

Finestra I

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Myths about vocabulary acquisition

Vrai ou faux? Voilà la question.
«Les listes de vocabulaire sont inutiles, parce qu'il faut toujours apprendre des mots en contexte, de préférence en déduisant le sens des mots à partir du contexte. De cette façon-là, les chances de retenir les mots sont optimales. Heureusement, il n'est pas nécessaire d'apprendre beaucoup de mots: quand on connaît les deux mille mots les plus fréquents d'une langue, on comprend déjà 80% des mots d'un texte moyen. Finalement, il va de soi qu'il ne faut pas tester séparément le vocabulaire des apprenants, parce que l'évaluation doit s'effectuer au niveau des compétences linguistiques (compréhension de l'écrit et de l'oral, production écrite et orale), et non pas au niveau des mots.»
Dans cet article j'essaie de revoir quelques mythes concernant l'acquisition du vocabulaire.

In the past twenty-five years, there has been an increased interest in vocabulary acquisition and studies abound, exploring different aspects. Thus, language teachers who keep abreast of the professional literature will have come across the majority of the following ideas.

1. Some words occur far more often than other ones. Consequently, knowing a relatively small number of words takes you far.
2. Word lists are actually only of limited value, as many words are forgotten in the course of time.
3. Words that belong to the same lexical set, for example colours, animals and clothes, are best learned together, because this corresponds to the way the words are stored in our mental lexicon.
4. Context helps in retaining words. Therefore, words should always be learned in context.
5. Words whose meanings have been inferred with the aid of the context are retained better. That is, during the inferencing process the learner is actively processing the word and its meaning, more than when the meaning is given to him.
6. There is a clear distinction between understanding a word (receptive knowledge) and being able to use a word (productive knowledge). Productive learning is more difficult, but has the advantage of the words being better retained.
7. The aim of foreign-language teaching is not vocabulary knowledge, but language proficiency (listening, speaking, reading, and writing). Therefore, vocabulary knowledge should not be tested separately, as the learner's vocabulary is automatically assessed when his language skills are tested.

However, there is a problem… That is, the ideas mentioned above are not entirely correct, and some of them are even totally incorrect. In this article, I will try to make clear what is incorrect: the *myths* (or half-truths) about vocabulary acquisition. Furthermore, I will explain how it really works: the *facts*.

Myth 1: "Knowing a relatively small number of words takes you far."
Research has shown that languages are in certain respects quite economically structured. That is, in every language there is a limited number of words that occur very frequently, and a great number of words that occur relatively infrequently. As a result, knowing the two thousand most frequent words of a language – the exact number may vary slightly per language – enables you to understand already about 80% of the words of an average text (Nation & Waring, 1997).
The question is how well you understand a text of which you know 80% of the words. In order to get an impression of this, Figure 1 shows an English text from which the 20% least frequent words have been omitted, leading to a text coverage level of 80%. (see Figure 1)

At this level of text coverage, there is no adequate text comprehension yet. Only at a text coverage level of 95%, the majority of the readers will understand a text reasonably well (Laufer, 1989). For such a text coverage, you need a knowledge of 3,000 to 5,000 word families, a word family being defined as a base word with its inflected forms and transparent derivations (e.g. *think, thinking, thinker*) (Nation & Waring, 1997). For university studies, however,

Figure 1: Text comprehension at a text coverage level of 80% (Nation, 1990: 242-243)

In 1978/1979 New Zealand produced 9.15 million _____ meters of _____ logs (_____ _____ _____) of which 59 percent was _____ (as newsprint, _____, sawn _____, logs, and so on). Productive _____ is expected to remain at about this level throughout most of this _____. But based on the _____ of wood which will become _____ from existing forests and planned new plantings, production will progressively increase to 20 million _____ meters a year by the turn of the century.

If _____ planting rates are _____ with planting _____ satisfied in each _____ and the forests milled at the earliest opportunity, the _____ wood supplies could further increase to about 36 million _____ meters _____ in the period 2001-2015. The additional _____ supply should greatly _____ _____ _____, even if much is used for _____ production.

Even if used in an _____ form, the increasing wood supplies will _____ a larger _____ force, an improved roading network, and _____ _____ and _____ _____. If the trees are to be _____ then certain _____ must be made. They will include _____ in:

- logging machinery and _____;
- logging trucks, and other _____ _____ for the _____ of _____ products;
- _____ and _____ roads (or rail or coastal shipping _____ where _____);
- _____ _____.

a knowledge of 10,000 word families would be necessary (Hazenberg & Hulstijn, 1996).
Therefore, the conclusion should be that the idea that the knowledge of a couple of thousand words takes you far is a myth. The fact is that this knowledge takes you a long way, but not far enough.

Myth 2: "Word lists are of limited value."

Word lists (lists of words to be learned) have all kinds of disadvantages, as we know from experience. First, they are not particularly interesting to learn (although this argument does not hold for certain types of learners). Second, words that have been learned from a list are easily mixed-up, because they do not have a context – I will return to that later on. Third, words that are 'known' within the list may not be known outside the list, in actual usage.
Are these reasons to advise against using word lists? Certainly not. The fact is that word lists in principle contain the most frequent words from frequency lists, lists in which the words have been ordered on the basis of their frequency in actual language use (e.g. West, 1953). This basic vocabulary should absolutely be known by the learners because any gap in this basic vocabulary can cause problems. Therefore, word lists and frequency lists are excellent checklists for determining which important words learners do not know yet.
Does this imply that learners should also learn those words with the aid of such a list? No, that is not sensible. It is much better to put those words – only the words that the learners do not know yet – on cards. The simplest way is to put the foreign-language word on one side (e.g. the French word *une canne*) and the translation (*a walking stick*) on the other. The advantages of learning words with the help of these word cards are the following: (1) learners do not at once see the translation of the word to be learned, which stimulates them to first think before checking whether they know the word ('learning by testing'); (2) the words learners know are put aside, so that they can concentrate on those words they do not know yet; (3) the order of a series of words to be learned is flexible, so that the position of a word to be learned in a series does no longer wrongly offer any help.
To those who would like to go a step further, I suggest the so-called 'hand computer' (Leitner, 1972; Mondria & Mondria-de Vries, 1994): a deck of cards with a sophisticated repetition system on the basis of ever bigger intervals, guaranteeing optimal long-term retention (see Figure 2). And those who prefer a computer program based on the same principles, can find all kinds of information at: http://de.wikipedia.org/wiki/Lernkartei-Software. (see Figure 2)

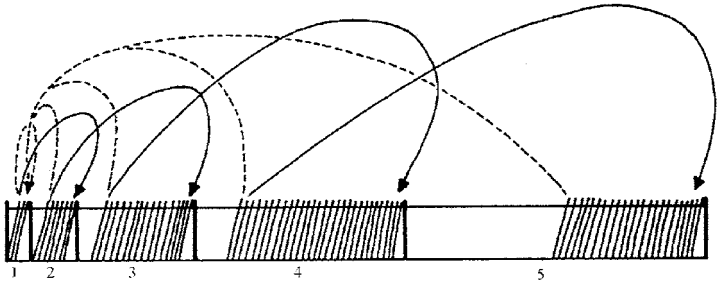
Myth 3: "Presenting words in semantic sets facilitates learning."

In several coursebooks and vocabulary books, new words are presented in semantic sets: groups of words that are semantically related and share a common superordinate, such as colours, animals, and clothes. It is often thought that this way of presenting related words together facilitates learning. And indeed, when we think of the mental lexicon, the dictionary in our head, this seems logical. Calling into mind one of the members of a semantic set, for example an article of clothing, will call into mind other members of the set as well. Thus, the members of a semantic set are closely linked in our mind, so it seems logical to learn them together.
Research, however, has shown that learning words in semantic sets is not the best option. On the contrary, related words are more easily confused (interference) and learning them takes considerably more time than learning unrelated words (Tinkham, 1993, 1997; Waring, 1997) (see Table 1).

Does this imply that language teachers should never make use of semantic sets? Certainly not. Working with sets of semantically related words can be quite useful, but only at a later stage. It is only when learners already know

Figure 2: Hand computer (Mondria & Mondria-de Vries, 1994)

The hand computer is a deck of cards with a sophisticated repetition system. This deck of cards – in its simplest form a shoebox – is divided into five compartments of increasing size (with a width of 1, 2, 5, 8 and 14 cm respectively). Another possibility is taking a series of five audio-cassette boxes, but in that case there is no increased size of the compartments. The advantage, however, of this shape is that the material can easily be carried around, and can be practiced at any spare moment.



Trajectory of a known word
Trajectory of a word not known or no longer known

How does one work with the hand computer? Every word to be learned is put on a card: the foreign-language word on one side, the translation on the other (preferably in a different colour, so that it is immediately clear which is the front and which is the back). The cards are placed in compartment 1 (30 40 cards at the most), after which they are practiced. The words the learner knows are moved on to compartment 2; the ones the learner does not know are put in the back of compartment 1 again. When there are only a few words left in compartment 1, the compartment is replenished with 30 40 new words, and words can be learned and moved on again. After this has been repeated a few times, compartment 2 becomes filled up, and the time is ripe to repeat the words in compartment 2: the ones the learner still knows go into compartment 3; the ones that are immediately recalled go back into the back of compartment 1. In this way about the breadth of a finger is cleared out of compartment 2. This is also the principle of the hand computer in a nutshell: whatever is 'known' goes into the next compartment; anything 'not known/no longer known' should go back into compartment 1.
After some time compartments 3 and 4 will become filled up. In that case the same procedure is adopted as in compart¬ment 2. When eventually compartment 5 also becomes filled up and room is to be made there too, the learner may in principle throw the cards away if he or she still knows them: for by then the words have been seen so often, and so much distributed in time at that, that we may speak of real knowledge. An alternative possibility is to work with a compartment 5 that is so big that it need not be cleared out. In this case the cards may be kept and occasionally the learner can draw a sample of ten cards from it in order to see if the words are still known. In this way, compartment 5 contains the learner's complete word knowledge.

Table 1: Learning load of related and unrelated words (Waring, 1997)

Words to be learned	*# Learning trials required*
Related	9.6
Unrelated	6.5

several words of a set that it makes sense to put these words together and to examine what the learners know of them exactly, and subsequently to add new words or new shades of meaning.

Myth 4: "Words should always be learned in context."

There is little doubt about the helpfulness of contexts such as a sentence or a text in the process of learning words. A context not only shows the word and its use, but it can also help in retaining a word and its meaning (Mondria, 1996). For example, someone can learn the French word *canne* with the help of the sentence *Le vieil homme marche à l'aide d'une canne.* When, later on, the learner does not remember what the word *canne* means, he or she may remember that the word occurred in a sentence with *vieil homme* and/or *marche*, which reminds him or her of the meaning of *canne*. Thus, context can help in retaining words, and therefore it seems logical to argue that words should always be learned in context.
However, there are two caveats to this 'rule of thumb'. First, many (concrete) words can be learned efficiently without context. Presenting such words without a context – for example when a learner asks for them – can be a practical method that prevents the teacher from having to invent an interesting or useful context, which subsequently has to be written down by the learner and so on, each time.
Second, and this is actually the main point, learning a word in a particular context may result in a learner knowing the word only in that context, or worse: not even recognizing the word outside that context. Every teacher will be familiar with the learner who says, "In the original sentence, I know what the word means, but now that you have put the word in another sentence, I do not know the meaning

anymore…" In order to prevent this kind of situation, it should be made clear to the learner that in the end the words have to be known without the original context. Therefore, in the final stage of the learning process, the context should not be (immediately) visible anymore. Thus, the word should be 'decontextualized' as it were: the physical (textual) association between the word and its context should eventually become a mental association in the learner's mind.
Incidentally, this process of 'contextualizing-decontextualizing' can be excellently realized with the help of word cards, namely by putting on the front the word to be learned (e.g. *une canne*), and on the back on top the context sentence (e.g. *Le vieil homme marche à l'aide d'une canne.*) and at the bottom the translation (*a walking stick*). In this way, the learner has the context at hand as a cognitive foothold while learning, and at the same time, he works up to knowing the meaning of the word without any context. Thus, context helps in learning, and at the same time, it becomes clear to the learner that words should not always be learned in context.

Myth 5: "Words whose meanings have been inferred from context are retained better."
When the meaning of a word is inferred with the help of the context, the word and its meaning will be retained better than when the meaning is 'given', for example in the form of a translation. The explanation for the retention effect of inferring is that inferring creates all kinds of links (elaborations) between the word, its meaning, the context, and the knowledge already present in the learner. These links provide additional retrieval routes, which increase the chance that the word and its meaning will be remembered (Anderson, 1990).
In order to investigate whether inferring is an effective learning strategy, I carried out a learning experiment with Dutch pupils in secondary education (Mondria 1996, 2003). They had to learn French words (French-Dutch) with the aid of four different learning methods: (1) inferring the meaning of the target word with the help of a sentence context; (2) inferring followed by verifying the correctness of the inferred meaning with the help of an alphabetical word list; (3) inferring and verifying followed by memorizing the inferred and verified meaning of the target word ('meaning-inferred method'); (4) memorizing the given meaning of the target word, presented in a sentence context ('meaning-given method'). After two weeks, the learning results were as follows (see Table 2).

The learning effect of inferring per se is rather limited: after two weeks, only 6% of the inferred word meanings were remembered. The addition of a verifying stage led to an extra retention of 9%. However, it is only when the word meanings are intentionally memorized that the learning effect becomes substantial, as shown by the retention figures of the meaning-inferred method (47%) and the meaning-given method (50%). What is most striking is that the meaning-inferred method (inferring + verifying + memorizing) does not lead to better retention than the meaning-given method (memorizing the given meanings): the level of retention is similar. Thus, in this experiment no evidence can be found for the idea that inferred word meanings are retained better.
The results become even more interesting when we take into account the amount of time spent by the pupils on the different learning methods. Then it turns out that the meaning-inferred method takes considerably more time (in the experiment about 25% more) than the meaning-given method. Consequently, the efficiency of the meaning-inferred method is lower than that of the meaning-given method.
Does this imply that learners should not infer word meanings from context any more? Of course not, as inferring is a useful *compensation* strategy when our vocabulary knowledge is limited. However, inferring is not the most efficient *learning* strategy.

Myth 6: "Words learned productively are retained better."
It is often believed that words are better retained when they are learned productively, that is, in order to be used. For that reason, many teachers assume that it is useful to have learners learn words both receptively and productively, even when learners need to know the words only receptively (i.e. understand the words). This assumption sounds plausible because productive learning is more difficult and consequently more intensive, as a result of which the words will be retained better. Besides, if you know a word productively, you know it receptively as well, don't you?
However, in this case too, the facts are slightly different. In an experiment, I asked pupils in Dutch secondary education to learn French words in three different ways: (1) receptively (French-Dutch); (2) productively

Table 2: Learning effect of inferring (Mondria, 1996, 2003)

Learning method	*% Receptive retention*
Inferring	6
Inferring + verifying	15
Inferring + verifying + memorizing ('Meaning-inferred method')	47
Memorizing ('Meaning-given method')	50

(Dutch-French); (3) receptively + productively (French-Dutch and Dutch-French) (Mondria & Wiersma, 2004). Two weeks later, their knowledge of the words was tested. The receptive knowledge of the words turned out to be as follows (see Table 3).

Table 3: Learning effects of receptive and productive learning (Mondria & Wiersma, 2004)

Learning method	*% Receptive retention*
Receptive	48
Productive	42
Receptive + productive	49

Contrary to expectation, pupils who had learned the words both receptively and productively did not perform better (49%) than the pupils who had learned the words just receptively (48%): the retention was similar. This implies that if the learning aim is receptive retention – and in many cases this will be sufficient as it is by no means necessary to know all words productively, and certainly not immediately – it does not make sense to have learners learn the words productively as well, as this would take extra time without leading to better retention.

Myth 7: "Vocabulary knowledge should not be tested separately."

The main aim of foreign-language teaching is of course the acquisition of language skills: listening, speaking, reading, and writing. When these skills are tested, for example in order to assess how far someone's learning process has progressed, vocabulary knowledge is automatically taken into account. Therefore, there seems to be no reason to test vocabulary knowledge separately, that is, not integrated into a skills test.

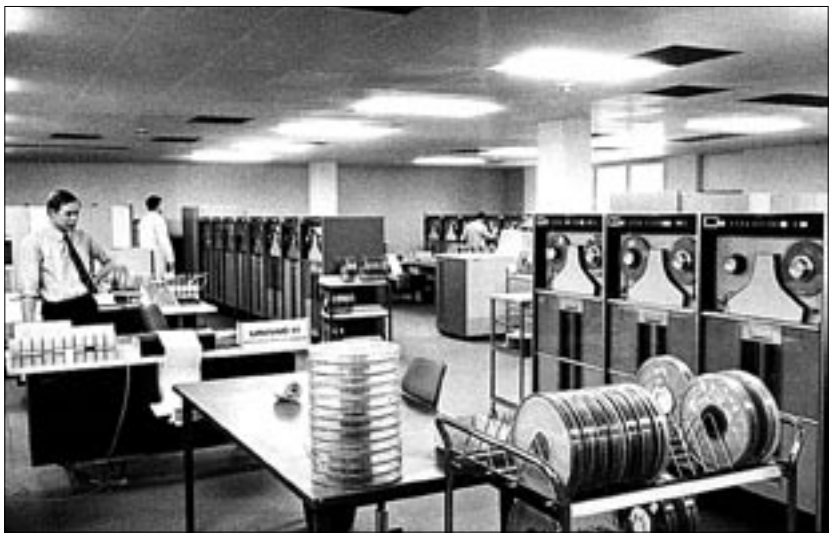
Nevertheless, there is at least one good reason for testing vocabulary knowledge separately, and that is that vocabulary tests can stimulate learners to learn, namely in the following ways (Mondria, 2004).

First, vocabulary tests can make learners aware of the *size* of their vocabulary. If their vocabulary turns out to be small, or if there are serious gaps, or if the knowledge of learners lags behind that of their fellow learners, this may be an explanation for many of the problems that learners experience, for example in reading comprehension. This diagnosis can act as a stimulus to invest more time in vocabulary learning.

Second, vocabulary tests can show the *progress* of learners. This can be an important stimulus for them to continue learning. Here it should be taken into account that an increase in

Table 4: Myths, facts, and didactic suggestions for vocabulary acquisition

Myth	Fact	Didactic suggestion
1. Number of words Knowing a relatively small number of words takes you far.	Knowing a relatively small number of words takes you a long way, but not far enough.	Learn a great number of words.
2. Word lists Word lists are of limited value.	Word lists are essential, but they have to be used in the right manner.	Use words lists as a basis, but put the words to be learned on cards.
3. Semantic sets Words learned in semantic sets are retained better.	Words learned in semantic sets are more easily confused.	Do not learn words in semantic sets.
4. Context Words should always be learned in context.	Words should not always be learned in context.	Learn words in context, but not in the final stage of the learning process.
5. Inferring Words whose meanings have been inferred from context are retained better.	Words whose meanings have been inferred from context are not retained better, and the meaning-inferred method takes more time and is therefore less efficient.	Do not use inferencing as a preferred vocabulary learning strategy.
6. Productive learning Words learned productively are retained better.	Words learned productively are not retained better, and productive learning takes more time.	Do not learn words productively if it is not necessary.
7. Testing Vocabulary knowledge should not be tested separately.	Testing vocabulary knowledge separately can stimulate vocabulary learning.	Test vocabulary knowledge separately on a regular basis.



UNIVAC III (Otto Press Photo) (1961)

vocabulary knowledge can already be observed after a relatively short period, while it takes longer before an increase in other skills can be observed.
Third, tests can focus learners' *attention* on vocabulary in an attractive way, thus stimulating vocabulary acquisition. I think especially of alternative, informal and less well-known test formats (suggestions can be found in Mondria, 2004, and on Tom Cobb's web site: http://www.lextutor.ca).
By the way, the very fact that a teacher (regularly) tests vocabulary knowledge is important, as it is a signal to the learners that vocabulary acquisition is essential. Conversely, if a teacher considers sound vocabulary knowledge essential without testing it, the wrong signal is given. In sum, there is every reason for testing vocabulary knowledge separately as well.

Summary: myths, facts, and didactic suggestions

In this article, I have tried to show that the facts about vocabulary acquisition are sometimes just a bit different or more complex than some myths would have us believe. Finally, by way of summary, I have set side by side the seven myths and facts, each case supplemented with a didactic suggestion (see Table 4).

Note

This article is the English version of my Dutch article 'Mythen over vocabulaireverwerving', published in 2006 in *Levende Talen Tijdschrift* 7/4, p. 3-11, and in Bossers, B. (Ed.). *Vakwerk 3: Achtergronden van de NT2-lespraktijk. Lezingen NT2-conferentie Hoeven-Bovendonk 2006.* Amsterdam, BV NT2, p. 27-37.

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