

Vocabulary learning and instruction in a second or foreign language

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This article discusses major issues concerning vocabulary learning and instruction. The different "knowings" that constitute knowledge of a word are discussed, with the point made that students should develop a depth as well as a breadth of knowledge of vocabulary. Different ways that vocabulary is taught in the classroom are briefly reviewed. Though direct vocabulary teaching methods play an important role, students are the best judges of which words are useful for them to learn. The main point of the article is that, in order to help intermediate and advanced learners develop a depth and breadth of vocabulary knowledge, it is important to help them develop the skills and abilities to understand and learn vocabulary on their own. As learning through exposure to vocabulary in oral and written contexts is a major source of vocabulary development, helping students develop strategies and knowledge to use internal and external contexts to infer meanings is a major step towards helping them become independent learners.

Introduction

In the initial phase of learning a second or foreign language, often the main concern is with mastering the structure, basic vocabulary (often chosen to illustrate the structure), correct pronunciation, etc. This seems to be the case both for beginners who are learning the language in a classroom situation and for those who are learning it in a more natural setting. Learners worry about how they sound, how to put words together in the right order, and how words are inflected. But as soon as this initial phase is over, when a learner is just beginning to feel able to communicate about everyday matters, the frustration of not knowing enough vocabulary seems to be very common. In fact, the acquisition of vocabulary is identified by most learners as their single greatest source of problems (Meara 1980:221). For intermediate students, the lack of vocabulary is a problem for written and oral production as well as for reception, especially when reading and listening to more formal talks where there are no possibilities of intervening. For advanced students, the problem lies more in the area of reading and listening, as they usually have learned enough vocabulary to be

able to express whatever they want, even if their registers might be restricted and their choice of words limited. The lack of vocabulary or the imprecise use of words by learners is also disturbing to native speakers and is a significant source of misunderstanding. In a survey by Johansson (1978), native speakers of English rated lexical errors as more disruptive and serious than other errors made by learners.

Vocabulary learning in language instruction

In the second- or foreign-language classroom, there have been various techniques and approaches used by teachers to extend their students' vocabulary. These range from pair-associate learning of a fixed number of words (usually rote learning of a word along with the mother-tongue translation) to an emphasis on learning words in natural contexts. In the history of vocabulary instruction, these extremes, and all the other techniques in between, seem to replace each other at certain intervals, with current statements on the teaching and learning of vocabulary having been around for a very long time (Carter & McCarthy 1988).

The importance that has been given to vocabulary development throughout this century has depended, of course, upon the different views of language teaching and learning as a whole. *The Classical Method* (also called the Traditional Method or the Grammar-Translation Method) did pay some attention to vocabulary, because the main purpose was to understand classical texts and translate them into the native language. With vocabulary selection based on the reading texts used, words were taught through bilingual word lists, dictionary study, and memorization (Richards & Rodgers 1986:4). Students were supposed to learn the meaning of words by rote and be ready for tests in which they were to translate text and words out of context. *The Direct Method* introduced constructed dialogues, and vocabulary was supposed to be learned through communication in the target language. Common everyday vocabulary was taught in context through the direct association of words and phrases with objects and actions, without the use of translation (Omaggio 1986). *The Audio-lingual Method* focused on language structure and the importance of forming correct language habits, so vocabulary was kept to a minimum till the basic structures were learned. The vocabulary that was used was subordinated to the need to demonstrate a particular structure. *Cognitive e-Code learning* (Rivers 1981) strove to build up competence in a foreign language through a firm knowledge of the grammatical rules, but after the initial period, vocabulary learning was given equal importance.

Some recent approaches seem to emphasize the development of vocabulary in the context of functional/notional phrases for the purpose of communicating one's wants and needs in the second language. *The Communicative Approach* emphasized vocabulary practice and aimed at giving learners opportunities to

interact with one another and the teacher in as natural situations as possible (Palmberg 1986:16). However, sometimes communicative language learning has been pre-empted by a somewhat narrow view of basic needs in communication in a restricted set of situations (Rivers 1983:123). This sometimes resulted in the learning of 'hollow' language, in the sense that students' understanding of the various possibilities for meanings of words were sometimes lost in the process of learning appropriate expressions to be used in specific situations (Rivers 1983:124). Though some functional phrases may be frozen to the extent that the meaning resides in the phrase itself rather than in the individual words, vocabulary development is still a vital part of language learning. Without an extensive vocabulary, it is difficult to convert phrases, structures, and illocutionary acts into comprehensible communication (Rivers 1983:125). (See Rivers 1981, Hvenekilde 1984, Omaggio 1986, Palmberg 1986, and Carter & McCarthy 1988 for a more detailed review of the main methods in language teaching.)

As well as looking at different methods and approaches to language learning in general, we also have to look at how vocabulary is taught. When vocabulary has actually been taught as a separate skill or knowledge, the techniques have differed. It seems like the traditional method of memorizing words has been a common way for students to learn vocabulary, whether the teacher gave translations, demonstrated the words, used images, provided contexts in which the word was to be learned, gave synonyms, or simply defined the word with or without a translation into the native language. Sometimes students have been encouraged to use certain mnemonic devices to help them store words in memory. Words may be taught in different groupings, such as in semantic or situational sets, to provide more associative bonds for retrieval.

However, before discussing the various ways vocabulary is taught in the classroom and the effectiveness of these direct forms of vocabulary instruction, we should look first at what constitutes knowing a word in the sense that native speakers can be said to know a word. In doing so, we may then develop a better sense of how different methods of vocabulary instruction help students to develop knowledge of a word and what it is about a word that a student learns through such instruction.

Knowledge of a word

What do we actually mean when we say that we have learned a word? Learning vocabulary is more than learning the simple meanings of individual words. The learning of a word is a long process, starting with the word being totally unknown and ending with a long list of 'knowings' for it. According to Richards (1976), Golden (1984a) and Nation (1990), some of the features included in this process are getting to know:

- the concepts that the word represents
- the associations the word evokes
- the word's connotations
- the word's collocations (e.g. what other words are used in connection with it)
- the word's social and stylistic limitations
- the word's derivative possibilities
- the word's syntactic and morphological behavior
- that the word might be polysemantic.

Some of these deserve to be discussed in more detail.

To know the concepts a word represents means that there is a link between a certain form (either written or oral) and a concept. According to schema theory, words represent conceptual frameworks or schemata (Anderson & Freebody 1981). Schemata are knowledge structures that represent what we know about concepts stored in our memory; they correspond to the meanings of concepts and contain networks of interrelations among the constituents of a concept (Rumelhart 1980). Some major features and aspects of schemata are:

- 1) Schemata have variables, which can be thought of as slots that have associated values. Our knowledge of the default values of the variables and their interrelations constrain these variables.
- 2) Schemata consist of a hierarchy of schemata embedded within schemata.
- 3) Schemata represent knowledge at all levels of abstraction, from ideologies to knowledge about the meaning of a particular word.
- 4) Schemata represent knowledge rather than definitions (Rumelhart 1980). (For more detailed discussions about schemata, their features, processes, and functions, see Rumelhart (1980) and Adams & Collins (1979).)

In first-language vocabulary development, the learning of words generally comes in the context of learning new concepts that these words represent. In view of this, Nagy & Herman (1987:30) advocate a knowledge-based approach to vocabulary teaching among first-language students in which instruction aims at establishing rich ties between new words and prior knowledge, presenting new words and concepts in the context of larger domains of knowledge. However, adult learners of a second or foreign language have already developed a vast store of background knowledge, or schemata, through their interaction with the society and culture of their native country. Therefore, isn't vocabulary acquisition in a second or foreign language mostly a matter of associating new words learned in a foreign language with schemata already established in their first language?

The learning of concepts does not only apply to children – adults learn new concepts as well as new words all their lives. Concept learning is not restricted to the context of first-language learning, since new knowledge about the world

is often acquired through a second or foreign language (af Trampe 1984). Imagine foreign students who come to study at universities in the U.S. joining fraternities and going through hazings; if these concepts were unknown in their native countries, they would not only have to learn these new words, but also the concepts behind them.

What seems more common, however, is that the schemata representing known concepts may undergo a change as we come to understand differences between concepts we know and similar ones commonly held by members of the second- or foreign-language culture and society, because we usually try to understand new concepts by relating them to some prior knowledge about things that are (even remotely) similar. Rumelhart (1980) identifies three processes whereby new schemata are developed: *accretion*, *tuning*, and *restructuring*. *Accretion* occurs when the schema is adequate to account for the experience that is activated, but the experience or information leaves some trace that can later be the basis for future recall. No new schemata are constructed in this process. *Tuning* occurs when our schemata are inadequate for interpreting the experience or information, and so a schema may be modified through upgrading its variable constraints and default values, replacing a constant part of the schema with a variable one, or vice versa. *Restructuring* occurs when the change is great enough that the old schema is copied with the new modifications to form a new schema.

For example, in Korea there is a concept of dating called a "meeting" which is a highly organized form of dating where a male representative from one university meets with a female representative from another university and they arrange for a number of male students and female students to meet as a group at an arranged place. At a subsequent meeting of, say, ten male and ten female students, each male student draws from a box a piece of paper with a number from 1 to 10, and each female student does likewise. The male student with the number 1 is then matched with the female student who drew the same number, and so on. Each student pairs up with his/her partner and then goes on a date. (Notice that an English loan-word is used to represent this new concept, because it differed enough from any other such concept in Korea, such as arranged marriages, that a Korean word might carry very different variables and default values.) Nowadays, Korean students coming to America might learn about blind dates. They may at first relate this word to their schema of *meeting*. However, as they learn the full meaning and concept of a *blind date*, they may find that the variable or constant components are sufficiently different (blind dates are not so organized, a greater range of people (i.e. non-university) participate, and it doesn't involve a group, with usually one person introducing a friend or relative to another friend or relative) that a new schema, along with the new word, would be learned.

Therefore, sometimes a schema may be adequate enough for a word in a second language to be learned to represent this schema, but sometimes the second-language learner's schema may have to be accommodated in order for a

word to be fully known, with all the variable and constant components that accompany the meaning of the word. Such accommodation may extend to creating a new schema. This may support the notion that the compound/coordinate distinction between bilinguals may not be so dichotomous as once proposed. Instead, a bilingual's lexicon may include a native word and a foreign word to represent one meaning or concept, as well as cases for which a native word represents one meaning or concept, and a related foreign word represents a different meaning or concept; for some words, the compound/coordinate distinction may be a matter of degree along a continuum as one acquires a fuller, broader knowledge of the foreign word (Grosjean 1982).

Our long-term memory consists of a vast network of interrelated concepts, and words are linked to these. They become linked with these interconnections and associations when we find that they evoke the meanings we intend for our listeners or help us to interpret what is said to us. Every listening or speaking experience modifies, expands, or strengthens these networks (Rivers 1977: 167). This could also be said for reading and writing experiences. Thus, knowing a word also means developing these links in our conceptual network.

To know a word also means to know that its meaning can be polysemous. Polysemy is a ubiquitous part of most languages; Nation (1983; cited in Carter and McCarthy, 1988) estimates that the 850 words on C. K. Ogden & I. A. Richards' Basic English word list (Ogden 1929) includes 12,425 meanings, and Johnson & Pearson (1984) estimate that 72% of the 9,000 words in the Ginn lexicon have multiple meanings. Keeping in mind that criteria for knowing a word are often given in an abstract, idealistic sense of what it is for a native speaker to know all the meanings of a word, the least that we could hope for, in terms of second- or foreign-language learners, is for them ultimately to know:

- 1) that the possibility exists for a word to have another meaning and, when they encounter a word that has a different meaning than the one they have already learned, to recognize that the new meaning may be inconsistent with the one they already know
- 2) certain core meanings of words (though which meanings can be said to be core meanings may sometimes be relative) from which to be able to infer other meanings from the context
- 3) meanings that are of use to them in their specific situation, occupation, interests, etc.

Foreign students need to be aware of the possibility that a word is polysemous in the target language. Even advanced learners sometimes cannot recognize when the meaning of a certain word they encounter does not fit the meanings they have already learned. Rather than recognizing that there is a knowledge gap and trying to figure out the meaning or look it up in a dictionary, some learners may try to interpret a word according to their existing knowledge of the meanings of that particular word. For example, in a study on reading

comprehension among second-language learners in English, Kang (1991) found numerous examples where advanced learners misinterpreted text (sometimes greatly) because they tried to interpret words according to their limited knowledge of the meaning of a word rather than recognize that the word may potentially have a meaning that they had not previously learned. Using a *Think-Aloud* protocol to investigate inference and metacognitive strategies of advanced ESL readers, Kang had subjects verbalize their thoughts as they read a short story ("The Open Window" by H. H. Munro). She found that, when interpreting some words in the story, the subjects chose and applied one meaning of a particular word and failed to recognize that this was inconsistent with earlier or later information in the text. They did not recognize the possibility that another meaning might be more appropriate, and this failure sometimes had a significant effect upon the interpretation of the story.

For example, the last sentence of the story read: "Romance at short notice was her speciality". One subject correctly inferred the meaning of *romance* as 'fiction' (from the immediately preceding context, which implied that the main character had been lying all along) and at that point realized the main point of the story was that the central character had been pulling another character's leg all along. Another subject, even after looking up the word *romance* in his dictionary, interpreted it as meaning 'fantasy', whereupon he inferred that the whole sequence of events that led up to this last sentence had been the product of the character's hallucinations. A third subject, relying upon her previous knowledge of the word as meaning 'love' or 'a love affair', threw out many of her previous inferences and interpretations and went on to reinterpret the story. She now saw it as portraying the central character as being romantically interested in another character and therefore telling a fictitious story to cover up for her love affair with a third character, rather than interpreting these lies as providing examples of "romance" being "her speciality". Thus, the interpretation of this single polysemous word, the choosing of one of its various meanings, determined to a large extent the overall interpretation of the story by these three subjects.

In another example, two subjects failed to consider that the meaning they chose for the word *fine* was wrong in that particular context, even when they both recognized that the meaning they chose, 'excellent', was inconsistent with the following word, *mess*. Though one subject questioned how a mess could be excellent, he did not change his interpretation of the word *fine*. Another subject looked up the word *mess* in the dictionary and chose the meaning 'meal', since this might make sense in combination with *fine*, though it didn't make much sense in the context of the story. This led him to interpret the sentence "They'll make a fine mess on my carpets" (with mud on their shoes, as implied from the preceding context) as 'They will prepare an excellent meal on the carpet'. Neither of these subjects recognized that another meaning could apply to this word in this context (such as 'awful' or 'terrible').

Though it would be difficult for a language learner to know all the meanings

of a word, sometimes knowing some of the possible meanings might help him/her be able to infer other meanings. For example, there are numerous meanings for the word *head*, but knowing the meanings 'mind' and 'to lead' might help a learner to infer meanings of idiomatic or other usages of the word, such as *over one's head* or *the head of the family*. The usefulness to a learner's specific situation or interest will to a large extent help determine which meanings he/she ultimately learns, particularly in terms of productive knowledge. To a sailor, *head* meaning 'leader' might not be as useful as the word *captain*, but one would expect a sailor to learn or know the meanings associated with *head of the ship* (the front part), *headed for*, *take a heading*, or *the head* (slang for 'bathroom').

To fully know a word, it is also important to know its collocations – the words among which it commonly occurs. Learning the collocations of a word not only allows the learner to know what kind of words can be expected to be found together, for it also can make him/her aware of certain lexical restrictions; i.e. *convenient* can go together with *situation* or *time*, but not with animate nouns such as *person* (Nattinger 1988). In addition, the meaning of a word is often connected with the words it is generally associated with:

Not only do these associations assist the learner in committing these words to memory, they also aid in defining the semantic area of a word, for every useful collocation is another step towards understanding the concept of a word and in helping the student infer meaning from context. (Nattinger 1988: 69-70).

For example, in a study of the vocabulary in 40 Norwegian physics, geography and history textbooks for 4th-9th grade students (a corpus of 825,273 words), Golden & Hvenekilde (1983) found that many of the words were very "faithful to a partner", even excluding idioms. A word like *skjær* ('skerries') appeared 8 times in the geography texts for 4th grade, and in 5 of these cases it was coordinated with *holmer* ('holms/islets'). *Holmer* itself appeared 7 times in the same texts, so these words were mutually faithful. Even a word like *kort* ('short') was in all its 14 instances followed by *tid* ('time') in the history text for 9th grade (a total of 63,731 words).

In the study mentioned above by Kang (1991), three references to the word *nerve* in different lexical sets caused problems for some of the subjects. The subjects correctly interpreted the meaning of the word in *nerve cure* and *your nerves will be worse than ever*. However, they had problems when it collocated with other words, such as in *get on her nerves* and *lose their nerve*; one subject interpreted both of these using the same meaning for *nerve/s* as in the first two cases, leading to a misinterpretation of the passages in which the latter two were found. Students need to learn the words that commonly collocate to give certain meanings, such as *get or gain the nerve to...* or *lose one's nerve*, where *nerve* means 'courage', or *have the nerve to...*, where it means 'effrontery', etc.

Another aspect of knowing a word is knowing its connotations. Part of

learning a word such as *altruism* is learning that it has a positive connotation. The concept of a *blind date* in Korea has a very positive connotation; it is a very common way for young people to meet members of the opposite sex for a date, and it is even seen by some as more acceptable or appropriate than meeting incidentally and then dating. In the United States, however, the word can have a somewhat negative connotation, often eliciting the excuse that "I'm just doing it as a favor for a friend", and is sometimes the butt of jokes. The language of politics provides several examples of differences in a word's connotation in different cultures, as Wilkins (1972) points out, giving the obvious examples of different connotations for words as *communism* and *capitalism* in the U.S. and the former Soviet-Union.

Of course, to know a word is also to be able to recognize and produce it appropriately, to have both receptive and productive knowledge of it. However, splitting vocabulary learning into receptive and productive knowledge may be too simplistic. Summers (1988) sees this dichotomy as ignoring an intermediate stage: that of a deep understanding of a word, what it means in general as well as within a context. Faerch, Haastrup & Phillipson (1984:100) see this distinction as more of a continuum between the ability to make sense of a word and the ability to activate the word automatically for productive purposes. Basically, knowledge of a word may be a matter of degree along this sort of continuum between receptive and productive knowledge, along which movement towards the ability to produce the word is connected with its amount of linkage to the various interconnections in the semantic or conceptual networks in our memory. Recall and retrieval are processes necessary for production, and "the more associations and interconnections we have developed, the more efficiently we can recall and retrieve" (Rivers 1983:129). The more encounters we have with a word in meaningful discourse, through both listening and speaking, the more meaningful connections and associations we develop for it (Rivers 1977).

There are also other kinds of 'knowing', such as knowing the social and stylistic limitations of words, their derivational possibilities, etc., as mentioned earlier. However, the main point in this extended discussion is that learners need a great deal of exposure to language in context, both verbal and written comprehension and production, to be able to develop all the various ways of knowing words and develop depth as well as breadth of vocabulary. Of course, one such exposure is that which the students receive in vocabulary instruction in the classroom. But it is widely recognized that most of the words that children learn in their first language are learned independently and incidentally in oral and written contexts. Nagy & Anderson (1984:304) state that "even the most ruthlessly systematic direct vocabulary instruction could [not] ... account for a significant proportion of all the words children actually learn". One would find little argument with these points as applied to adult second language learners, particularly at the intermediate and advanced stages.

Direct instruction of vocabulary in the classroom

At the outset of our discussion of direct instruction in the classroom, we do not wish to deny the importance of direct instruction of vocabulary in the second- or foreign-language classroom, particularly in the beginning stages but also continuing into the intermediate and advanced levels. Although, as mentioned earlier, there is rarely a one-to-one mapping between words in two particular languages, there doesn't seem to be any escape from glossing vocabulary, supplying translations in the native language, to help guide students to an understanding of a word (Twaddell 1972). Teaching the definitions of words, though much maligned, still increases the chances of a student learning the deeper meanings of these words and other words from context. Mnemonic devices and techniques, such as Loci (using sequences of visual images to associate words with) and Key Words (associating a foreign word with similar sounding ones in the native language, and creating an image to associate with the foreign word that incorporates images from both the native and foreign words) have proven to be helpful in committing words to memory. Teaching word families, situational sets, and semantic sets (synonyms, antonyms, coordinates, superordinates, subordinates), as well as pointing out and manipulating relationships among words (such as semantic mapping, semantic features, collocations) are also very useful classroom activities to increase student recall of words (Nattinger 1988). Nattinger also sees value in teaching semi-fixed patterns, along the lines of Wong-Fillmore's (1979) formulaic frames with analyzed slots (that is, larger chunks of language), for students to learn as a whole and which can be broken down later and analyzed by the students. Teaching vocabulary through context has also become a very common activity in the second- or foreign-language classroom.

However, one important point that we have to keep in mind is that this is just the start of a learner's development of vocabulary knowledge. Twaddell regards glossing as at most a beginning of the learner's developing meaning for a word – a gloss is better than nothing, but no more than a starting point. The least valuable information about a word is a word in another language (Twaddell 1972:271). Likewise, teaching definitions and other such brief instruction is “the initial encounter in the series of encounters that are necessary to fully learn a word” (Graves 1988:169). Mnemonic techniques are still basically paired-associate learning, which isn't “sufficiently rich to account for what is involved in the acquisition of a second-language vocabulary” (Meara 1980: 225). Such techniques may provide a start, but do little to help the learner gain the depth of knowledge and develop the semantic relationships that are needed for a second- or foreign-language learner to ultimately know a word fully and be able to use it in a variety of contexts. Using systematic approaches to teaching words, such as semantic sets, semantic feature matrices, etc., help make the learner aware of relationships between words, but “naturally occurring language is not easily systematized” (Summers 1988:112). In addition, in the

classroom one would only be able to touch upon a small portion of the semantic relationships that occur among words as well as among words and their concepts.

McKeown and colleagues have presented several studies (Beck, Perfetti & McKeown 1982, McKeown, Beck, Omanson & Perfetti 1983, McKeown, Beck, Omanson & Pople 1985) where they aim at increasing the students' vocabulary in L1 in order to facilitate "complex verbal tasks such as reading" (Beck et al. 1987:149). The activity that gave the best results was what they called 'rich' instruction, in which students were required to manipulate words in various ways and participated in activities that promoted and reinforced deep processing of the words (Beck et al. 1987:149).

As for teaching vocabulary through context, it is questionable whether this is as effective as other more intensive or explicit approaches, such as the Key Word method or even rote learning (Sternberg 1987, Nagy & Herman 1987). However, we must distinguish between teaching words through context and learning words through context, as we now shift the discussion from teaching students words in the classroom to students learning words on their own outside the classroom.

Vocabulary learning outside the classroom

As stated earlier, many researchers believe that incidental learning of vocabulary by children is a major source of vocabulary development. Though some studies (Baldwin & Schatz 1984, Pressley, Levin, & Delaney 1982) have shown that it may not be an effective way to learn vocabulary, particularly in comparison to other methods, Nagy & Herman (1987) argue that these and other studies have failed to take into account that learning the meanings of words from context usually "proceeds in small increments". If we consider word knowledge as a scale, running from no knowledge through various degrees of knowledge to full knowledge, single encounters with words in context may move a word a "little bit higher on the scale of knowledge" (Curtis 1987:25). In two studies, Nagy & Herman (1987) found that reading textbooks designed for a particular grade produced small increases in word knowledge among 3rd to 8th grade L1 students, and they estimated that the chance of learning a word from a single exposure in a text was about 1 in 20. However, though this figure is small when you consider how many unknown words students encounter per year, learning words from context could result in a significant increase of vocabulary. Nagy & Herman estimated that children reading 25 minutes per day would encounter 15,000 to 30,000 unfamiliar words per school year (200 days). If 1 in 20 of these words were learned, then this would result in an increase of vocabulary of between 750 and 1,500 words per school year.

Studies among adults have also shown that reading, particularly reading for one's own interest or pleasure, is an importance source of vocabulary develop-

ment. In a study among 42 native-speaking university students, Haggard (1986) found that pleasure/informational reading was the most frequent source of new vocabulary among her subjects. White, Vierma, Kang, Krashen & Trtica (1987:276) found similar results in surveys among native-speaking college students: "Students in both of our samples considered reading to be an effective means of increasing vocabulary: College students are, apparently, aware of the power of reading." However, in a previous study among foreign language (Spanish) university students, they found that, although 85% of the students looked upon reading as an efficient means of improving vocabulary in their first language, less than one-third of the students thought that reading was an effective way of acquiring second-language vocabulary. This led them to speculate that these students had done little or no pleasure reading in Spanish but had for the most part read only short and difficult passages that were selected for them (p. 276). Krashen himself is a strong proponent of reading for pleasure as a means of vocabulary acquisition in a second or foreign language.

This is not to say that direct vocabulary instruction, using any of the methods listed above, should not be a priority. There is a strong correlational relationship between word knowledge and reading comprehension (Nagy & Herman 1987, Anderson & Freebody 1981). Not only may reading increase word knowledge, but word knowledge increases reading comprehension. Second-language students, particularly at the beginning levels, are usually taught a base vocabulary of high-frequency words (as well as structure), and this could be accomplished through the methods above. If the density of unknown words in a text is too high, comprehension and vocabulary learning from context can be negatively affected (Nation & Coady 1988). Some statistical studies of vocabulary "indicate that a relatively small vocabulary is needed to account for a very high percentage of words in a text" (Nation & Coady 1988:109). For example, Golden & Hvenekilde (1983) found that the 50 top words on the frequency list from the 9th grade in their study of Norwegian physics textbooks accounted for 43% of the words in the books (from a total of 68,593 words). Oral data from interviews with older people in Oslo show that the 50 top words account for 53% of the total number of words (Hanssen 1975).

But high-frequency words are small in number. Twaddell (1972) likens the frequency distribution curve of vocabulary to a ski jump: a few very high-frequency words, a small number of medium-frequency words, and a very large number of very-low-frequency words. A better image would be a ski jump where you never seem to reach the jump-off point itself, since between 40 and 50% of the words in texts of a certain length only occur once (Hvenekilde 1984). Once the learner has gotten to the intermediate and advanced levels, where massive vocabulary development should be a priority, who can predict which words the students should learn in order to cope with listening or reading texts he/she will encounter? As Twaddell (1972:273) put it, it is futile to choose a large number of words for students to learn during the intermediate level, as

many of the words may be at the very low-frequency end of the list where the predictability of occurrence or recurrence is very small.

Studies such as Golden & Hvenekilde's have questioned just how common many so-called high-frequency words are in different contexts (Golden 1984b). They looked at all words except the very low-frequency ones used in Norwegian physics, geography and history textbooks by dividing the words into three groups. The first group (labelled the "well-known" group) was defined by the researchers and consisted of words that appear in all beginners' textbooks, e.g. regular function words and basic everyday words for students in grades 4-9. Actually this was a very small group, consisting of only 176 rootlemmas from a total of 3,432 (a rootlemma is a group of lexemes having the same root, i.e. it includes inflectional forms and derivational forms). The next set, called the "technical" group, was defined by school teachers of these particular subjects, who were asked to mark the words on the lists which they would explain when teaching these subjects to a class of Norwegian students. The third set of words, the "non-technical" group, consisted of the remaining words. When looking at each of these groups across subject areas, the researchers found that for the "well-known" group, the overlap was, as expected, close to 100%. For the "technical" group it was, of course, very low, i.e. the subject-specific aspect of the vocabulary was very high. Of 1,060 rootlemmas, 93% occurred in only one subject. But the "non-technical" group was the interesting one. Of the 2,196 non-technical rootlemmas, 55% occurred in only one of the subject areas (19% occurred in all the subjects). This means that words not usually considered to be subject-specific are subject-specific after all, and the frequency of a word that students will encounter is often determined by the situation or context. Words such as *chalk* and *blackboard* may occur rarely in the overall use of English, but in the context of the classroom, they are much more frequent (Palmberg 1986, Wallace 1982). In short, the frequency with which a learner may encounter a word is often dependent upon the contexts and interests of the learner. Also, the decision about whether a particular vocabulary word is useful falls more to the student than the teacher or text.

Viberg (1980, 1981, 1985, 1988) has made a systematic description of Swedish vocabulary in various semantic fields and has thus provided another frame for analysing learners' vocabulary. In several studies, he and his colleagues compared learners' vocabulary with high-frequency words in different semantic fields. In one of his studies (Viberg 1985), he paid special attention to the verbs. His results certify how the learners (independent of their L1) actually use what he calls 'nuclear' verbs within the different semantic fields in order to communicate with a rather small vocabulary. The nuclear verbs consist of one or two verbs from each of his 7 semantic fields, and they all have a general meaning (Viberg 1985, 1988). A similar study regarding the use of adjectives is presented by Axelson (1991). She finds certain semantic fields to be dominant in the learner's adjective vocabulary, and these fields are also the most frequent among the 50 top adjectives in the *Nusvensk frekvensordbok* (the

Swedish frequency lists, Allen 1971). Within a given field, she finds an implication scale for the learners' adjectives parallel to Viberg's results for verbs.

These studies imply that there is a certain hierarchy in the order in which words within a certain semantic field are acquired. This, of course, has to do with word frequencies in the target language, but according to Kotsinas (1985), it also depends on the needs of the learner and the coverage of the word.

Learning how to learn vocabulary

Since much of students' vocabulary development can occur through incidental exposure to words outside the classroom, instruction at the intermediate and higher levels should also focus on teaching the second- or foreign-language learner *how* to learn vocabulary, instead of concentrating on teaching vocabulary itself. In language learning, there is a trend towards individualization and self-management (Carter & McCarthy 1988), and this trend should be reflected in the learning of second- or foreign-language vocabulary. Rivers (1983:127) stresses this point strongly: "Students have very personal semantic networks into which they process what they find to be useful". She states that the selection of words for storage is ultimately "an individual act of the learner" and that "students must learn how to learn vocabulary" (p. 130). In light of this, she argues that "students should be encouraged to seek the ways they find most helpful for expanding and maintaining their knowledge of the lexicon and the semantic potential of the new language" (p. 131).

There are a number of ways we can help students develop the knowledge and abilities to effectively learn vocabulary on their own as well as depth and breadth of vocabulary knowledge. We can help increase students' awareness of the ubiquity of polysemy in English. We can encourage students to learn words within collocational frameworks rather than as single items, since the use of words in such frameworks is what distinguishes native speakers and more successful learners from less successful ones (Linnarud 1986). We can also help students discover what particular learning and memory strategies work best for them. Above all, we should help students develop the abilities to expand their knowledge of the lexicon through exposure to and use of the second language in its natural context outside the classroom. To develop not only breadth but also depth of knowledge about concepts, semantic relations and associations, connotations, collocations, social and stylistic limitations, derivative possibilities, syntactic and morphological behavior, etc., students need repeated exposure to language in context. Just as it is for children learning their first language, the oral context in which second-language students learn new vocabulary is very important. Students should be helped to learn how to make the most of the rich extralinguistic context, the negotiation of meaning, and the opportunities to ask for clarification in interactional situations in order to learn vocabulary and language structure.

However, the written context can also be an important source of learning vocabulary, particularly in a foreign-language. Training students how to make the most efficient use of this resource should also be a priority in direct vocabulary instruction in the second-language classroom. To acquire the vocabulary resources that students need in order to live and function in a second-language environment, they need skills that can compensate for their lack of resources as they develop their vocabulary base; one such skill is being able to infer meaning from the context (Twaddell 1972). In an environment in which the pace of input can be controlled, such as in reading, students can develop this skill.

Does all this mean that we should just simply encourage our students to read more, particularly for their own pleasure, interest, or needs, in order to develop this skill? Reading for pleasure – that is, reading texts that are of interest or enjoyment to the students – can motivate L2 students to read if the process of reading itself is pleasurable, i.e. not so demanding that it becomes a laborious chore to get through a passage or selection. In order for reading for any purpose to be a rewarding and enlightening experience, reading skills need to be higher than the level at which we generally find many L2 students. In second- or foreign-language learning, reading is often the poor sister, like Cinderella in the fairy tale: usually in the service of someone (something) else. In some second-language classes and in many foreign-language classes, reading often serves the purpose of illustrating grammatical points and structures. Many second- or foreign-language students have learned how to read through the Grammar-Translation method, involving laborious analysis and translation of text. As a result, to some students reading can be a difficult and boring task in which they feel that they must interpret and translate every word in order to understand the text. This kind of analysis and translation may lead to direct vocabulary study and learning, but how widely do students with such limited reading skills and purposes actually read? Reading of this sort rarely contributes to the large amount of exposure to words in written contexts which is conducive to incidental vocabulary development.

Reading should instead be utilized in the classroom for the sake of developing second-language reading skills and strategies, which should be one of the priorities of a second-language class, so that students will be motivated to read on their own outside of class and will have the cognitive processing capacity to effectively learn words from the context as they process the information in a text. Some students may have to unlearn some of their perceptions about reading in a second language that they have picked up from prior experiences, such as the notion that to comprehend a text, they have to understand every single word. Some students have a tendency to stop when they encounter an unfamiliar word and not continue until they have found its precise meaning (usually by looking it up in a bilingual dictionary). In order for students to develop the skill of determining the meaning of a word from its context, they must learn to tolerate having a fuzzy or imprecise understanding of a word, to take a chance on misunderstanding a word, and to not panic when encounter-

ing an unknown word and automatically reach for the dictionary (Twaddell 1972). It requires a certain amount of self-confidence to be able to infer the meaning of a word from its context or skip it because it is not important, and this seems to be rather rare in the beginning period of learning a new language.

For our students to learn how to learn words, we as teachers can help by teaching them how to use context to understand and learn words. Sternberg (1987) advocates teaching people the processes, cues, and moderating variables for learning words from context. Three processes he identifies are:

- 1) selective encoding - separating relevant from irrelevant information in order to formulate a definition
- 2) selective combination - combining relevant cues into a definition
- 3) selective comparison - relating new information about a word to old information stored in memory.

Along with these processes, he identifies eight context cues to which these processes can be applied: temporal, spatial, value, stative descriptive, functional descriptive, causal/enablement, class membership, and equivalence cues. The moderating variables that determine the ease or difficulty of applying the processes to the cues are:

- 1) the number of occurrences of the unknown word
- 2) the variability of contexts in which multiple occurrences of the unknown word appear
- 3) the importance of the unknown word to understanding the context in which it is embedded
- 4) the helpfulness of surrounding context in understanding the meaning of the unknown word
- 5) the density of unknown words
- 6) the usefulness of previously known information in cue utilization.

(For more detailed information, see Sternberg 1987: 91-4.)

In addition, using the internal context of words, such as root stems, prefixes, suffixes etc., to infer their meaning is an important strategy which we can help our students develop, especially those whose native languages are similar to English. The processing of such linguistic cues may even lead to increased learning and retention of the words. Relying on evidence from Jacoby et al. (1979) that decision difficulty during initial processing results in a distinctive conceptual representation of the word and a distinctive memory trace which ensures better retention, Haastrup (1989) hypothesizes that words inferred through the use of such linguistic cues are better retained than words that are inferred on the basis of contextual cues. In an empirical study of the way Danish learners of English guess the meaning of unfamiliar English words, she found that high-proficiency groups were more flexible in using cues from

different sources and in adapting their processing to words with varying types and amounts of linguistic and contextual cues. Though there are other factors such as attention, interest, and motivation which are involved in vocabulary learning, cognitive factors such as depth of processing and flexibility in adapting processing to take advantage of all available cues are important, and we need to encourage learners to develop such abilities.

Conclusion

Training in such strategies, cues, processes, variables, etc. (see Nattinger 1988, and Nation & Coady 1988 for other strategies and cues) can help our students a great deal towards developing the skill of inferring meanings and learning words from context. Rather than assuming that our students will develop this skill on their own, this type of training should become a part of vocabulary instruction in the second-language classroom. Of course, individual students may have individual preferences for ways to study and learn vocabulary on their own (Hatch 1983, Rivers 1983), and no one can or should force students to adopt a particular method as their own independent learning style. Other knowledge and skills, such as how to make the most efficient use of dictionaries, are vitally important, as there are often times when the context is of little or no use in helping students infer the meaning of words. Anything that increases the student's exposure to words is helpful, since repeated exposure to a word is important in incorporating it into their active vocabulary (Summers 1988). Helping students develop the skill of inferring the meanings of words from context, as well as reading skills in general, is not only useful for vocabulary development but also for improving reading comprehension. Some students who may have used or continue to use strategies for learning words from the context in their first language (as children do) may have been conditioned by second-language classroom instruction to learn through other methods, or they may find it difficult to use context in the second language due to cognitive processing constraints or other factors – it's difficult to choose to use a method of expanding vocabulary resources if one is not competent in it. As well as improving their reading comprehension in general, helping our students develop the skill of inferring the meanings of words from the context will at least give them the option of learning vocabulary this way, of developing not only breadth but also depth of vocabulary knowledge. Which way students choose to learn vocabulary is up to them, but at least they will have a choice.

References

- Adams, M. J. & Collins, A. (1979) A schema-theoretic view of reading. In R. Freedle (ed.), *New directions in discourse processing*. Norwood, NJ: Ablex. 1-22
- Allén, S. (1971) *Nusvensk frekvensordbok basera på tidningstext. 2. Lemman*. Almqvist & Wiksell: Stockholm.
- Anderson, R. C. & Freebody, P. (1985) Vocabulary knowledge. In H. Singer & R. B. Ruddell (eds.), *Theoretical models and processes of reading*. Newark, DE: International Reading Association. 343-371.
- & Shifrin, Z. (1980) The meaning of words in context. In R.J. Spiro, B.C. Bruce & W. F. Brewer (eds.), *Theoretical issues in reading comprehension*. Hillsdale, NJ: Lawrence Erlbaum Associates. 331-348.
- Axelsson, M. (1991) Vuxna Sv 2-inlärare lär sig adjektiv. In G. Tingbjörn (ed.), *Andra symposiet om Svenska som Andraspråk*. Göteborg universitet. Skriptor forlag. 316-37
- Beck, I. L., Perfetti, C. A. & McKeown, M. G. (1982) Effects of long-term vocabulary instruction on lexical access and reading comprehension. *Journal of Educational Psychology* 74: 506-21.
- , McKeown, M. G. & Omanson, R. C. (1987) The effect and uses of diverse vocabulary instructional techniques. In M. G. McKeown & M. E. Curtis (eds.), *The nature of vocabulary acquisition*. Hillsdale, NJ: Lawrence Erlbaum Associates. 147-63.
- Carter, R. & McCarthy, M. (1988) Developments in the teaching of vocabulary: 1945 to the present day. In R. Carter & M. McCarthy (eds.), *Vocabulary and language teaching*. New York, NY: Longman. 39-59.
- Curtis, M.E. (1987) Vocabulary testing and vocabulary instruction. In M. G. McKeown & M. E. Curtis (eds.), *The nature of vocabulary acquisition*. Hillsdale, NJ: Lawrence Erlbaum Associates. 37-51.
- Færch, C., Haastруп, K. & Phillipson, R. (1984) *Learner language and language learning*. Copenhagen: Gyldendals sprogbibliotek.
- Golden, A. (1984a) Hva vil det si å kunne et ord? In A. Hvenekilde & E. Ryen (eds.), *Kan jeg få ordene dine, lærer?* Oslo: Cappelen. 160-9.
- (1984b) Fagord og andre ord i o-fagsbøker for grunnskolen. In A. Hvenekilde & E. Ryen (eds.), *Kan jeg få ordene dine, lærer?* Oslo: Cappelen. 170-5.
- & Hvenekilde, A. (1983) *Rapport fra prosjektet lærebokspråk*. Senteret for språkpedagogikk, Universitetet i Oslo.
- Graves, M. F. (1987) The roles of instruction in fostering vocabulary development. In M. G. McKeown & M. E. Curtis (eds.), *The nature of vocabulary acquisition*. Hillsdale, NJ: Lawrence Erlbaum Associates. 165-84.
- Grosjean, F. (1982) *Life with two languages*. Boston, MA: Harvard University Press.
- Haastруп, K. (1989) The learner as word processor. In P. Nation & R. Carter (eds), *AILA Review* 6: 34-46.

- Haggard, M. R. (1986) The vocabulary self-collection strategy: using student interest and world knowledge to enhance vocabulary growth. *Journal of Reading* 29.7: 634-42.
- Hanssen, E. (1975) Ordforrådet i naturlig talespråk. *Norskraft* 1. Institutt for nordisk språk og litteratur: Universitetet i Oslo.
- Hatch, E. M. (1983) *Psycholinguistics: a second language perspective*. Cambridge, MA: Newbury House Publishers.
- Hvenekilde, A. (1984) Om ord, ordforråd og læring av ord. In A. Hvenekilde & E. Ryen (eds.), *Kan jeg få ordene dine, lærer?* Oslo: Cappelen. 140-59.
- Jacoby, L. L., Craik, F. J. M. & Begg, J. (1979) Effects of decision difficulty on recognition and recall. *Journal of Verbal Learning and Verbal Behavior* 18: 585-600.
- Johansson, S. (1978) Studies in error gravity. Native reactions to errors produced by Swedish learners of English. *Gothenburg Studies in English* 44.
- Johnson, D. & Pearson, P. D. (1984) *Teaching reading vocabulary*. New York: Holt, Rinehart & Winston.
- Kang, H. W. (1991) *The open window: Opening windows into the process of reading in a second or foreign language*. Unpublished manuscript, University of California, Berkeley.
- Kotsinas, U.-B. (1985) *Invandrare talar svenska*. Malmö: Liber förlag.
- Linnarud, M. (1986) *Lexis in composition. A performance analysis of Swedish learners' written English*. Malmö: Liber Förlag.
- McLaughlin, B. (1987) *Theories of second-language learning*. New York, NY: Edward Arnold.
- Meara, P. (1980) Vocabulary acquisition: a neglected aspect of language learning. *Language Teaching and Linguistics Abstracts* 13: 221-46.
- McKeown, M. G., Beck, I. L., Omanson, R. & Perfetti, C. A. (1983) The effect of long term vocabulary instruction on reading comprehension: a replication. *Journal of Reading Behavior* 15: 13-8.
- , Beck, I. L., Omanson, R. & Pople, M. T. (1985) Some effects of the nature and frequency of vocabulary instruction on the knowledge and use of words. *Reading Research Quarterly* 20: 522-35.
- Nagy, W. E. & Anderson, R. C. (1984) The number of words in printed school English. *Reading Research Quarterly* 19: 304-30.
- & 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*. Hillsdale, NJ: Lawrence Erlbaum Associates. 19-36.
- Nation, I. S. P. (1990) *Teaching and learning vocabulary*. New York, NY: Newbury House.
- & Coady, J. (1988) Vocabulary and reading. In R. Carter & M. McCarthy (eds.), *Vocabulary and language teaching*. New York, NY: Longman. 97-110.

- Nattinger, J. (1988) Some current trends in vocabulary teaching. In R. Carter & M. McCarthy (eds.), *Vocabulary and language teaching*. New York, NY: Longman. 62-82.
- Ogden, C. (1929) *Basic English*. London: Kegan Paul, Trench and Nebner.
- Omaggio, A. C. (1986) *Teaching language in context: proficiency-oriented instruction*. Boston, MA: Heinle & Heinle Publishers.
- Palmberg, R. (1986) Vocabulary teaching in the foreign-language classroom. *English Teaching Forum*, July 1986: 15-24.
- Pressley, M., Levin J. R. & Delaney, H. D. (1982) The mnemonic keyword method. *Review of Educational Research* 52: 61-72
- Levin, J. R. & McDaniel, M. A. (1987) Remembering versus inferring what a word means. In M. G. McKeown & M. E. Curtis (eds.), *The nature of vocabulary acquisition*. Hillsdale, NJ: Lawrence Erlbaum Associates. 107-28.
- Richards, J. C. (1976) The role of vocabulary teaching. *TESOL Quarterly* 10.1: 77-89
- & Rodgers, T. S. (1986) *Approaches and methods in language teaching*. New York, NY: Cambridge University Press.
- Rivers, W. M. (1981) *Teaching foreign-language skills*. Second edition. Chicago: University of Chicago Press.
- (1983) *Communicating naturally in a second language: theory and practice in language teaching*. New York: Cambridge University Press.
- & Melvin, B. (1977) If only I could remember it all! Facts and fiction about memory in language learning. In M. Burt, H. Dulay & M. Finocchiaro (eds.), *Viewpoints on English as a second language*. New York, NY: Regents Publishing Company, Inc. 162-71.
- Rumelhart, D. E. (1980) Schemata: the building blocks of cognition. In R. J. Spiro, B. C. Bruce & W. F. Brewer (eds.), *Theoretical issues in reading comprehension*. Hillsdale, NJ: Lawrence Erlbaum Associates. 33-58.
- Sternberg, R. J. (1987) Most vocabulary is learned from context. In M. G. McKeown & M. E. Curtis (eds.), *The nature of vocabulary acquisition*. Hillsdale, NJ: Lawrence Erlbaum Associates. 89-106.
- Summers, D. (1988) The role of dictionaries in language learning. In R. Carter & M. McCarthy (eds.), *Vocabulary and language teaching*. New York: Longman. 111-25.
- af Trampe, P. (1984) Experiments in vocabulary learning. *Scandinavian Working Papers on Bilingualism* 3: 20-33.
- Twaddell, W. F. (1972) Linguists and language teachers. In K. Croft (ed.), *Readings on English as a second language*. Cambridge, MA: Winthrop Publishers, Inc. 268-76.
- Viberg, Å. (1980) Tre semantiska fält i svenskan och några andra språk. 1. Kognitiva predikat. 2. Perceptionsverbens semantik. 3. Emotiva predikat. *SSM Report* 7. Institutionen för lingvistik: Stockholm universitet.
- (1981) En typologisk undersökning av perceptionsverben som ett semantisk

- fält. *SSM Report 8*. Institutionen för lingvistik: Stockholm universitet.
- (1985) Lexikal andraspråksinläring. *SUM-rapport 2*. Centrum för tvåspråkighetsforskningen: Stockholms universitet.
- (1988) Ordförråd och ordinläring. Några utgångspunkter för en studie av hur ordförrådet lärs in. In K. Hyltenstam & I. Lindberg (eds), *Första symposiet om svenska som andraspråk. Vol. 1*. Centrum för tvåspråkighetsforskningen: Stockholms universitet. 215-33.
- White, H., Vierma, G., Kang, H. W., Krashen, S. & Tritica, D. (1987) Attitudes toward vocabulary acquisition among college students: are students aware of the power of reading? *Reading Improvement 24.4*: 273-7.
- Wilkins, D. A. (1972) *Linguistics in language teaching*. London: Arnold
- Wong-Fillmore, L. (1979) Individual differences in second language acquisition. In C. J. Fillmore, D. Kempler & W. S-Y. Wang (eds.), *Individual differences in language ability and language behavior*. New York: Academic Press. 203-28.

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