DICTIONARIES AND LANGUAGE LEARNING

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Dictionaries for language learning should make use of research on vocabulary and vocabulary learning to make it easier for learners to gain new vocabulary. The changes necessary to do this include indicating word frequency, providing useful etymological information and definitions which use this, giving the underlying concepts of words, and changing the format of dictionary entries.

The purpose of this article is to show that there is a difference between dictionaries for language learners and dictionaries for language learning, and to show that with only small changes it is possible to make a dictionary which makes learning a language easier.

LEARNERS' DICTIONARIES

Dictionaries for language learners typically take account of the level of proficiency of language learners and the difficulties they may experience through coming to learn a language while already being very proficient in their first language. Thus, such dictionaries usually provide definitions in controlled vocabulary, concentrate on the more frequent words of the language, and provide systematic information about pronunciation and grammar. They function as sources of useful accessible information about the language.

DICTIONARIES FOR LEARNING

Dictionaries for language learning should provide information about the language but they should also help learners to learn. Almost a century of research on vocabulary learning has provided very useful information about the nature of vocabulary and how it can be learned. Makers of dictionaries for learners of other languages should take account of this research and put it to use in the design of their dictionaries. If they do not, they are providing the learners with information but are withholding the means for learners to put that information to use.

The following sections of this paper will examine the findings of research on vocabulary and vocabulary learning and then suggest how these findings can be

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incorporated into dictionaries in order to make them truly dictionaries for language learning.

RESEARCH ON VOCABULARY

The research discussed in this section relates particularly to English but studies of other languages suggest that much of it, especially the statistical information on vocabulary frequency, applies to all natural languages.

Low frequency words. Numerous studies of vocabulary frequency indicate that by far the greatest number of words in a language occur very infrequently. Carroll, Davies and Richman's (1971) study of a 5,000,000 word corpus found that 40.4% of the 86,741 different words occurred only once. Repetition in context is clearly not going to be the means by which such words are learned. Other help is needed.

High frequency words. In addition, frequency studies show that a relatively small number of words, certainly 5,000 or less, occur quite often. Because they occur quite often they account for a very large proportion of the words in any spoken or written text. To take the most extreme example, if you learn the word the then you know 7% of the words in a text, because the occurs around seven times in every 100 words of text. If you learn this word then clearly you are going to get a good repayment for your learning effort. This is not limited to words like the however. Among the most frequent 5,000 words of English are words like ornament, statement, congratulate, moral, substance, and external. All these examples are taken from the Cambridge English Lexicon by Hindmarsh (1980). Although these words by no means occur as frequently as the in the ordinary use of English, the chances of meeting them again after having learnt them are high. That is, the benefit in opportunity to use the word when compared with the cost of learning the word is much greater than the cost-benefit of learning less common words. Swenson and West (1934 p.8) expressed it in this way "Effort must be expressed in terms of the accomplishment aimed at." If learners knew which words gave the greatest benefit for the cost of learning, they could then be efficient in their vocabulary learning.

Word parts. Frequency studies of word building in English (Roberts, 1965) show that approximately 66% of the words not in the most frequent 2,000 words of English come from French, Latin or Greek. This means that large numbers of English words can be broken into parts such as prefix, stem, or suffix. Here are all the French, Latin and Greek derived words from a 93 word paragraph chosen at random from an ESP journal: contrast, telephone, conversation,

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expected, identify (3x), supplied, system, prologue (2x), information, customize, particular, recipients, discussion. It is not difficult to see that for most of these words, knowing the meaning of the parts of the words would (1) make it easier to remember the meanings of the words and (2) give access to a much larger group of words. For example, knowing that con means "together" will help in learning the meaning of contrast "put two or more things together to see their differences". In addition there are many words that use the prefix con- meaning with or together. Studies by Stauffer (1942) and Bock (1948) show that a very small number of prefixes occur in a very large number of words. It would thus be necessary to learn only a few prefixes, about 20, in order to have a great help in learning many, many words. Learners of course would need help in seeing which words could be broken into parts and what these parts mean.

RESEARCH ON VOCABULARY LEARNING

This section looks at research on how learners can be helped to memorize new vocabulary. It looks at research on the keyword technique and words in sentence contexts, and it discusses the unresearched area of the effect of learning the underlying concepts of words.

Keyword. The keyword technique is one of the most thoroughly researched areas of vocabulary learning. Reviews of research in 1981 (Paivio and Desrochers) and 1982 (Pressley, Levin and Delaney) included almost fifty studies and there have been many more since then. In almost every study the keyword technique has been shown to be far superior to any other rote method of vocabulary learning. The keyword technique involves these steps.

1. Think of a word you already know from your first language or the second language which sounds like all or the first part of the word you want to learn.

For example, if you want to learn node then think of a first language word or a known English word that sounds like node or the beginning of node: let us choose know. This word, know, is your keyword.

2. Then think of an image combining the meaning of the new word and the meaning of the keyword. For example, node means "a place where branches or parts of a system or network meet or join" so the image could be a face with a knowing smile drawn on the node of a plant.

In order to use the keyword technique learners need to be able to think of keywords and think of a useful image. Using word parts is a very sophisticated use of the keyword technique. In this case, the keyword is the prefix or perhaps the stem. The image is not something manufactured but is in fact the true etymological connection between the meaning of the word part and the meaning

of the word. For example, the keyword for exhume would be ex (meaning "out, away") and the connection between the meaning of the word exhume and the keyword ex- is the etymological connection - "take a body out of the ground". In order to use this most important application of the keyword technique it is necessary to know (1) the new word contains parts, (2) the meaning of the parts, (3) the way the meaning of the parts relates to the meaning of the whole word.

Contexts. Most research on learning vocabulary in sentence contexts has been done with native speakers of English learning English words. Gipe (1979) and Crist (1981) found that learning words in sentence contexts gave superior results over learning from definitions. This was particularly true if the learning was tested using sentence contexts, which is somewhat like the use learners will have to make of learned vocabulary. Crist concluded "acquiring word meaning through contexts results in a greater degree of generalization to new contexts than would obtain if subjects encountered an unfamiliar context after exposure to definitions" (p. 276). Clearly, there are advantages in having sentence contexts which encourage learners to make inferences.

Underlying concept. Dictionaries tend to increase the number of entries or meanings for words rather than decrease them. For example, different entries are made for different parts of speech of a word. Different uses are carefully distinguished such as for the word name, to give a name to something, to say someone's name, and to name a successor. This has the effect of increasing the number of items to be learned. If the distinctions also correspond to different first language words, the problem is made worse. To make the learners' job easier, a dictionary should try to reduce the number of learning items so that the learners have less to learn. This can be done by providing definitions which cover as many different uses of a word as possible. For example, name could be defined as "(make use of) the word(s) that someone or something is known by, in order to..." with the various distinctions used as examples or applications of the general definition.

Let us now apply these research findings to the design of dictionaries.

DESIGNING DICTIONARIES FOR LEARNING

If dictionaries are based on the findings of research on vocabulary and vocabulary learning, they should contain the following information.

Information about the usefulness of words. The dictionary should contain some indication of word frequency. This could be done by using numbers (as in

the Cambridge English Lexicon) for the high frequency words of English, perhaps the most frequent 5,000 or so words and having no indication for the remaining low frequency words. Any word with a number would be worth making an effort to learn. Other words could be left to the learners' discretion. This would be a very small change to about one-quarter or less of the words in a dictionary.

Contexts for the words. Wherever possible the dictionary should provide sentence contexts for words in order to enrich the chances of learning. Most learners' dictionaries already do this. It would be advantageous if these sentences preceded the definition to encourage guessing from context.

Helpful etymology. Where it is helpful, the dictionary should include simple etymological information. Such information is helpful where the meanings of the word parts can be related to the meaning of the word. Thus, providing etymological information for despicable is useful. But providing it for destine is not useful as it is difficult to see how the meanings of the parts relate to the present meaning of the whole word. A useful addition to this kind of information is an indication of related words. So the entry for rank should indicate its relationship to arrange. This type of information allows learners to connect previous learning to the learning of the new items. Some dictionaries, but not learners' dictionaries, already provide some information of this kind, but it needs to be presented more accessibly, with learning in mind rather than etymological accuracy. This would result in only a small addition to learners' dictionaries.

Definitions that relate to word parts. The definitions given should be worded so that they contain the meaning of the parts of the word. Depreciate for example in the Longman Dictionary of Contemporary English (1987) is defined "to fall in value". A slight change in this definition to "to go down in value" includes "down", the meaning of the prefix de-. This type of change does not change the size of the entry for this item.

Keywords. Each dictionary entry could suggest a keyword for that item. This would encourage the use of this very effective mnemonic technique. Research on the keyword technique, however, has shown that, at least for some learners, it is better if they find their own keywords, thus I do not feel very strongly about the inclusion of this information. Its inclusion however would have a positive effect on learning, even if only in encouraging the use of the technique rather than helping learners with each word. It would result in only a one word addition to each entry for words that did not have etymological information.

Underlying concepts. Definitions should cover as many uses of the word as possible, treating different uses as examples of the underlying concept rather

than as separate meanings. This would have the added benefits of encouraging learners to be flexible in their interpretation of words in context and would encourage the development of concepts that are not poor translations of first language concepts. This change to dictionaries would not require extra space. In conjunction with definitions that relate to word parts, it may result in some slightly awkward definitions, but when this is weighed against the considerable help it would give to learning, such awkwardness is readily acceptable. If definitions were given in sentence form as in the COBUILD dictionary, then there will probably be no awkwardness at all. Listing related forms of the word will also help learners generalize from the entry.

The format of entries. The format of each entry should help learning. For example, the definitions might come after the examples to encourage guessing from context. The etymology would be pointed out before the definition is given. Possible formats should be researched using introspection techniques, getting learner reaction, checking the skills needed to use the dictionary, and considering adaptability to computer use. This is what an entry adapted from the Longman Dictionary of Contemporary English (1987) might look like.

ex.pand /ik'spænd/ v [UWL] (ex- out, -pand spread) Water expands when it freezes. | The company has expanded its operations in Scotland by building a new factory there. | the rapidly expanding market for computers | I don't quite follow your reasoning. Can you expand (on it)? | You'll have to expand your argument if you want to convince me. |

When you expand something or when something expands, it spreads out to become bigger by growing in size or number, or by adding more detail.
expandable, expanse, expansion, expansive

[UWL] is a frequency indicator. It signals that the word is in the University Word List (Xue and Nation, 1984) and is therefore a very useful word for learners going on to upper secondary or tertiary study.

Computer use. The dictionary should be available in both book form and on computer disc. This would allow the dictionary to be used in many ways with other computer materials. For example, learners could call up the dictionary examples of a word they meet while reading to help them guess from context. If the dictionary was on a disc, it would allow reordering of the dictionary or selection from it according to frequency level, word parts, grammatical pattern and collocations. The dictionary could thus be a useful basis for making learning materials or tests.

The computer version of the dictionary could gradually reveal information so that an entry could be used as an exercise. Here are some examples.

(i) The example sentences are shown and the learner has to decide what grammatical pattern the word fits into. Then the answer is provided.

(ii) The example sentences are shown and the learner tries to guess the meaning. Then the definition or a choice of four definitions is provided (three taken from other words in the dictionary).

CONCLUSION

The aim of this article has been to suggest that we need to change the purpose for which dictionaries are prepared. They should no longer just be sources of information, and research shows that they are not well-used sources (Newbach and Cohen, in press), but should be a learning resource with learning considerations systematically taken into account. As we have seen, this does not require enormous changes to existing learners' dictionaries. If these small changes are made then dictionaries, instead of being useful adjuncts to a course, can become core texts.

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