The Different Aspects of Vocabulary Knowledge

Paul Nation

Introduction

Knowing a word involves knowledge of a variety of different aspects of knowledge, and these aspects of knowledge can be known to different levels of strength and detail, and to different levels of fluency. The main reason for a teacher to be interested in what is involved in knowing a word is so that the focus and balance of a language course ensures the development of well-rounded, usable vocabulary knowledge. Thus, this chapter focuses on how the various aspects of knowing a word relate to learning, teaching, and testing.

There are several principles that relate to knowing a word.

1. Not all aspects of word knowledge are equally important.
2. Word knowledge can be described in terms of breadth (aspects), depth (strength), and fluency.
3. Word knowledge develops over a period of time.
4. Some knowledge is limited to individual words, while other knowledge is systematic.
5. Some knowledge needs to be learned, while other knowledge is constructed through common sense and knowledge of the world.
6. The difficulty of acquiring knowledge (learning burden) is affected by a variety of factors including regularity of patterning, the learner’s L1, other known languages, opportunity and experience, personal commitment, the quality of teaching, and the quality of course design.
7. Vocabulary knowledge is most likely to develop if there is a balance of incidental and deliberate appropriate opportunities for learning.
8. Learned aspects of word knowledge are affected by a small number of psychological learning conditions.
9. Fluency of word knowledge can be a useful learning focus.
10. Testing word knowledge requires careful thought about the purpose of testing, the aspects and strength of knowledge to be tested, the effects of test item type, and the people being tested.
Teachers and course designers need to be aware of the various aspects of knowing a word and need to know how to observe and support their development.

**Critical Issues and Topics**

The most widely known description of what is involved in knowing a word comes from Nation (2013a, p. 49) as shown in Table 2.1.

The receptive-productive distinction runs through each of the nine aspects in this table. Receptive knowledge is the kind of knowledge needed for listening and reading. At its most basic, it involves being able to recall a meaning when meeting a word form. Productive knowledge is the kind of knowledge needed for speaking and writing. At its most basic it involves being able to recall a word form in order to express a meaning. Receptive knowledge is easier to gain than productive knowledge. However, the kind of learning that is done should match the kind of knowledge needed. So, if a learner’s goal is to read the language, then the most effective kinds of learning will involve incidental learning while reading and deliberate receptive learning using flash cards. If however a learner needs to use all the four skills of listening, speaking, reading, and writing, then there needs to be incidental learning through all four skills and both receptive and productive deliberate learning (Griffin & Harley, 1996; Waring, 1997; Webb, 2009). The two principles that lie behind these research findings is that we learn what we focus on, and we should focus on what we need.

Let us now look at each of the parts of Table 2.1 to see the kind of knowledge involved, and how it might be learned.

**Table 2.1** What is involved in knowing a word

<table>
<thead>
<tr>
<th></th>
<th>Spoken</th>
<th></th>
<th>Written</th>
<th></th>
<th>Word parts</th>
<th></th>
<th>Meaning</th>
<th></th>
<th>Concept and referents</th>
<th></th>
<th>Associations</th>
<th></th>
<th>Use</th>
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</thead>
<tbody>
<tr>
<td><strong>Form</strong></td>
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<td></td>
<td><strong>Form and meaning</strong></td>
<td></td>
<td><strong>Concept and referents</strong></td>
<td></td>
<td><strong>Associations</strong></td>
<td></td>
<td><strong>Grammatical functions</strong></td>
</tr>
<tr>
<td><strong>Spoken</strong></td>
<td>R</td>
<td></td>
<td>P</td>
<td></td>
<td>R</td>
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<td>R</td>
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<td></td>
<td>P</td>
<td></td>
<td>R</td>
</tr>
<tr>
<td><strong>R</strong></td>
<td>What does the word sound like?</td>
<td></td>
<td>How is the word pronounced?</td>
<td></td>
<td>What parts are recognizable in this word?</td>
<td></td>
<td>What meaning does this word form signal?</td>
<td></td>
<td>What is included in the concept?</td>
<td></td>
<td>What other words does this make us think of?</td>
<td></td>
<td>In what patterns does the word occur?</td>
</tr>
<tr>
<td><strong>P</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>What word parts are needed to express the meaning?</td>
<td></td>
<td>What word form can be used to express this meaning?</td>
<td></td>
<td>What items can the concept refer to?</td>
<td></td>
<td>What other words could we use instead of this one?</td>
<td></td>
<td>In what patterns must we use this word?</td>
</tr>
<tr>
<td><strong>Written</strong></td>
<td>R</td>
<td></td>
<td>P</td>
<td></td>
<td>R</td>
<td></td>
<td>R</td>
<td></td>
<td>R</td>
<td></td>
<td>P</td>
<td></td>
<td>P</td>
</tr>
<tr>
<td><strong>R</strong></td>
<td>What does the word look like?</td>
<td></td>
<td>How is the word written and spelled?</td>
<td></td>
<td></td>
<td></td>
<td>What meaning does this word form signal?</td>
<td></td>
<td>What items can the concept refer to?</td>
<td></td>
<td>What other words could we use instead of this one?</td>
<td></td>
<td>Where, when, and how often would we expect to meet this word?</td>
</tr>
<tr>
<td><strong>P</strong></td>
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<td></td>
<td></td>
<td></td>
<td>Where, when, and how often can we use this word?</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Note: In column 3, R = receptive knowledge, P = productive knowledge.*

*Source: Adapted from Nation, 2013a*
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Knowing the Spoken Form of Words

One of the early stages in learning the spoken form of a word involves learning any new sounds that are not in the L1, and at a more general level developing awareness of how sounds can fit together, for example in consonant clusters and consonant vowel combinations. Each language has its own collection of sounds and permitted sound combinations, and even young native speakers have a feeling for what combinations are normal and what are not. Some languages have a variety of consonant clusters while others have few or none. For a native speaker, the learning of sounds is largely systematic, with highly contrasting open and closed sounds being learned early (this partly explains why children’s words for mother and father are very similar in different unrelated languages), and with a roughly predictable order of learning sound features. With foreign language learners the first language sound system has major positive and negative influences. Age of learning is strongly related to the likelihood of second language learners acquiring a native-like pronunciation, with younger learners more likely to be successful. There are several explanations for this, each emphasizing maturational, cognitive, or affective factors. The maturational explanation suggests around a certain age that there are physical changes in the brain that make the learning of a new sound system difficult. The cognitive explanation suggests that as the first language sound system becomes more strongly established, it becomes a kind of filter that influences a learner’s view of a different sound system (Flege, 1981). The affective explanation says that our pronunciation is an important part of our identity and taking on a new pronunciation, even for a different language, is seen as having to change an important part of who we are (Stevick, 1978). Each of these explanations requires a different approach to learning, with some experimental ways of dealing with the affective explanation involving the consumption of alcohol or the use of chemical relaxants (Guiora, Beit-Hallami, Brannon, Dull, & Scovel, 1972; Brannon, & Dull, 1972).

Acquiring a stable pronunciation of words is important for vocabulary learning, especially for young learners (Service & Kohonen, 1995), because one way that words can enter long-term memory is through the phonological loop, and a stable pronunciation is needed for a word to enter the phonological loop. Older learners however can draw on a wider range of memory strategies beyond formal repetition.

Developing knowledge of the spoken forms of words occurs across the four strands of learning through meaning-focused listening to input, learning through having to engage in spoken communication (meaning-focused output), deliberate learning and teaching, and spoken fluency development. Some adult learners of foreign languages stress the importance of knowledge of articulatory phonetics in improving their pronunciation.

Knowing the Written Form of Words

It is possible to learn another language without learning to read or write it, but especially for learners of English as a foreign language, being able to read allows access to a very large amount of graded reading material, which can provide an enormous boost in developing language proficiency.

Learning to read has a strong phonological basis (Perfetti & Lesgold, 1979) and this is especially true in languages whose writing system is systematically related to the spoken language through an alphabetic or syllabic writing system. An early requirement for learning to read an alphabetic language like English is phonological awareness. In essence this is the realization that words can be broken into separate sounds, and separate sounds can combine
to make words. Some children are not ready to deal with this before the age of six while others are ready much earlier. A very useful activity to develop phonological awareness in a young child is to play games like this – What word is this /p/ – /e/ – /t/? (The separate sounds are not the names of the letters as when saying the alphabet, but are the sounds). When the child gets good at doing this, then the child can take the role of breaking the word into sounds to test the listener. After phonological awareness, the next important piece of knowledge in learning to read is the alphabetic principle, that is, that sounds can be represented by letters. In some languages this representation is very regular and predictable. In English, there are many variants and exceptions, but there is still a core of regularity.

Learning the written form of words needs to occur across the four strands of meaning-focused input (learning by reading texts at the right level), meaning-focused output (having to write words and sentences), language-focused learning (deliberately learning letter shapes, sound-spelling correspondences, and word attack skills, and memorizing irregular words), and fluency development (doing plenty of very easy reading).

Knowing Word Parts

For English, knowledge of word parts primarily involves being able to use the inflectional system of the language, with the next step involving the more gradual growth of knowledge of the derivational affixes. Mochizuki and Aizawa (2000) tested Japanese learners’ knowledge of English affixes, finding that affix knowledge increased with vocabulary size, and that there were notable gaps in their knowledge. Schmitt and Meara (1997) and McLean (2017) also found a relationship between vocabulary size and affix knowledge. Sasao and Webb (2017) developed a comprehensive Word Part Levels Test which was used with a variety of learners to propose levels of affix knowledge. The better-known affixes tended to be those that occurred more frequently. There were also high correlations between item difficulty estimates for learners with the same L1 and the total participants’ item difficulty estimates. This showed that the first language did not play a strong role in knowledge of English affixes, and learning opportunity through input was likely to have had the greatest effect.

Knowledge of word stems (Wei, 2015), such as pos (put), vers (turn), and cept (take), is best not considered as an aspect of knowing a word, as this knowledge is largely meta-cognitive and not obvious to most native speakers. Word stem knowledge is most usefully developed as a mnemonic device for linking form and meaning.

Connecting Form and Meaning

Being able to recognize or produce the spoken or written form of a word is not much use unless the form has a connection with a meaning. In terms of language use, the most important aspects of vocabulary knowledge for a learner of English as a foreign language are knowledge of the word form and the form-meaning connection. This is because in order to start to read and listen, a learner needs to be able to recognize the form of useful words and be able to attach a meaning to them. For beginners this meaning will be an L1 word. The form-meaning connection is simply attaching a known form to a known meaning.

It is possible to know the form of a word and to know a meaning for a word and yet not realize that the two are connected. This is a bit like the common enough phenomenon of being familiar with someone’s name through having heard about them and not realizing that you have already met that person but did not know that that was their name. This phenomenon is common enough in learning a foreign language because in the early and intermediate
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stages of foreign language learning, first language concepts, usually in the form of translations, are used as the initial meanings for foreign language words. Thus for many foreign language words, initial learning involves learning a word form and making the form-meaning connection with the first language concept.

It is worthwhile separating out the form-meaning connection as an aspect of knowing a word because there are very helpful learning conditions, such as receptive and productive retrieval, varied retrieval and elaboration, which can strengthen this aspect of knowledge. The very well-researched keyword technique (Pressley, 1977) is a mnemonic technique specifically designed to make the form-meaning connection. Research by Deconinck, Boers, and Eyckmans (2017) shows that getting learners to consider whether the form of a newly met L2 word fits its meaning has very positive effects on establishing the form-meaning connection. This technique is somewhat like the etymological analysis that Boers and colleagues (see, e.g., Boers and Lindstromberg, 2009) advocate for learning multiword figuratives.

The form-meaning connection is usually easy to make for cognates and loanwords. This is because of the closely similar forms; for example, revolusi (in Indonesian) and revolution (in English) share a roughly similar meaning.

Learning the Concept and Referents

Most words have a core meaning that runs through all or most of their uses. For example, the word green has many listed senses in dictionaries referring to color, vegetables, lack of ripeness, inexperience, and so on, but when we look at them, they all seem to share a common core meaning. This should not be surprising because they are all signaled by the same word form. As we might expect, it is easier to learn a new sense for a word than it is to learn a completely new word, especially if the new sense and the known senses have a common underlying meaning (Bogaards, 2001). Thus, it is a useful teaching and learning strategy to draw attention to core meanings and to consider how newly met senses relate to known senses. When using a dictionary for example, it is worth looking at all senses of a word to see what is common, rather than just focusing on the relevant contextual sense.

Some words have completely unrelated meanings for the same spoken or written form. Usually these unrelated meanings have different histories and it is an accident that they share the same word form. Table 2.2 provides the technical terms for the types of relationships with some examples.

The most frequent 2,000 words of English (West, 1953) contains seven homographs (close, lead, minute, present, row, wind, and wound), 55 homonyms, and 147 homophones (Parent, 2012). The Academic Word List (Coxhead, 2000) contains 60 homonyms and homographs, but in only five cases would both words meet the criteria for inclusion in the list – issue, volume, objective, abstract, and attribute (Wang & Nation, 2004).

A feature of homonyms and homographs is that it is very unusual for two words like bear (to carry) and bear (the animal) to have roughly similar frequencies of occurrence.

Table 2.2 Homonyms, homographs, and homophones

<table>
<thead>
<tr>
<th></th>
<th>Spoken form</th>
<th>Written form</th>
<th>Meaning</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Homonyms</td>
<td>The same</td>
<td>The same</td>
<td>Different</td>
<td>band (group) – (hoop/ring)</td>
</tr>
<tr>
<td>Homographs</td>
<td>Different</td>
<td>The same</td>
<td>Different</td>
<td>minute (time) – (very small)</td>
</tr>
<tr>
<td>Homophones</td>
<td>The same</td>
<td>Different</td>
<td>Different</td>
<td>peace – piece</td>
</tr>
</tbody>
</table>
Typically one word makes up well over 70% of the total occurrences. *Bear* (the verb) for example accounts for 92% of the occurrences of the form and *bear* (the animal) 8%. In the most frequent 2,000 words of English only six homonyms (*bowl*, *ring*, *rest*, *net*, *yard*, *miss*) have roughly similar frequencies (see Nation, 2016, Chapter 3 for more detail).

Where possible, homonyms, homographs, and homophones should not be taught together, and the most frequent items should be taught first.

**Developing Associations With Words**

Associations between words (Miller & Fellbaum, 1991) are largely developed incidentally through receptive and productive language use. There are also associations which occur through knowledge of the world and through common sense. There are some conventional associations, such as opposites, synonyms, and hyponyms, that can be established through deliberate learning, but there is likely to be little value in teaching them.

There are numerous activities that involve classifying words into groups and arranging them into semantic maps which can be seen as a form of elaboration which may help strengthen learning.

**Learning the Grammar of Words**

Part of word knowledge involves being able to use words. Some of this knowledge relates to language systems and some relates to particular words. Let us look at systematic knowledge first. English nouns may be countable or uncountable and this affects whether they can have singular and plural forms, whether they can be used with numerals, articles, and determiners like *much*, *many*, *each*, and *every*, and subject-verb agreement. English verbs can be transitive and intransitive, which affects the use of the passive and what can occur after the verb. Some adjectives can be modified for degree, some taking *-er* and *-est*, and others *more* and *most*.

For many learners of English as a foreign language, learning this kind of systematic knowledge involves profound conceptual development, particularly if the particular knowledge is not similar to first language use. Learning the singular plural distinction, for example, is much more difficult than learning to add *-s* for plurals and so on. It involves developing the concepts of countability and uncountability and applying this view of nouns to their classification and use. It is not surprising that even very advanced learners of English as a foreign language often struggle with singular and plural.

There is some value in giving deliberate attention to grammar, especially for consciousness raising and for self-monitoring of language production. However it is likely that the systematic knowledge of grammatical features which underlies normal language use is ultimately the result of incidental learning from large amounts of meaningful comprehensible input. It is thus useful to see the learning of grammar occurring across the four strands of meaning-focused input, meaning-focused output, language-focused learning, and fluency development. Three of these strands involve incidental learning and one involves deliberate learning. This is probably about the right balance for learning grammar. Ellis (2005) describes an excellent set of principles for the learning of grammar which largely fits with the four strands.

Some grammar knowledge is word-based. That is, it relates to particular words. It is at this point that grammatical knowledge and collocational knowledge overlap. Knowing the word *agree* involves knowing that it is used as a verb, that it is intransitive but it can occur in
sentences such as *We are all agreed that . . .*, that when it is not a simple sentence (*I agree*) it is typically followed by a preposition group beginning with *with*, or an object clause beginning with *that*. No other verb takes the same set of patterns. When beginning to learn the word *agree*, it makes sense to memorize one or two of its most frequent uses in example sentences. This memorization should include analysis and understanding of the parts of the example sentences, rather than simply memorizing them as unanalyzed wholes. This can also be done through the use of substitution tables.

Concordance analysis can be a useful way of gathering information for such teaching and for intermediate and advanced learners the use of concordances can support learning (Cobb, 1997).

**Dealing With Collocations**

Sinclair (2004) puts the case most strongly for giving attention to collocations: “The lexical unit is best described maximally, not minimally” (p. 81). However, this should be taken to mean that in addition to giving attention to words as units we should also see how they behave in larger units. This is because the vast majority of multiword units are made up of parts where the meanings of the parts make an obvious contribution to the meaning of the whole, and where the parts behave grammatically and semantically in ways that are consistent with their use in other places (Liu, 2010). That is, collocations are not arbitrary groupings of words but are typically regular predictable combinations.

The biggest problem in dealing with research on collocation is coming up with a definition of what can be considered a collocation and then following that consistently. For the purposes of language learning, it is useful to classify collocations into core idioms, figuratives, and literals (Grant & Nation, 2006). Core idioms make up a small number of collocations in English, probably around 100. In core idioms, the meanings of the parts do not clearly relate to the meaning of the whole. It is likely that early in their history there was a connection but this is now not known. The most common core idioms include *as well (as)*, *by and large*, *out of hand*, *serve someone right*, and *take someone to task*.

Figuratives have two related meanings – a literal meaning and a figurative meaning. Here are some examples – *saved by the bell*, *give someone the green light*, *walking on air*, *between a rock and a hard place*. Many figuratives are related to a particular topic area – *out for the count* relates to boxing, *toe the line* relates to military drill, and *threw in his hand* relates to card playing. Gaining awareness of the origin of a figurative helps learning (Boers & Lindstromberg, 2009).

The meaning of literals is closely connected to the meanings of the parts, although it is possible to set up a scale of transparency from those very clearly connected (*like ice cream*) to those containing elements of opaqueness (*put up with*, *about time*). Martinez and Schmitt (2012) have a very carefully made lists of the most useful of these semi-opaque collocations.

These three meaning-transparency-based categories of collocations each have their different language-focused learning approaches (Grant & Nation, 2006). Core idioms need to be memorized as complete units. Because most of them are not frozen but can have different forms (*you’re pulling my leg; your leg’s being pulled; pull the other one, it’s got bells on it*), it is worth giving some attention to the parts. The learning of some core idioms may be helped by creating false etymologies, such as *cats and dogs* in the expression *raining cats and dogs*. Figuratives need to be dealt with using the obvious strategy of relating the literal meaning to the figurative meaning, and where possible finding out the topic area of the literal meaning. Literals can be largely learned incidentally, although in the early stages of learning...
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a language it is well worth memorizing very useful expressions (\textit{How much does that cost?}, \textit{Thanks very much, I’d like . . .}) in order to quickly develop spoken fluency (Nation \& Crabbe, 1991). Semi-opaque literals require a mixture of analysis and memorization.

The fluency development strand of a course sets up good conditions for collocational knowledge to grow and strengthen. There are several reasons for this. Firstly, receptive fluency development activities (listening and reading) should involve large amounts of input and this can increase noticing and repetition. Secondly, fluency activities often involve some pressure to go faster, and this pressure can encourage learners to restructure their knowledge to work with larger units of language, with words rather than letters, and with phrases rather than words (McLaughlin, 1990). Thirdly, repetition in input usually involves varied repetition rather than verbatim repetition (Webb \& Nation, 2017), and varied retrieval is a very effective learning condition (Joe, 1998). The fluency development strand and the other incidental learning strands of meaning-focused input and meaning-focused output are important for all aspects of vocabulary knowledge. Language-focused learning, of which teaching is only a part, needs to be accompanied by learning through use.

A lot of work on collocations has focused on formulaic sequences (Schmitt, 2004; Wray, 2008). Formulaic sequences are units of language that are most likely stored as whole units for the purposes of language use. The motivations for such storage are frequency of occurrence (If a phrase or sentence is used or met often, it is more efficiently stored as a whole unit) and irregularity (If a phrase or sentence cannot be easily reconstructed or analyzed, then it needs to be treated as a unit). Such storage contributes to fluency.

\textit{Managing Constraints on Use}

A rather small number of words and phrases are marked by restrictions on their use, and being aware of these restrictions is one aspect of knowing a word. Swear words are the most striking examples of such restrictions. There are numerous situations where they cannot be appropriately used. Other restrictions on use include politeness restrictions (words like \textit{fat}, \textit{old}, \textit{stupid} need to be avoided when talking to the person they apply to), geographical restrictions (dialects such as US English vs. UK English), age restrictions (language used to talk to children), datedness restrictions in that some words are old-fashioned, and frequency restrictions in that some words are so rare that they sound strange when they are used for common situations.

A very wide ranging restriction in English comes from the very important contrast between spoken and written language (Biber \& Conrad, 2009). In formal writing the use of colloquial spoken expressions seems inappropriate. In friendly spoken language and in friendly letters and emails, formal written language sounds unfriendly. In English, this contrast comes partly from the Germanic vs. Latinate vocabulary contrast, with Latinate vocabulary being more formal. Learning about restrictions on use can occur through feedback on use, and through informed observation of proficient users of the language. A few words, like swear words, need to come with a health warning when they are first learned.

\textit{The Conditions for Learning}

Listing the aspects of what is involved in knowing a word makes vocabulary learning and vocabulary teaching seem like formidable tasks. This is of course partly true. Learners need to know a lot of words and there is a lot to know about each word. However, let us now look at how these formidable tasks are made manageable, but before that it is useful to briefly
consider the psychological conditions that favor learning. Table 2.3 summarizes these conditions (Webb & Nation, 2017).

The two major conditions in Table 2.3 are *Number of meetings* and *Quality of attention*. Essentially, vocabulary learning depends on how often words are met and the quality or depth of the mental processing at each meeting (Nakata, 2011). The major contrast regarding quality of processing is between incidental attention and deliberate attention, with deliberate attention typically resulting in stronger learning. Both incidental and deliberate attention can occur with different degrees of quality. Noticing is the most superficial but nonetheless still useful level of attention. For incidental learning this could involve simply noticing an unknown word during reading or listening. For deliberate learning this could involve looking up the word in a dictionary or making a word card containing the word and its meaning. The next level of attention involves retrieval and depends on previous noticing. Receptive retrieval occurs when a learner sees or hears a word and has to recall its meaning. This can occur incidentally while reading or deliberately when working with flash cards. Productive retrieval occurs when a learner wants to express a meaning and has to recall the appropriate spoken or written word form. Receptive and productive retrieval are more effective for learning if they involve some degree of difference from previous retrievals or previous noticing, that is, varied meetings or use (Joe, 1998). Fortunately, when words are met again incidentally during listening and reading, they typically occur in different contexts. Elaboration involves some enrichment during the meeting with a word. In incidental learning, this enrichment can come from meeting or having to produce a word in a memorable communicative situation. During reading, a memorable picture may result in elaboration by enriching knowledge of the word, or reading the word on a sign or label may make its occurrence memorable. In deliberate learning, elaboration can occur through the use of a mnemonic technique such as the keyword technique, through word part analysis, or through the analysis of core meaning in a dictionary entry.

The receptive-productive distinction runs through all the learning conditions in Table 2.3, including number of meetings. In general, productive meetings are more demanding and more likely to result in stronger learning than receptive meetings (Griffin & Harley, 1996). The ranking of the levels of quality of attention is largely for explanatory purposes and is definitely not to suggest that ideally all meetings should involve deliberate productive elaboration. However, there are small but effective ways of increasing the quality of attention that learners and teachers could use. Here are some of the most useful ways.

1. Before looking up a word in a dictionary try to guess or recall its meaning. This replaces noticing with retrieval or elaboration.

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**Table 2.3 Conditions affecting vocabulary learning**

<table>
<thead>
<tr>
<th>Number of meetings</th>
<th>Initial occurrence/repetition</th>
</tr>
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<tbody>
<tr>
<td>Quality of attention</td>
<td>Incidental attention</td>
</tr>
<tr>
<td>Noticing</td>
<td></td>
</tr>
<tr>
<td>Receptive or productive retrieval</td>
<td></td>
</tr>
<tr>
<td>Varied receptive meetings or productive use</td>
<td></td>
</tr>
<tr>
<td>Elaboration</td>
<td></td>
</tr>
</tbody>
</table>

*Source: Adapted from Webb & Nation, 2017*
2 Use flash cards rather than vocabulary notebooks. Notebooks typically present the form and meaning together (noticing) rather than encouraging retrieval of the form or meaning (Nakata, 2011).

3 Encourage extensive reading of graded readers (Day & Bamford, 1998). This provides large amounts of repetition of vocabulary and involves varied receptive retrieval. Talking about what has been read provides an opportunity for productive varied retrieval.

4 Use linked skills activities (Nation, 2013b, Chapter 15) where learners deal with the same material across three different skills, for example, they may read a text, talk about it, and then write about it. This encourages repetition, retrieval, and varied meetings and use.

5 At the beginning and end of a class, get the learners to recall what they covered in previous classes or in the present class session. This encourages deliberate attention, retrieval, and perhaps elaboration. It can also help move receptive learning to productive use.

Although we have mainly looked at learning word form and the form-meaning connection in the preceding examples, the conditions for learning apply to all aspects of knowing a word. Let us now look at how the aspects of knowing a word are likely to be learned.

Developing Word Knowledge

As has been noted several times in this chapter, learning is not solely dependent upon teaching, but it occurs across the four strands of meaning-focused input, meaning-focused output, language-focused learning, and fluency development. Teaching makes up part of the language-focused learning strand, sharing time with deliberate study. If there is plenty of input and the chance to produce language under both easy and slightly demanding conditions, then a lot of incidental vocabulary learning will occur.

Vocabulary learning is a cumulative process, both in increasing the number of words known and in increasing depth of knowledge of words (Read, 2004). Each word needs to be met several times in a variety of ways and we should expect knowledge of each word to grow and strengthen over time rather than expect each word to be fully learned on the first meeting. A teacher’s concern should not be with how a word should be introduced to the learners, but with how it can be met multiple times in a variety of contexts.

The learning burden of a word is the amount of effort needed to learn it. Words differ in their learning burden, with some words being very easy to learn because they are like L1 words, and others requiring various degrees of effort. The learning burden of a word depends on its relationship with L1 words or with words in other languages that the learner knows, and on its regularity with regard to the systems of form, meaning, and use within the L2. Speakers of European languages which are related to English may find that they already know a lot about English vocabulary because the same words occur within their first language. For example, around 80% of the words in the Academic Word List (Coxhead, 2000) have roughly similar forms and meanings in Spanish. Now, with lots of borrowings of English words into languages such as Japanese (Daulton, 2008), Thai, and Indonesian, learners will already know some English vocabulary even before they begin to learn English.

Some words in a foreign language may have a regular predictable spelling while others have an unusual spelling. The senses of some words stay close to their core meaning. The grammar of some words is largely predictable from their part of speech. Research by De Groot (2006) suggests that words that are easy to learn because they fit into regular systems
are not only easier to learn but are also well retained. That is, high levels of learning effort are not essential for good retention, if what is being learned fits into known patterns.

If teachers have knowledge of the learners’ L1 and are familiar with the writing system, morphology, and grammar of the L2, they can readily work out the learning burden of L2 words and direct deliberate attention to the aspects of knowledge that most strongly affect the learning burden of a particular word. For example, words like *one*, *yacht*, and *receive* need attention to spelling. Words like *fork*, *sweet*, and *agree* need attention to core meaning. Words like *discuss*, *enjoy*, and *police* need attention to grammar.

The various aspects of word knowledge are not equally important. For initial learning we would expect spoken word form and the form-meaning connection to be the first aspects that would be learned for most words. This knowledge allows the beginnings of comprehension. For a survival vocabulary (Nation & Crabbe, 1991) intended for productive use, spoken word form, the form-meaning connection, and some very basic grammatical knowledge would be important. Other aspects of knowledge can become focuses of attention as proficiency develops.

**Future Directions**

The model of word knowledge used in this chapter is not at all sophisticated. It is static and treats the various aspects as unrelated parts. It is a convenient way of covering a range of kinds of knowledge but it does not represent vocabulary in use. It also does not represent how a vocabulary develops. A model more focused on use and growth is likely to provide insights that can enrich learning and research. The work of Paul Meara (2006) has gone a long way towards doing this, and this work needs to be continued.

Knowledge of vocabulary develops in many ways, as a result of deliberate learning, direct teaching, incidental learning, transfer from the L1, knowledge of language systems, and the integration of language knowledge with real-world knowledge. There is a lack of longitudinal studies that consider learning from a variety of sources and examine how word knowledge develops over time and under what conditions. Such studies need not all be long-term but can look at what happens to word knowledge over short periods of time. For example, Barcroft’s (2007) study of opportunities for word retrieval while reading has useful implications for glossaries and dictionary use. Similarly, studies of what happens to particular words during extensive reading (Horst, 2005; Pigada & Schmitt, 2006; Pellicer-Sánchez & Schmitt, 2010) have useful messages for the use and design of graded readers. Pellicer-Sánchez’s (2016) eye-tracking study provided a fascinating view into what can happen to previously unknown words while reading. We need more process-focused studies of this kind and quality.

Research on morphological knowledge (McLean, 2017; Mochizuki & Aizawa, 2000) shows that some groups of learners have very poor knowledge of the derivational affixes of English. This knowledge is way below what learners should know at their current proficiency level. This has a major effect on their vocabulary size and their ability to cope with vocabulary while reading. There is virtually no research which shows how this knowledge can be quickly developed through deliberate learning. There is also a need to examine the role of extensive reading and extensive listening in supporting the development of this knowledge, as Sasao and Webb (2017) found a relationship between frequency and knowledge. Morphological knowledge is at the intersection of breadth and depth of vocabulary knowledge and needs to be an important learning focus in the beginning and intermediate levels of language learning.
The quality of research on collocation continues to improve, in part helped by the increasing power of computers and the increasing availability of spoken and written corpora of various kinds. A largely neglected area in collocation involves the transparency of collocations, namely how easy is it to get the meaning of the collocation from the meaning of its parts. This is also called compositionality. As argued earlier in this chapter, the transparency of collocations is directly related to how they are comprehended and learned. The categories of core idioms, figuratives, and literals relate to transparency, but within each of these categories there are degrees of transparency. Studies looking at both frequency and transparency could provide data on the size of the learning task for collocations and further refine our understanding of how they might be learned. This could lead to studies of how learners actually cope with them in context.

**Testing Control of Aspects of Word Knowledge**

There is now a growing number of tests examining learners’ knowledge of the written form and the form-meaning connection, and some of these are available in bilingual versions. These include the Vocabulary Size Test (Nation & Beglar, 2007) and the Updated Vocabulary Levels Test (Webb, Sasao, & Ballance, 2017). The Picture Vocabulary Size Test (Anthony & Nation, 2017) uses both spoken and written cues to test knowledge of the most frequent 6,000 words of English and is intended for use with young children. There has been vigorous and very helpful debate and research on the unit of counting, the item format and the role of guessing (including the use of *I don’t know*), and the interpretation of such tests. This debate and research will undoubtedly improve the nature and use of such tests and will provide useful guidelines for future tests of different aspects of word knowledge.

Webb and Sasao (2013) have developed carefully constructed tests of word part knowledge. Read’s (1995) work on the Word Associates Test combined collocational knowledge and knowledge of associations and encouraged research on the relationship between breadth and depth of vocabulary knowledge (Qian, 1999), with the finding that as vocabulary size (breadth) grows, so does depth of knowledge.

There is a need for tests that look for systematic aspects of word knowledge, such as control of the spelling system, dealing with related senses of words, and the ability to understand figuratives. Some of the measures used with young native speakers, such as the running record (Clay, 2013) where a learner is scored on the ability to read a text aloud, and reading comprehension tests may be adapted to become useful diagnostic tools when working with learners of English as a foreign language.

There is also a need for diagnostic tests of strategies for dealing with aspects of word knowledge that are relevant for foreign language learners. Sasao and Webb (2018) have developed a test to measure skill in guessing from context, which is a strategy for dealing with word meaning. Dictionary use is another such strategy for accessing word meaning, and flash card use is a strategy for learning form-meaning connections. There are form, meaning, and use strategies which can all contribute to knowing words.

There are three important messages to take from this chapter. Firstly, there is more to knowing a word than knowing what it means. Secondly, depth of word knowledge gradually develops in a variety of ways and teaching is only one of the contributors to this knowledge, although not the only one where teachers can have a positive influence. Thirdly, it is possible to monitor the development of many aspects of knowledge through tests and observational procedures, and both teachers and learners should make use of these.
Further Reading


This chapter focuses on knowing a word, with an extended discussion of the receptive-productive distinction and the nine aspects involved in knowing a word. There is a substantial list of references for the chapter and these can be updated by referring to the regularly updated vocabulary bibliography that appears on Nation’s website, particularly those articles followed by the reference number [2].


This chapter looks critically at research on collocation and multiword units and suggests ways of searching for them in corpora and in classifying them.


This chapter has a detailed discussion of learning burden and how it can be applied.


This comprehensive study of knowledge of English affixes provides tests of three kinds of affix knowledge plus results that can be used to guide teaching.

Related Topics

The mental lexicon, the relationship between vocabulary knowledge and proficiency, L1 and L2 vocabulary size and growth, how vocabulary fits into theories of L2 learning, incidental vocabulary learning, measuring depth of vocabulary knowledge

References


