A Review of Research into Vocabulary Learning and Acquisition

Brian NIELSEN

Abstract - Second-language vocabulary acquisition is a field of investigation that has seen an explosion of experimental research in the past 25 years. There are many dimensions to this topic, requiring synthesis of the major findings in this field of study so that teachers can understand their pedagogical implications. This paper attempts to present these major findings under each of the main areas of research on the topic. Following this, the implications of these findings for teaching vocabulary to second language learners are discussed.

Key Words: Vocabulary Learning Strategies; Contextualized Vocabulary Learning; Decontextualized Vocabulary Learning; Mnemonic Vocabulary Learning Techniques; Nonmnemonic Vocabulary Learning Techniques

Introduction

In the last 25 years, the field of second language acquisition has seen renewed interest in vocabulary learning and acquisition. There are many dimensions to vocabulary learning and acquisition, as reflected in the multitude of different areas of research being done on the topic.

This paper attempts to synthesize for the reader the major findings of research into vocabulary learning and acquisition, outlined under each of the main areas of research on the topic. Following this, the implications of these research findings for teaching vocabulary to L2 (second language) learners will be discussed.

Research into Learning Words in Context vs. Learning Words Out of Context

There exist conflicting views among language professionals concerning the relative superiority of two approaches to learning second language vocabulary: learning words in context vs. learning words out of context.

Convictions are strong among many language professionals that contextualized vocabulary learning is more effective than learning words in lists. Oxford and Scarcella (1994), for example, observe that while decontexutalized learning (word lists) may help students memorize vocabulary for tests, students are likely to rapidly forget words memorized from lists. McCarthy (1990) argues

that a word learned in a meaningful context is best assimilated and remembered. However, most studies have failed to produce findings favoring context-dependent vocabulary learning (e.g. Morgan and Bailey, 1943; Wind and Davidson, 1969; Gershman, 1970, Tudor and Hafiz, 1989, Hulstjin, 1992).

Moreover, in recent literature dealing with vocabulary acquisition, there can be seen increasing advocacy for explicitly teaching words out of context at an early stage of language acquisition, with more context-based vocabulary learning taking place at later stages of language development (e.g. Coady, 1997b; Meara, 1997; Nation and Newton, 1997). To justify their position, these advocates often draw attention to the paradoxical situation facing the novice L2 (second language) learner of having to learn vocabulary through extensive reading or listening when they don't know enough words to read or listen well. This suggests the logical importance of helping beginners explicitly learn the basic 3,000 word families, thought to represent the fundamental lexical competence by which learners can read independently and acquire language in a natural manner (Laufer, 1997).

While the debate concerning learning words in context vs. learning words out of context has yet to be resolved, a potentially effective third approach to teaching vocabulary is beginning to emerge through research findings. This approach combines decontextualized vocabulary instruction with contextualized reading. Two studies have found learning that involves both contextual reading and explicit vocabulary instruction results in much greater gains in vocabulary knowledge than does contextualized learning through reading alone (Paribakht and Wesche, 1997; Zimmerman, 1994).

Research into Decontextualized Vocabulary Learning Strategies

Of the decontextualized vocabulary memorization strategies, mnemonic and non-mnemonic elaboration techniques involving deep semantic processing of target words have been shown to be more effective than memorization strategies involving only shallow processing, such as oral rote-repetition (Atkinson and Raugh, 1975; Pressley and Levin, 1978; Pressley, Levin and McCormick, 1980; Cohen and Aphek, 1981; O'Malley, Chamot, Stewner-Manzares, Kupper, and Russo, 1985).

Mnemonic techniques involve the use of both visual and verbal mental imagery to relate a word to be memorized with some previously learned knowledge. One mnemonic technique, *the Keyword Method*, has been shown to be superior to any other deliberate vocabulary learning strategy (see reviews in Cohen, 1987; Meara, 1980; Nation, 1982).

There are two versions of the Keyword Method, one based on the construction of visual images and the other based on the construction of sentences. Evidence exists that the visual imagery version is superior to the sentence construction version in facilitating recall of words (Pressley, et al, 1982). The following example by Pressley et al. (1982) demonstrates how both these versions can be

used:

> "Consider, for example, the Spanish word *carta* meaning (*postal) letter*. Using the keyword *cart*, a learner might generate either an image of a shopping cart transporting a letter, or a sentence such as *The cart carries the letter*." (p.50).

However, the Keyword Method remains largely unpopular with both teachers and learners because of the effort involved in memorizing words in this manner. In addition, critics question the usefulness of a technique that has been consistently shown to enhance retention of concrete words that can be perceived visually - e.g. *table*, but which has been shown not to be as effective with abstract words such as *peace* (Hulstjin, 1997). Moreover, its effective utilization is considered largely dependent on the proficiency level of L2 learners, allowing associations to be made with L2 vocabulary with which they are already familiar. Cohen and Aphek (1980) found that if students were initially more proficient, they were better able to use associations in recall tasks.

Non-mnemonic elaboration techniques, such as *semantic mapping* and *ordering*, encourage learners to process target words in terms of their semantic properties. 'Semantic mapping' involves brainstorming associations that a word has and diagrammatically displaying the results. 'Ordering' is a technique that asks learners to organize scrambled lists of words, forcing them to distinguish differences in meaning during the arrangement process (see Sökmen, 1997 for a detailed overview of these and other nonmnemonic semantic elaboration techniques).

It has been shown that combining nonmnemonic semantic elaboration techniques with the mnemonic Keyword Method results in greater retention of words than if the Keyword Method alone is used (Brown and Perry, 1991 – cited in Ellis, 1995 p. 15). However, semantic elaboration techniques are mostly recommended for reviewing activities in the classroom (Stieglitz, 1983; Nation, 1990 – cited in Sökmen, 1997) and should not be considered as individual vocabulary learning strategies. In addition, it would seem that since these techniques also assume a reasonable L2 vocabulary base from which associations can be made, they are also largely unsuitable for beginner level L2 learners.

The *Sentence Writing Method* (also known as the Sentence Generate Method) is recommended by reading researchers as a way to increase vocabulary learning, and involves having learners construct a sentence containing the target word to be memorized (Dale, O'Rourke and Bamman, 1971; Gipe, 1979 – cited in Pressley et al. 1982, p. 51). Using this method, learners are asked to not just restate the definition of the target word in the generated sentence but to construct a sentence from which the meaning of the word can be inferred.

However, research to determine the effectiveness of sentence writing as a vocabulary memorization strategy are mixed: While three studies have found that sentence writing did not facilitate either the production or the recall of definitions of words learnt under this technique (Pressley et al. 1982; Barcroft, 2000, Nielsen, 2002), the findings of two other studies suggest that sentence writing is an effective method for facilitating memorization of words (Coomber, Ramstad,

and Sheets, 1986; Laufer, 1997).

Research into the Most Commonly Used Decontextualized Vocabulary Learning Strategies

Research that has attempted to investigate which decontextualized vocabulary strategies are most commonly used has revealed that more mechanical strategies are often favored over more complex ones. In a longitudinal experiment, Cohen and Aphek (1981) found that students simply tried to memorize words that they did not know. O'Malley et al. (1983) found that repetition was the most commonly mentioned strategy, with strategies involving deeper more involved manipulation of information (i.e. imagery, inferencing, Keyword Method) being much less frequent.

Considering the degree to which the *Depth of Processing Hypothesis* (Craik and Lockhart, 1972; Craik and Tulving, 1975- cited in Schmitt, 1997, p.201) is supported by research into 'deeper' vocabulary learning strategies, which have been shown to enhance the retention of words, these findings may be considered disappointing (e.g. Cohen and Aphek, 1981; Pressley, Levin, and Miller, 1982). Ellis (1995) states that this "Depth of "Processing" hypothesis, when applied to vocabulary acquisition, "holds that shallow processing like oral rehearsal does not lead to long-term retention of words but that deep processing, whereby semantic associations are accessed and elaborated, does" (p.12).

Research into the Vocabulary Learning Approaches of 'Good' and 'Poor' Learners

Other VLS (vocabulary learning strategy) research has attempted to identify the ways in which "good" and "poor" learners approach lexical learning. Ahmed (1989), in a study involving 300 Sudanese learners of English found that good learners not only used more vocabulary learning strategies but also relied more on different strategies than did poorer learners.

Sannoui's research (1992, 1995) identified two distinctive approaches to L2 vocabulary learning: those who structured their vocabulary learning, independently engaged in a variety of learning activities and practiced target words, and those that did not. Learners with a structured approach were shown to be more successful than those who followed an unstructured approach, regardless of level of instruction or type of instruction received.

Kojic-Sabo and Lightbrown (1999) grouped learners according to the vocabulary learning strategy or set of strategies that dominated their approach. Learner independence and time were shown to be associated with the vocabulary learning profiles of the two most successful groups.

In the same study it was also shown that EFL (English as a Foreign Language) learners were more likely to utilize a review strategy than were ESL (English as a Second Language) learners. However, ESL students showed a greater creativity in their selection of reviewing techniques.

Research has also indicated that patterns of strategy usage can change over time as a learner either matures or becomes more proficient in the target language. The above study by Ahmed (1989) found some evidence of a progression in strategy usage as the learner became more experienced. Schmitt's (1997) survey of 600 Japanese respondents, regarding which strategies they used and which they felt most useful, revealed that the pattern of usage does change for Japanese learners as a whole.

It was found that although written repetition is a mainstay of Japanese vocabulary learning, its use along with the use of paired associate words (L2 – L1) on lists and cards decreases as Japanese learners mature.

In addition, it was found that many of the strategies reported by mature respondents as useful involve "deeper" processing and greater cognitive effort – That is, mature learners seem to understand their value.

Research into the Trainability of Vocabulary Learning Strategies

Much of the research into vocabulary learning strategies has been aimed at determining the most effective vocabulary memorization techniques, developing taxonomies of strategy usage, and at identifying the vocabulary learning strategy (VLS) usage that distinguishes good and poor language learners.

However, there has been very little research done regarding the trainability of vocabulary learning strategies. Of the few studies done, the results are inconclusive; while some studies report reasonable success, others report only limited success and student resistance (McDonough, 1995; Skehan, 1989; Stoffer, 1995). This lack of research into VLS trainability can be attributed to the necessity for such studies to be longitudinal in nature, and also the difficulty with which success in VLS use and training can be measured.

The limited research done in this area has shown that culture is an important determiner regarding the effectiveness with which VLS can be taught and used by learners. O'Malley and Chamot (1990) found that Hispanics who had strategy training improved their vocabulary scores compared to a Hispanic control group. However, Asians in strategy training groups resisted VLS training and performed worse than the Asian control group - who used their familiar rote repetition strategy. In addition, analysis of a survey by Schmitt, Bird, Tseng, & Yang, (1997) revealed that learners of different culture groups have quite different opinions regarding what VLS they consider useful.

Implications for Teaching Vocabulary to Second Language Learners

A synthesis of the research findings discussed in this paper suggest the following implications for

teaching vocabulary to L2 learners:

At early stages of language development decontextualized vocabulary instruction has been found to be more effective in building a fundamental vocabulary base than has contextual reading. This suggests that teachers of beginner-level learners need to include greater amounts of decontextualized vocabulary instruction (e.g. word lists), gradually increasing toward more context-based vocabulary learning (e.g. extensive reading) as the language ability of their learners develop.

Second language teachers need to think of ways of exposing 'poorer' learners to the ways that 'good' learners approach lexical learning. That is, making 'poorer' learners more conscious of the need to develop a more independent and structured approach to vocabulary learning, which research has shown to be most associated with success in vocabulary learning.

Introducing and having learners practice using a variety of alternative vocabulary learning strategies can be considered an effective way of enabling learners to achieve more effective independent vocabulary learning in the future. Research has shown that strategies involving deeper elaboration (i.e. more active processing of information) result in better retention of words. However, many mnemonic and non-mnemonic semantic elaboration strategies assume a reasonable L2 vocabulary base from which associations can be made. For this reason, instruction in such strategies should be considered largely ineffective for beginner-level L2 learners, but would benefit learners of higher proficiency levels.

In attempting to introduce vocabulary learning strategy training into a second language classroom, research alerts us to the following potential pitfalls: Certain cultural groups are likely to have quite different opinions regarding what VLS they consider useful, which may result in resistance to learning some types of alternative vocabulary learning strategies. In addition, there may be some resistance to VLS involving deeper elaboration, because of the cognitive effort required in memorizing words in this manner.

Conclusion

This paper has attempted to synthesize the major findings of various areas of research into vocabulary learning and acquisition. These findings suggest the following for language teaching practice:

Language teachers need to develop in learners an awareness of alternative vocabulary learning strategies that involve active processing of the target vocabulary.

Language teachers need to make learners conscious of the need to develop an independent and structured approach to language learning, which has been shown to be most associated with vocabulary learning success.

Greater amounts of decontextualized vocabulary instruction should be given to beginner-level

learners, gradually increasing toward more context-based vocabulary learning as their language ability develops.

Teachers need to be aware that learners may resist the learning of certain vocabulary learning strategies because they are culturally quite different, because certain elaboration strategies require a reasonable L2 vocabulary base from associations with new vocabulary are made, or because some strategies require greater cognitive effort than other commonly used techniques.

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