if it is to be acquired and second language vocabulary is by no means an exception. Hulstijn and Laufer (2001), too, are aware of this misconception when they warn us "that incidental learning does not mean unattended learning" (p. 554).

## **III. Strategies and Knowledge Sources Employed by Language Learners**

When encountering an unknown word in an L2 text, the language learner can do one of two things. S/he can either ignore the unknown word (the so-called avoidance strategy), or s/he may try to infer its meaning, using linguistic and non-linguistic resources available in or outside the text. The question is what factor predicts whether the learner simply ignores the unknown word or tries to infer its meaning. According to Laufer and Hulstijn's (2001) involvement load hypothesis, the retention of incidentally-acquired L2 words is dependent, among other factors, upon the motivational variable of "need"; i.e., words that are crucial for comprehending an L2 text are more likely to be retained and accessed for longer time periods. Of the three components listed by Laufer and Hulstijn, the first one (i.e., need) is of particular relevant to our current discussion. Although the "need" component of Laufer and Hulstijn's involvement load

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hypothesis has to do with the retention of incidentally-acquired words, it seems that it can also predict whether, in the first place, the language learner decides to ignore the word or to guess its meaning, a proposition which has implicitly mentioned by Laufer and Hulstijn themselves: “If, for example, the learner is reading a text and an unknown word is absolutely necessary for comprehension, s/he will experience the need to understand it” (ibid., p. 14).

Once the learner has decided to embark on inferring the meaning of an unknown word, s/he can resort to two different types of tools to accomplish, successfully or unsuccessfully, meaning inferencing; i.e., *word-guessing strategies* and *knowledge sources*. A number of vocabulary researchers (Chern, 1993; Morrison, 1996; Nassaji, 2003, 2004 to name but a few) have undertaken studies to identify these tools that learner will use when they try to learn a TW incidentally. The best of these attempts have been accomplished by Nassaji (2003, 2004) who identifies three types of word-guessing strategies (i.e., identifying, evaluating, and monitoring) and five knowledge sources (i.e., grammatical, morphological, world, L1, and discourse knowledge) that would facilitate the process of incidental vocabulary acquisition). Each of word-guessing strategies is further elaborated into subtypes as shown in Table 1, along with an explanation as to how each of subtypes of strategies is used by the learner. Table 2, on the other hand, presents the explanation of each of knowledge sources.

TABLE 1

TYPES OF INFERENCING STRATEGIES (From Nassaji, 2004, p. 117)

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IDENTIFYING

- (a) *Repeating*: The learner repeats any portion of the text, including the word, the phrase, or the sentence in which the word has occurred.
- (b) *Word Analysis*: The learner attempts to figure out the meaning of the word by analyzing it into various components, such as roots, affixes and suffixes.
- (c) *Word-Form Analogy*: The learner attempts to figure out the meaning of the word based on its sound or form similarity with other words.

EVALUATING

- (a) *Verifying*: The learner examines the appropriateness of the inferred meaning by checking it against the wider context.
- (b) *Self-Inquiry*: The learner asks himself or herself questions about the word or the meaning he or she has already inferred.

MONITORING

- (a) *Monitoring*: The learner shows a conscious awareness of the problem by judging its ease or difficulty.
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TABLE 2  
TYPES OF KNOWLEDGE SOURCES USED (From Nassaji, 2003, p. 656)

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GRAMMATICAL KNOWLEDGE

Using knowledge of grammatical functions or syntactic categories, such as verbs, adjectives, or adverbs

MORPHOLOGICAL KNOWLEDGE

Using knowledge of word formation and word structure, including word derivations, inflections, word stems, suffixes, and prefixes

WORLD KNOWLEDGE

Using knowledge of the content or the topic that goes beyond what is in the text

L1 KNOWLEDGE

Attempting to figure out the meaning of the new word by translating or finding a similar word in the L1

DISCOURSE KNOWLEDGE

Using knowledge about the relation between or within sentences and the devices that make connections between the different parts of the text

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A related issue is the question of whether the explicit instruction of word-guessing strategies can help language learners improve their L2 vocabulary knowledge when reading L2 texts. Evidence on this hypothesis was found by Kern's (1989) study in which the learners in the experimental group were taught the four strategies of word analysis, sentence analysis, discourse analysis, and reading for specific purposes while the learners in the control group received no such explicit instruction. His results indicated that the teaching of these strategies promoted learners' word inferencing abilities and that the teaching of these strategies is more effective than long lists of lexical items for learning new words (p. 145). However, studies on the teaching of word inferencing strategies are scarce in the literature and therefore more investigation should be carried out before we jump into firm conclusion about both the teachability of these strategies and effectiveness of their teaching for the process of vocabulary acquisition.

#### **IV. The Effects of Word Repetition on Incidental L2 Vocabulary Acquisition**

Unsurprisingly, a unanimous agreement among the researchers working in the area of incidental vocabulary acquisition is that the more an unknown word is encountered the higher are the chances that its meaning is acquired and retained (Horst *et al.* 1998; Rott, 1999; Webb, 2007). Further, Webb's (2007) findings showed that the meaning and form of a word are not the only lexical aspects that benefit from word repetition. The participants' knowledge of all lexical aspects measured in the study (i.e., orthography, association, grammatical functions, syntax, and meaning and form) improved with the increased exposure to the TWs.

Although L2 vocabulary researchers agree that repeated exposure to an unknown word increases one's chance to acquire it, their opinions diverge from each other as to how much exposure to an unknown word is *optimal* for a learner to acquire it. Some researchers suggest

that 6 encounters to an unknown word would be enough while some other researchers argue in support of 8 encounters (Horst *et al.* 1998).

Abundant evidence have been found for 10 (or more) encounters, both in L1 (Jenkins *et al.* 1984) and L2 (Saragi *et al.* 1978; Webb, 2007). However, it is significant to note that the proposed numbers in the literature do not function consistently for all learners. For instance, Zahar *et al.*'s (2001) findings demonstrated that less proficient learners were more dependent on frequent exposure to an unknown word to be able to acquire it than more proficient learners.

One may wonder why numbers of encounters to an unknown word suggested by different researchers vary so widely from each other. This can be ascribed to researchers' failure to distinguish between two different, but necessarily related, research questions. In other words, the question of how many encounters to an unknown word is necessary for its acquisition is not the same as the question of what effects repeated exposure has on knowledge of a word. Implied in the first question is the assumption that learning a TW is a one-shot process and that the researcher's only duty is to determine the right number of encounters at which the acquisition of the word *happens*. The second question, on the other hand, has in itself the assumption that the process of word learning is an incremental process in the sense that, in learning the TW, the learner gradually moves from the state of complete unfamiliarity with the TW towards full acquisition of it. Usually, studies that propose smaller numbers of encounters to the TW tacitly support the former assumption (i.e., vocabulary acquisition as a one-shot process) whereas studies that suggest larger numbers support the latter assumption (i.e., vocabulary acquisition as an incremental process).

## **V. The Effects of Topic Familiarity on Incidental L2 Vocabulary Acquisition**

Pulido researched the role that topic (2007) and cultural (2004) familiarity played in lexical inferencing and retention through reading comprehension. Her findings provided evidence that both topic and cultural familiarity had significant positive influences on her participants' success in inferencing the meanings of new L2 words.

Pulido (2007) had thirty-five learners of L2 Spanish read two narrative passages. Of the two passages, one passage had a topic more familiar to the participants (trip to a supermarket) while the other passage had a topic less familiar to them (publishing an article), based upon their experience. Each passage contained eight TWs which were, in fact, nonsense, possible Spanish words used to make sure that the participants did not have partial knowledge of the TWs. Pulido's results indicated that "[t]here were substantially more correct TW inferences when reading about a more familiar scenario compared to a less familiar scenario" (p. 79). Pulido ascribed this finding to the hypothesis that the familiar topic of a text let the participants direct their attentional resources more efficiently to the input into which the TWs had been inserted.

To investigate the role that cultural familiarity played in incidental L2 vocabulary acquisition, Pulido (2004) had twenty-three learners of L2 Spanish four narrative passages. Of the four passages, two passages had culturally familiar scenarios (i.e., the situationally familiar versions of registering for classes and grocery shopping) while the other two passages had

culturally unfamiliar scenarios (i.e., the situationally unfamiliar versions of registering for classes and grocery shopping). Five TWs were inserted into each passage, with the TWs being nonsense, possible Spanish words. Pulido's (2004) results demonstrated that the participants would have indicated better memory of the TWs if they had encountered the TWs in texts that had cultural content familiar to them. In Pulido's (2004) opinion, cultural familiarity compensated for the lack of definitional clues about the meanings of the TWs in the more familiar scenarios.

## **VI. Depth of Vocabulary Knowledge and Success in Lexical Inferencing**

Depth of vocabulary knowledge is concerned with "a learner's level of knowledge of various aspects of a given word, or how the learner knows this word" (Qian, 1999, p. 283). To put it in simple terms, depth of vocabulary knowledge refers to the fact that knowledge of a word is more than a simple link between word form and meaning; i.e., knowledge of a word is multidimensional, including such aspects as morphology, pronunciation, spelling, register, stylistics, semantic association, etc. (Haastrup & Henriksen, 2000). Thus, the more knowledge a person has of these aspects, the deeper his knowledge of a particular word is.

Nassaji (2004) has been an effort to examine whether variation in depth of L2 vocabulary knowledge has differential effects on learners' success in inferring the meanings of unknown L2 words. Nassaji's (2004) study showed that;

- those who had stronger depth of vocabulary knowledge used certain types of lexical inferencing strategies more frequently than those who had weaker depth of vocabulary knowledge,
- those who had stronger depth of vocabulary knowledge used certain types of lexical inferencing strategies more effectively than those who had weaker depth of vocabulary knowledge, and
- depth of vocabulary knowledge made a significant contribution to inferential success, over and above the contribution made by the learners' degree of inferencing strategy use. (p. 124)

Based upon these findings, Nassaji (2004) confirms the hypothesis posed by Fukkink et al. (2001) and de Bot et al. (1997) that word-meaning inferencing is a meaning construction process in that learners' prior conceptual and semantic knowledge plays an important role in the process of guessing the meanings of new lexical items. Nassaji (2004) findings also explain why L2 learners lag behind L1 learners as far as the acquisition of new lexical items is concerned because L1 learners have deeper knowledge of lexical items.

## **VII. Incidental and Intentional L2 Vocabulary Acquisition**

Researchers from different competing camps provide theoretical and experimental arguments to support their claims as to the superiority of incidental learning over intentional leaning (or

vice versa) for the improvement of L2 vocabulary knowledge. However, these arguments on the superiority of one approach to vocabulary learning and teaching over the other suffer from two major problems. First, theoretical arguments usually reflect a researcher's broader epistemological and philosophical patterns of thought which may have been wrongly applied to discussions of L2 vocabulary acquisition. Second, experimental evidence and arguments provided are usually based on studies that have investigated the effects of incidental or intentional approaches to L2 vocabulary teaching and learning, but not both. In other words, studies of comparative nature are scarce in this research area, making it difficult to determine which approach (i.e., incidental or intentional) to L2 vocabulary learning is more effective based upon the findings of such studies.

One exceptions are Laufer (2006). Laufer (2006) used Long's (1991) distinction between Focus on Form (FoF) and Focus on FormS (FoFs) to operationalize incidental vocabulary learning versus intentional vocabulary learning /teaching. Her results showed that intentional vocabulary teaching led to 72% retention of word meanings while the retention rate of word meanings acquired incidentally was 47%.

Based upon Laufer's (2006) findings, it seems that intentional approaches to vocabulary learning and teaching are more effective than incidental approaches for acquiring new L2 words. However, the issue may not be as simple as it sounds and we need to interpret the above evidence with caution. First, our discussion of the effects of intentional vocabulary learning versus those of incidental learning depends on how we define the knowledge of a word. If the knowledge of a word is simply defined as an association between word form and word meaning, then, it can be claimed that intentional learning of an L2 word is more effective than incidental learning of it. With this definition of word in mind, the findings showing the superiority of intentional learning over incidental learning should not surprise us. However, even on the surface, it is clear that knowledge of a word consists of more than an association between form and meaning. Second, the often decontextualized nature of intentional vocabulary teaching courses let learners localize their cognitive resources to the TWs while incidental vocabulary learners have to process many textual and non-textual cues along with the TWs in a parallel fashion, a situation requiring delocalization of cognitive resources from the TWs. Finally, we assume that it may not be fair to compare learners who are required to learn L2 words incidentally with those who are taught L2 words intentionally because, in studies, a learner's success is judged only by the number of TWs he/she has acquired; however, incidental learners may have acquired news words during the process of L2 reading which are not among the TWs focused on in a study. Therefore, the success of such learners is usually underestimated versus the performance of intentional learners.

Our suggestion is that teachers take a middle ground regarding the issue and try to take advantage of the strengths of both approaches by using them in a complementary, integrative fashion.

### **VIII. Surviving a Paradox in Research on Incidental Vocabulary Learning**

Research on incidental learning, in general, and incidental vocabulary learning, in particular, is faced with some kind of paradox which can jeopardize conclusions derived from research studies. This paradox results from the pre-test/posttest nature of studies on incidental learning where participants' performance on pre-test and post-test are compared to determine what proportion of unknown words have been acquired by participants as result of reading a text. The pre-test may make research participants conscious of and sensitive to the TWs and lead them to take actions that result in the (partial or full) acquisition of the TWs even before the start of the study; i.e., the pre-test carries with it the threat that it will exert some practice effects on the final results of the study, particularly if it is richly contextualized.

Even though it may be discussed that the inclusion of a control group of participants guarantee that the results of a study are not distorted by the administration of a pre-test, it should be reminded that, because of the particular nature of research on incidental vocabulary learning, studies done in this research area usually lack a control group (e.g., Chen & Truscott, 2010; Chodkiewicz, 2001); thus, studies on incidental L2 vocabulary acquisition are usually carried out on only one experimental group (without any control group). The following are a number of strategies that, if followed, can help researchers ensure that the results of the study are not polluted by administering a pre-test:

- One good strategy is to select the target words through a pilot study with learners of similar L2 proficiency.
- Participants' knowledge or acquisition of the target words should be pre-tested through tasks which require the learner's knowledge of the target words, but do not have the target word as their main focus. For example, in Laufer (2006), [t]he participants read the text and answered five comprehension questions .... [which] required comprehension of the target words" (p. 156).
- Even if a pre-test with explicit focus on the target words is inevitably administered to the participants of a study, it is recommended that (1) the time gap between the pre-test and the actual experiment be as short as possible, and (2) the pre-test contain a large pool of potentially unknown words from which the target words of the study are selected.

Another limitation is related to the format of pre-tests used in research studies and the degree to which the TWs have been (de)contextualized in them. Pre-tests in which the TWs have been decontextualized (e.g., asking the learner to jot down the L1 equivalents of a group of L2 words) do not give us a clear picture of the learner's knowledge of the TWs since the learners' may have partial knowledge of the word which may go unnoticed as a result of the decontextualized nature of pre-tests employed. This problem has led some researchers (e.g., Pulido, 2004, 2007; Webb, 2007, 2009) to replace actual L2 words with nonsense words. On the other side of the coin, Chen and Truscott (2010) refer to a problem with such a strategy to make sure that the participants have no knowledge of the TWs by replacing actual words with nonsense words. According to Chen and Truscott, this strategy only maps news labels (i.e., nonsense words) onto familiar

concepts whereas the acquisition of a new word involves not only new forms but also new concepts (Nagy *et al.* 1987) since languages lexicalize concepts in their own specific ways.

## **IX. Conclusion**

The current paper was an attempt to present a review of research on incidental L2 vocabulary acquisition. It was indicated that firm conclusions cannot be made from the studies that have been carried out so far since there have been many disagreements and contradictory findings regarding the issues that surround the topic and therefore many more investigations should be undertaken before agreements on the issues are achieved. Anyway, it is clear that reading comprehension is one of the most powerful tools for learners to develop their L2 vocabulary knowledge and therefore it is suggested that activities that promote such learning be assigned for both in-class and out-of-class learning situations.

## **References**

- Anderson, R. C., Wilson, P., & Fielding, L. (1988). Growth in reading and how children spend their time out of school. *Reading Research Quarterly*, 23, 285-303.
- Chen, C. & Truscott, J. (2010). The effects of repetition and L1 lexicalization on incidental vocabulary acquisition. *Applied Linguistics*, 31, 693-713.
- Chern, C. (1993). Chinese students' word-solving strategies in reading in English. In T. Huckin, M. Haynes, & J. Coady (Eds.), *Second language reading and vocabulary learning* (pp. 67-85). Norwood, NJ: Ablex.
- Chodkiewicz, H. (2001). The acquisition of word meanings while reading in English as a foreign language. *EUROSLA Yearbook*, 1, 29-49.
- de Bot, K., Paribakht, T. S., & Wesche, M. B. (1997). Toward a lexical processing model for the study of second language vocabulary acquisition: Evidence from ESL reading. *Studies of Second Language Acquisition*, 19, 309-329.
- Fukkink, R. G., Blok, H., & de Glopper, K. (2001). Deriving word meaning from written context: A multicomponential skill. *Language Learning*, 51, 477-496.
- Haastrup, K., & Henriksen, B. (2000). Vocabulary acquisition: Acquiring depth of knowledge through network building. *International Journal of Applied Linguistics*, 10, 221-240.
- Horst, M., Cobb, B., & Meara, P. (1998). Beyond *A Clockwork Orange*: Acquiring second language vocabulary through reading. *Reading in a Foreign Language*, 11, 207-223.
- Hulstijn, J., & Laufer, B. (2001). Some empirical evidence for the involvement load hypothesis in vocabulary acquisition. *Language Learning*, 51, 539-558.
- Jenkins, J. R., Stein, M. L., & Wysocki, K. (1984). Learning vocabulary through reading. *American Educational Research Journal*, 21, 767-787.

- Kern, R. G. (1989). Second language reading strategy instruction: Its effects on comprehension and word inference ability. *The Modern Language Journal*, 73, 135-149.
- Laufer, B. (2006). Comparing Focus on Form and Focus on FormS in second language vocabulary learning. *The Canadian Modern Language Review*, 63, 149-166.
- Laufer, B. & Hulstijn, J. (2001) Incidental vocabulary acquisition in a second language: The construct of task-induced involvement. *Applied Linguistics*, 22, 1-26.
- Long, M. (1991). Focus on form: A design feature in language teaching methodology. In K. de Bot, R. Ginsberg, & C. Kramsh (Eds.), *Foreign language research in cross-cultural perspective* (pp. 39–52). Amsterdam: John Benjamins.
- Morrison, L. (1996). Talking about words: A study of French as a second language learners' lexical inferencing procedures. *The Canadian Modern Language Review*, 53, 41-75.
- Nagy, W. E. (1988). *Teaching vocabulary to improve reading comprehension*. Newark, Delaware: International Reading Association.
- Nagy, W. E. & Herman, P. A. (1987). Breadth and depth of vocabulary knowledge: Implications for acquisition and instruction. In M. G. Mckeown & M. E. Curtis (Eds.), *The nature of vocabulary acquisition* (pp. 19-35). Hillsdale, NJ: Lawrence Erlbaum.
- Nagy, W. E., Anderson, R. C., & Herman, P. A. (1987). Learning word meanings from context during normal reading. *American Educational Research Journal*, 24, 237-270.
- Nassaji, H. (2003). L2 vocabulary learning from context: Strategies, knowledge sources and their relationship with success in L2 lexical inferencing. *TESOL Quarterly*, 37, 645-670.
- Nassaji, H. (2004). The Relationship between Depth of Vocabulary Knowledge and L2 Learners' Lexical Inferencing Strategy Use and Success. *The Canadian Modern Language Review*, 61, 107-134.
- Pulido, D. (2004). The effect of cultural familiarity on incidental vocabulary acquisition through reading. *The Reading Matrix*, 4, 20–53.
- Pulido, D. (2007). The effects of topic familiarity and passage sight vocabulary on L2 lexical inferencing and retention through reading. *Applied Linguistics*, 28, 66-86.
- Qian, D. D. (1999) Assessing the roles of depth and breadth of vocabulary knowledge in reading comprehension. *The Canadian Modern Language Review*, 56, 282-307.
- Rott, S. (1999). The effect of exposure frequency on intermediate language learners' incidental vocabulary acquisition and retention through reading. *Studies in Second Language acquisition*, 21, 589-619.
- Saragi, T., Nation, I. S. P., & Meister, G. F. (1978). Vocabulary learning and reading. *System*, 6, 72-78.
- Schmidt, R. (1990). The role of consciousness in second language learning. *Applied Linguistics*, 11, 129-158.

Schmidt, R. (1993). Awareness and second language acquisition. *Annual Review of Applied Linguistics, 13*, 206-226.

Webb, S. (2007). The effects of repetition on vocabulary knowledge. *Applied Linguistics, 28*, 46-65.

Webb, S. (2009). The effects of pre-planning vocabulary on reading comprehension and writing. *The Canadian Modern Language Review, 65*, 441-470

Zahar, R., Cobb, T., & Spada, N. (2001). Acquiring vocabulary through reading: Effects of frequency and contextual richness. *The Canadian Modern Language Review, 57*, 541-572.