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#### How Vocabulary is Learned

This guide to vocabulary acquisition is essential reading for teachers of English as a second or foreign language. It presents the major ideas and principles that relate to the teaching and learning of vocabulary and evaluates a wide range of practical activities designed to help boost students' vocabulary acquisition.

Key questions which are answered include

- How many words should students learn at a time and how often?
- How much classroom time should be spent teaching vocabulary?
- What is the best way to group vocabulary for learning?
- Is it useful to provide students with the L1 translations of unknown words?
- Why do some students make greater progress than others?

Extra resources are available on the website: www.oup.com/elt/teacher/hvil

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Teachers will find answers to many of their perennial questions about vocabulary learning—as well as some they had not yet thought to ask! There is research evidence to support established practices, but also new evidence that challenges old ideas.

PATSY LIGHTBOWN (co-author of *How Languages are Learned*, with Nina Spada)

## How Vocabulary is Learned



Stuart Webb & Paul Nation

XFORD





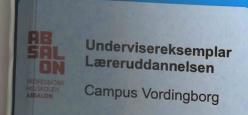
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**Webb, S. A.**, & **Chang, A. C.-S.** (2012a). Second language vocabulary growth. *RELC Journal*, *43*(1), 113–126.

This study looks at the extent of L2 vocabulary growth, as well as the proportion of words that EFL students learn at different word frequency levels. Webb and Chang outline principles to consider when setting up an effective vocabulary learning programme.

## CONDITIONS CONTRIBUTING TO VOCABULARY LEARNING

#### Introduction

What has to happen for vocabulary learning to occur? Activities may be used to facilitate vocabulary learning, but more specifically it is the learning conditions that these activities set up which result in the learning itself. A major goal of this book is to show how a range of very useful activities make use of learning conditions, and how these activities can be used and adapted to maximize the occurrence of such conditions. This chapter looks at how learning conditions occur in activities. Awareness of the conditions that contribute to vocabulary learning should help teachers and learners to see how effective (or ineffective) an activity may be, as well as to find ways to modify exercises to make them more likely to facilitate learning.

#### Framework of vocabulary learning conditions

Vocabulary learning occurs because certain conditions are established which facilitate learning. These are repetition, **noticing**, **retrieval**, **varied encounters** and **varied use**, and **elaboration**. These learning conditions are themselves underpinned by two key factors:

- 1 repetition, i.e. the number of encounters with each word
- 2 the quality of attention at each encounter.

The greater the number of encounters, the more likely learning is to occur; and the deeper the quality of the encounters, the more likely learning is to occur. The few experiments comparing the effects of the number of encounters (repetitions) with the quality of the encounters suggest that, of the two factors, quality has the stronger effect (Laufer & Rozovski-Roitblat, 2015; Webb, 2008a). See Table 4.1 for a framework of how these factors break down into the various vocabulary learning conditions.

Conditions	contributing	to	vocabulary	learning
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# Repetition = number of encounters (first encounter + repetition) Quality of Incidental Deliberate Noticing Retrieval (receptive or productive) Varied encounters (receptive) or varied use (productive) Elaboration (receptive or productive)

Table 4.1 Framework of vocabulary learning conditions

Quality of attention depends primarily on whether the learner gives incidental attention or deliberate attention to a word they encounter. There are a few situations where it is not easy to distinguish between the two; but, as seen in Chapter 3, incidental attention generally applies when the learner's focus is on some other aspect of communication besides individual words and phrases, while deliberate attention applies when the learner consciously focuses on particular aspects of a word or phrase. In general, deliberate attention in an activity is more likely to result in learning than incidental attention. However, in a well-balanced vocabulary learning programme, the opportunities for learning from incidental attention should be much greater than those for learning from deliberate attention.

It is also worth noting that the four learning conditions relating to quality of attention—noticing, retrieval, varied encounters and varied use, and elaboration—are largely cumulative. For example, retrieval also involves noticing, and varied use involves retrieval and noticing; elaboration certainly involves noticing and may involve retrieval if the elaborated words have been met before; and deliberate elaboration can also involve varied use. However, because elaboration can occur when the word is **decontextualized**, deliberate elaboration does not necessarily involve varied use.

There are other important conditions which contribute to learning, such as the similarity of L1 and L2 concepts, the existence of cognates and **loanwords**, patterning within L2 words, and interference between related words, but these largely affect the learning burden of a word (see Chapter 2). The lighter the learning burden of a word, the less repetition and attention will be required to learn it.

#### ACTIVITY 4.1 Analysing quality of attention

Which of the following situations involve incidental attention and which involve deliberate attention? Justify your classifications. Then check your answers at the end of the chapter.

- I learning a word using a flashcard app
- 2 looking up a word in a dictionary while reading
- 3 hearing a word during a lecture
- 4 asking someone the meaning of a word they have just used in a conversation
- 5 breaking down a word into word parts
- 6 hearing a word used in a discussion
- 7 subconsciously guessing a word from context
- 8 using a word without being sure of its meaning

Table 4.2 gives examples of activities which make use of the learning conditions aligned to quality of attention. (For a more detailed explanation of some of the activities, see Chapter 5.)

Repetition	= number of encounters (first encounter + repetition)		
Quality of attention	Incidental	Deliberate	
Noticing	Guessing from context	Highlighting words in a text	
	Noticing a gap when speaking or writing	Focusing on the form or meaning of a word on a flashcard	
		Using a dictionary or glossary	
		Being taught words	
Retrieval	Seeing a previously encountered word while listening or reading, and	Remembering words on flashcards	
	recalling its meaning	Doing cloze exercises after reading a text	
	Recalling and using a recently encountered word as part of conversation or writing	Playing games that involve remembering the names of objects (e.g. Kim's Game)	
		Recalling a list of words	

Conditions contributing to vocabulary learn	arnir	ary l	vocabul	r to	contributing	Conditions	C
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Varied encounters	Seeing a previously encountered word in a new form or context while listening or reading, and recalling its meaning (e.g. linked skills)  Extensive reading	Looking at different examples of the word used in context  Doing an exercise consisting of true/false sentences
Varied use	Recalling and using a recently encountered word in a new way in conversation or writing (e.g. linked skills)	Doing cloze exercises  Doing topic-based continuous writing  Giving a presentation
Elaboration	Encountering and using a word to communicate  Describing pictures  Reading interactively (reading and discussing in a group)	Using memory techniques to link L1 and L2 words (the keyword technique)  Creating a chart or map of related words (semantic mapping)
		Analysing word parts  Looking at the different senses of a word to determine its core meaning

Table 4.2 Vocabulary learning conditions with example activities

These learning conditions provide a very useful framework for evaluating a range of activities, and in the remainder of this chapter we will look closely at each of the conditions, following the order shown in Table 4.1.

#### Repetition

There is plenty of L1 and L2 research showing the importance of repetition (Brown, Waring & Donkaewbua, 2008; Kweon & Kim, 2008; Laufer & Rozovski-Roitblat, 2011; Pellicer-Sánchez & Schmitt, 2010; Pigada & Schmitt, 2006; Rott, 1999; Waring & Takaki, 2003; Webb, 2007a). Common sense also suggests that the more often you encounter or use a word, the stronger your knowledge of it will be.

#### ACTIVITY 4.2 Using repetition

Think of a class you teach, or a group of learners that you know. Suggest three activities you could use to make sure that the words the learners encountered during their reading session have a chance of being used or encountered again later on. Then read on and check your ideas.

It is useful to distinguish repetition in incidental learning from repetition in deliberate learning. In principle, fewer repetitions are needed in deliberate learning than in incidental learning.

#### Repetition and incidental learning

A major feature of incidental vocabulary learning is that learning the meaning of a word typically requires the learner to infer the meaning from **contextual clues**. A commonly asked question is: 'How many repetitions are necessary for learning to occur?' Research does not provide a clear and obvious answer to this question, largely because the salience of the word, the availability of information about it, the quality of the encounters with it, and the learning burden of the word itself are also very important factors affecting learning, and it is not easy to separate their effects from that of repetition. However, besides the general consensus that the greater the number of repetitions, the more likely learning is to occur, research does suggest the following:

- Learning is supported if, in the initial encounter(s) with a word, information is readily available about the word, such as its form and meaning. This information provides basic knowledge which can then be strengthened, added to, and retrieved in later encounters (Royer, 1973).
- In general, the value of repetition is limited by the law of diminishing returns. That is, the first few encounters with a word are likely to add significantly to lexical knowledge, with each subsequent repetition making a smaller contribution. Karina Vidal (2011) found that the greatest increase in vocabulary learning from reading occurred at around two or three repetitions, and from listening at around five to six repetitions. Another very innovative study takes us a step closer to what actually happens when learners encounter new vocabulary in texts. Ana Pellicer-Sánchez (2016) used eye tracking technology to reveal how long learners focused on new words. She found that at around the third to the fifth repetition, there was a significant increase in the speed of retrieval. After eight encounters with the word in the text, the retrieval time started to approach that of known words. In her study, Pellicer-Sánchez found that eight repetitions (all target words in the study were repeated eight times) resulted in high scores on form and meaning recognition tests and moderate scores on meaning recall tests.
- Studies have shown that there is probably a useful intermediate repetition goal for incidental learning of around 12 or more repetitions. Marlise Horst, Tom Cobb, and Paul Meara (1998) found that words repeated eight

times or more showed the greatest gains. Thomas Saragi, Paul Nation, and Gerold Meister's data (1978) and Stuart Webb's data (2007a) suggested at least ten repetitions. Pellicer-Sánchez and Schmitt (2010) found that words occurring more than ten times showed the greatest gains.

• It has also been shown that repetition similarly affects the incidental learning of multi-word combinations (Durrant & Schmitt, 2010; Sonbul & Schmitt, 2013; Webb, Newton, & Chang, 2013).

What is common in all of these studies is the recognition that, although repetition is clearly an important factor affecting vocabulary learning, there are plenty of words that are readily learned with a very small number of repetitions and some words that are not learned, even after many repetitions. Ronan Brown, Rob Waring, and Sangrawee Donkaewbua (2008) found that well over 20 repetitions may be needed for some words, especially in listening. Any proposed number of repetitions will be more than enough for some words and not enough for others, although it may serve as a reasonable estimate for most words. In general, there seem to be medium-strength correlations between repetition and learning (Saragi, Nation, & Meister, 1978; Webb, 2007a).

#### Repetition and deliberate learning

In deliberate learning, a smaller number of repetitions—around seven appears to be required to learn most words (Crothers & Suppes, 1967; Lado, Baldwin, & Lobo, 1967; Tinkham, 1993, 1997; Waring, 1997a), although learners differ greatly in their aptitude for deliberate vocabulary learning (Thorndike, 1908; Tinkham, 1989; Webb, 1962). Even the first pass through a list of word pairs can result in substantial learning, especially if the language being learned is related to the learner's L1, as is the case with English, German (Thorndike, 1908), and Spanish (Crothers & Suppes, 1967). Warwick Elley (1989) found that two deliberate encounters had a notable effect on learning when a teacher quickly explained a word encountered in a listening text. Note, however, that most of the studies concerned focused on measuring knowledge of the written form and meaning of words, and largely involved choosing the correct meaning in a multiplechoice test or providing a meaning in a recall test. While recognizing the form of a word and recalling its meaning are central to reading, there are many other aspects of vocabulary knowledge to be gained.

#### Spacing of repetitions

Within a deliberate learning session, retention is better if the repetitions of a word are not all massed together but spaced. In other words, if several words are being learned at the same time, it is better to give attention to each of the words and then come back to the first one again so that there

is an interval between each encounter with a particular word. This is better than concentrating on one word at a time, repeating it over and over. It used to be thought that the spacing of words within a learning session needed to be gradually increased, but more recent research has shown that evenly spread spacing is sufficient (Nakata, 2015).

#### Increasing repetition

Repetition is important in learning, and the more repetitions there are, the more likely learning is to occur. We will now look at a few ways of increasing repetition. (See Chapter 5 for an in-depth overview of activities and how learning conditions contribute to their effectiveness.)

Using graded readers

In incidental learning, we now know that repetition is primarily related to quantity of input; that is, the more learners listen and read, the more often words will be repeated. Unfortunately, as we know from Zipf's law, at least half of the different words in any text are likely to only occur once. This means that a very large proportion of the new words encountered in a text are not likely to be repeated in that text, or even in texts which follow. A key solution to this problem is to read texts that are specially prepared for language learners, namely graded readers. Although Zipf's law still applies to graded readers, every word in a graded reader is likely to be useful to the learner and worth learning. Graded readers are now available up to the 8,000 word frequency level, beyond which learners should move on to reading unsimplified texts.

Repeated reading

Re-reading the same text effectively doubles the repetitions of words. Reading similar texts (that is, on the same topic) will reduce the number of different words in the text by at least 50% (Sutarsyah, Nation, & Kennedy, 1994). While this only has a minor effect on repetitions, it does avoid a lot of the distraction that can come from having to deal with large numbers of unknown words. The focus here is on verbatim repetition (repeatedly encountering the word in exactly the same context) to strengthen learning. Repeated viewing of the same film or television programme achieves the same result.

#### Linked skills

Activities such as the **linked skills** activity (see Chapter 5), where learners deal with the same content across different language skills, build in repetition by focusing on the same topic several times during the activity. This is varied (rather than verbatim) repetition, i.e. encountering the word in various unfamiliar contexts, which enriches learning. Combining incidental learning and deliberate learning can ensure that words which do not get enough repetitions in incidental learning can be strengthened through deliberate learning.

Conditions contributing to vocabulary learning

Deliberate learning

Repetition is much more easily controlled in deliberate learning. In deliberate strategies, such as learning words with flashcards, repetition is a key element.

#### Quality of attention

Repetition needs to be supported by high-quality encounters with the words. As we saw in Table 4.1, four learning conditions contribute to the quality of attention involved in vocabulary learning: noticing, retrieval, varied encounters and varied use, and elaboration. We will now look at each of these in turn and give a few examples of activities to illustrate.

#### Noticing

Noticing involves paying attention to a word. As a key component of vocabulary learning, it has been the focus of considerable speculation and research in applied linguistics (Ellis, 1991; McLaughlin, 1990; Schmidt, 1990). In incidental learning, noticing occurs when guessing from context and when retrieving the meaning of a familiar or partially familiar word. Looking up a word in a dictionary or glossary makes noticing more deliberate, as does encountering words which have been highlighted in the text, for example in bold, italics, or colour. Although noticing by itself is not one of the deeper levels of quality of attention, it is still very important, because where we give our attention largely determines what will be learned (Barcroft, 2009). If we focus on the form of a word, then we are more likely to learn that than its meaning. If we focus on the meaning of the word, then this necessarily takes our attention away from its form. We will now look at the various ways in which noticing can occur.

#### Decontextualization

The more deliberate acts of noticing involve some kind of decontextualization. This means looking at a word in isolation, rather than as part of the context in which it appears. For example, when we look up a word in a dictionary, or have it explained to us, we view that word as a specific language item, rather than as a component of the surrounding text.

#### Word consciousness

Noticing is encouraged by **word consciousness** (Scott & Nagy, 2004; Graves, 2006). This refers to a general meta-linguistic awareness of words and various aspects of what it means to know a word. For example:

• an awareness of the value of dictionaries and of the usefulness of looking up words

- an awareness that many words can be broken down into parts and that the meanings of these parts relate to the meaning of the whole word
- a recognition that words have many senses, but that these senses share a common core meaning
- an awareness that there are many aspects of word knowledge
- the realization that some words are formal and others informal, and that the choice of words strongly affects a message.

Word consciousness is developed by doing activities with a deliberate focus on these kinds of knowledge. Strategy training also raises word consciousness. The goal of word consciousness training is to make learners excited about encountering and learning new words, to make them aware of how to go about learning words, and to get them interested in exploring the many aspects of the words that they already know.

#### Negotiation

Group work activities also provide the opportunity for noticing to occur, particularly when learners negotiate the meanings of words that are unfamiliar to them. **Negotiation** of vocabulary involves what some call 'language-related episodes'. These occur when, in the context of a communication task, learners clarify and explain language features to each other, such as what a word means or how to spell it. Importantly, learners do not have to actively engage in negotiation in order to gain the benefits; observing others negotiating seems to be as effective as actively taking part (Ellis & Heimbach, 1997; Newton, 2013; Stahl & Clark, 1987). Vocabulary which is negotiated is more likely to be learned than vocabulary which is simply encountered in context (Newton, 2013). However, negotiation takes time (Ellis, Tanaka, & Yamazaki, 1994) and therefore cannot account for as much learning as simply guessing from context.

Many activities that are used to facilitate vocabulary learning do not go much beyond the level of noticing. For example, learning words in bilingual lists, where L2 words and their L1 translations can be seen at the same time, only requires a quality of attention at the level of noticing. Similarly, repeating words over and over to oneself does not go beyond the level of noticing. As we shall see in the sections that follow, it is not difficult to increase the quality of noticing.

#### Retrieval

The second learning condition contributing to quality of attention is retrieval (see Table 4.1). Retrieval can only occur on the second or subsequent encounters with a word, because it involves recalling what was encountered before. This reliance on the recollection of previous learning explains why retrieval is sometimes called the **testing effect** in the field of

psychology. There are two types of retrieval: receptive retrieval involves seeing or hearing a word form and having to retrieve its meaning, as when reading or listening; productive retrieval involves needing to express a meaning and having to retrieve the appropriate word form, as in speaking or writing.

Reading and listening activities in general set up ideal conditions for retrieval. When reading, for example, the meaning of an unfamiliar word may be guessed from context, or looked up in a dictionary. The next encounter with that word in the text provides an opportunity for retrieval to occur, and subsequent encounters provide further opportunities. Research by Joe Barcroft (2007) has shown that making such retrievals is more effective for learning than being provided with the meaning of the word each time it is encountered. Retrieval is a powerful learning condition, which becomes even more powerful when the retrievals are spaced in time. Retrieval can also be enhanced if learners are aware of cognate or loanword relationships between L2 and L1 words. Many of these are so obvious that the connection does not need to be pointed out (for example, 'table' in English and French), but some are not so obvious (for example, English 'coast' and French 'côte').

One of the skills that a teacher needs to develop is knowing how to provide learners with opportunities to make retrievals. At the most basic level, this may simply involve pausing before completing a sentence, in order to give learners enough time to make the retrieval. It also involves making it possible for repetition to occur so that these repetitions become opportunities for retrieval. Let us consider a few ways of creating such opportunities.

Re-telling

Re-telling activities provide opportunities for retrieval, and teachers can usefully spend a reasonable amount of time on getting learners to re-tell and reflect on previous work. During re-telling, the 'pause—prompt—praise' procedure is an important tool for both the teacher and the learners. This procedure involves pausing in order to give the learner a chance to retrieve, providing a prompt or clue to help if the retrieval seems unlikely to occur, and finally, giving praise for a successful retrieval.

An effective way to encourage re-telling if the learners are working from a text is to get them to put the text away and then recall what they have been working on. If the teacher handles this skilfully, this can be used as an opportunity to go beyond retrieval to enrich and elaborate on the previous learning. In any lesson, the old material is much more important than the new material, because the old material is further along the path to being learned, so the attention given to it is more likely to result in well-established learning. The new material is just beginning this journey.

Digital glossaries

Digital reading texts provide excellent opportunities for retrieval. When **glossing** words in hard-copy texts, the glosses are likely to appear in the margin next to the line where the glossed word occurs, or in a box next to a reading text. Such glosses eliminate the need for retrieval. Hyperlinks to glosses in e-readers such as Kindle and Kobo, however, allow users to retrieve the meaning of a word before tapping on the word to bring up the gloss. This retrieval with feedback when needed is likely to be more effective than retrieval by itself.

#### Flashcards

The use of flashcards to deliberately learn vocabulary makes strong use of the condition of retrieval. Receptive retrieval occurs when looking at the L2 word and trying to retrieve its meaning. This is easier than productive retrieval, which involves looking at the L1 meaning (the translation) and trying to retrieve the L2 word form. Research comparing receptive retrieval and productive retrieval with flashcards has shown that if only one kind of retrieval is to be used, then it should be productive retrieval (Griffin & Harley, 1996). This is because, even though productive retrieval is more difficult, it includes the knowledge that is needed for both productive and receptive retrieval. Doing well on receptive retrieval, on the other hand, does not ensure successful productive retrieval.

#### Varied encounters and varied use

As we saw in Table 4.1, the third learning condition is divided into varied (receptive) encounters and varied (productive) use. Both involve retrieval but differ from it in the important sense that they also involve encountering or using a word in different forms or contexts. The degree of difference between current and prior encounters or use will affect how much is learned about the word (Hall, 1991; Joe, 1998); the greater the difference, the stronger the learning. The strength of learning is probably accounted for by the strengthening effect of retrieval plus the enriched information about the word provided by the variation in encounter or use. As noted earlier, verbatim retrieval provides the strengthening effect of retrieval, but not the enrichment.

As Angela Joe (1998) found, there are many degrees of variation which affect our knowledge of a word. Words can vary in their form, meaning, and use. Forms can vary in their spoken form, written form, and word parts. Meanings can differ according to the various senses of a word. Word use can vary according to variations in grammatical context and collocation. Several of these aspects are interdependent. For example, a different grammatical context may require the use of a different form of the word as well as different collocations and perhaps a different sense.

Informal **concordance** studies of the occurrence of words in graded readers and novels show that the vast majority of encounters with content words within a text are varied. This is why extensive reading is a good way of expanding receptive vocabulary knowledge. The opportunities for varied encounters with words in reading could be increased by reading different texts on the same topic, such as topical articles from different online newspapers and magazines. For listening and speaking, group work activities which encourage negotiation provide opportunities for varied encounters and varied use. When learners negotiate the meaning of a word, they move from a topic-focused discussion to a language-focused discussion. This requires them to consider the word in two different ways.

Differences between the L1 and L2 are likely to contribute positively to the opportunities for varied encounters. What seems to be the same concept in two different languages is highly likely to differ in the range of referents from one language to the other. For example, 'branch' in English ('tree branch', 'branch of a company', 'branch of a bank', etc.) is represented by several words in Indonesian. These differences can seem very striking to a language learner; and besides being part of the fun and educational value of learning another language, they can also serve to enrich vocabulary knowledge.

In essence, opportunities for varied encounters and varied use are created by any activity which involves revisiting the same topic or material in a way which ensures that vocabulary is recycled and, crucially, that differences are introduced in the process. A linked skills activity, for example, involves dealing with the same material across a range of different language skills. The changes at each step need to be sufficient to allow for varied encounters with recurring words and to encourage varied use of them.

An activity like re-telling will result in varied use if certain features of the activity are adapted. One feature examined by Joe (1998) was the presence of written material for the activity. One group had a handout in front of them while they did the re-telling, while another had to put it away and work from memory. The group with the handout in front of them used more of the target words but used them in the same way as they appeared in the handout. The group without the handout used fewer target words but with variation. This clearly shows that having to rely on recall can present opportunities for varied use. Another way of encouraging varied use involves re-telling from a different perspective or presenting the material in a different way. So if the original material is a description of an incident, the re-telling could involve giving an account of it in the first person rather than in the third person, presenting it as a formal report, or acting it out as a dialogue in pairs or groups (for example, as two people who were involved in an incident, or between a reporter and a witness). The value of these changes would be measured by the resulting amount of varied use.

#### Elaboration

The final learning condition concerns the enrichment of knowledge of a word by encountering more aspects of its form, meaning, and use. Just as varied encounters and use are, cumulatively, forms of retrieval, elaboration is a form of varied encounters and use. Similarly, just as there are degrees of varied encounters and use, there are degrees of elaboration. It is also worth noting that the difference in effectiveness between elaboration and retrieval in a hierarchy of quality of processing may not be very large. In their study of memory in relation to learning content (not vocabulary specifically), Jeffrey Karpicke and Janell Blunt (2011) found that retrieval actually produced better results than the elaborative technique of linking words with related meanings in the semantic mapping activity (see Chapter 5). Let us consider a few ways in which elaboration can be stimulated in vocabulary learning.

#### **Pictures**

Pictures can help to reinforce and elaborate on the use of a word in a text. In some circumstances, pictures have a negative effect on learning, in that they divert attention from what needs to be learned. But in the most useful circumstances, a picture can provide a memorable image of the meaning and context of the word.

Keyword technique

One of the most striking ways of stimulating elaboration is the keyword technique (Pressley, 1977) (see Chapter 5). This is a memory technique that involves choosing an L1 'keyword' that sounds like the beginning of the L2 word you want to learn, then linking the keyword to the meaning of the L2 word by means of a visual image incorporating both. For example, a Japanese learner wanting to learn the English verb 'cite' (= to quote) might choose the keyword 'Saito' (a Japanese surname) and then visualize 'Mr Saito' with quotation marks around him (i.e. being cited).

Word parts

Elaboration can also occur when looking at the origins (or etymologies) of words and their relationships with other words which share the same word part (Wei & Nation, 2013).

Core meanings

Similarly, elaboration can occur when looking at the various senses of a word listed in a dictionary in order to identify the common core meaning that runs through all of the senses.

#### Deliberate or incidental elaboration?

All of the activities for generating elaboration described above involve looking analytically at a word form or meaning and relating it to other forms

of knowledge. So what about incidental elaboration? One form of incidental elaboration involves using words in authentic, memorable language, such as instantiation (Anderson, Stevens, Shifrin, & Osborn, 1978). Instantiation occurs when, in directing our attention towards a particular use of a word, we think of a specific instance of its use—that is, a specific referent. For example, the word 'rollercoaster' may be instantiated if learned through riding a rollercoaster at an amusement park. Thus, the memory associated with the word contributes to it being learned. It seems to be the case that instantiation is more likely to occur in the 'here and now' use of spoken language; encountering words in reading, particularly in reading fiction, is unlikely to result in instantiation because the learning experience is less likely to be memorable. Content-based language teaching (CBLT) and content and language integrated learning (CLIL) can both provide excellent opportunities for vocabulary learning, particularly where the instruction involves doing and applying. This is because genuine, objective-focused language use provides learners with the opportunity to instantiate and thus develop a rich range of associations with a particular concept.

#### **ACTIVITY 4.3** Identifying conditions of learning

Quickly review Table 4.2, then think of three different vocabulary learning activities that you have done with a class. For each activity, decide which conditions of learning were involved.

#### Effects of errors and wrong examples

It is important to be aware that the learning conditions of noticing, retrieval, and varied use are likely to work with errors and wrong examples in the same ways as with correct forms. This means that activities which involve choosing between two or more items, where the false choice is lexically or grammatically incorrect, can cause learners to learn incorrect forms. Where choices share lexical or formal similarities, there is also the risk of interference between correct and incorrect forms and meanings: the more similar the choices, the greater the likelihood of interference. There is some evidence for the effect of interference from research on collocations. At the very least, it seems advisable not to create or use activities that include incorrect forms. Activities involving incidental learning from input are likely to largely involve correct forms.

#### Implications for learning collocations

Frank Boers, Murielle Demechleer, Averil Coxhead, and Stuart Webb (2014) argue that deliberate attention should be given to collocations because they are difficult to learn incidentally. The reasons for this are as follows:

- 1 We have seen that most collocations are low in frequency compared to the frequency of the individual words that make them up. Very large amounts of input would be required to get a reasonable number of repetitions of the same collocation, and the lengthy intervals between the repetitions would weaken the effect of repetition.
- 2 When the collocation is composed of known parts, the importance of each part is not high, particularly if it has a rather vague meaning, as with the verbs in verb—noun collocations such as 'make a mistake', 'take your time', and 'have a rest'.
- 3 The vagueness of the meaning of a high-frequency member of a collocation may make it difficult to keep it distinct from semantically related high-frequency members of other collocations, thus encouraging interference (for example, 'take a break', 'have a rest').

On the positive side, some of the formal features of multi-word combinations that make them memorable, such as alliteration, have a positive effect on incidental learning as well as deliberate learning (Boers, Lindstromberg, & Webb, 2014). Noticing these formal features is a form of elaboration, in that it enriches knowledge of the multi-word combination.

#### Summary

Vocabulary learning depends on the occurrence of a range of learning conditions relating to the two key factors of repetition and quality of attention, and on whether the repetition or attention is incidental or deliberate. The quality of encounters with words can be shallow where the word is simply noticed, and deeper where aspects of knowledge retained from previous encounters are retrieved. Retrieval is more effective if it involves encountering words in new contexts or using them in different ways. Deliberate learning in particular is more effective if the learner actively processes the word, for example by breaking it down into its constituent parts, using mnemonic devices such as the keyword technique, or by identifying its core meaning. Part of good vocabulary pedagogy involves making sure that activities include plenty of repetitions of the target vocabulary, and that these repetitions involve high-quality encounters with the words. In the following chapter, we will examine a range of common language learning activities that set up optimal vocabulary learning conditions.

#### **Questions for reflection**

- I How important is interaction among learners in setting up good conditions for vocabulary learning?
- 2 How should a children's story book be designed to support vocabulary learning? Suggest four major design features.
- 3 How can a teacher incorporate aspects of repetition and quality of attention (noticing, retrieval, varied encounters/use, elaboration) into a reading aloud activity so as to maximize the opportunities for vocabulary learning? Consider strategies involving both deliberate and incidental attention.

#### Keys to activities

#### ACTIVITY 4.1 Analysing quality of attention

The answers depend on the degree of conscious attention paid to the word and its meaning.

I deliberate

4 deliberate

7 incidental

2 deliberate

5 deliberate

8 possibly incidental

3 incidental

6 incidental

#### Suggestions for further reading

**Barcroft, J.** (2007). Effects of opportunities for word retrieval during second language vocabulary learning. *Language Learning*, *57*(1), 35–56.

Barcroft's research looks at whether it is good to have a gloss with a word each time it occurs, or whether it is better for learners to have to make retrievals. His research has very practical implications for the way in which glossing is used in texts.

**Pressley, M.** (1977). Children's use of the keyword method to learn simple Spanish vocabulary words. *Journal of Educational Psychology*, 69(5), 465–472.

This is one of a number of early pieces of research examining the keyword technique. Michael Pressley continued researching this technique, making it the most researched vocabulary learning activity. In this carefully designed study, he separates the parts of the technique to see which part has the greatest effect.

### 5 ANALYSING VOCABULARY LEARNING ACTIVITIES

#### Introduction

As we saw in Chapter 4, certain learning conditions must be established for vocabulary learning to take place. These conditions involve repetition and significant encounters with words. These general conditions are put into practice in particular vocabulary learning activities, and the ways in which these activities are done can affect the amount and quality of learning that occurs from them. In this chapter, we look at a range of the most common vocabulary learning activities and analyse them to see what learning conditions they give rise to. We consider in particular how the activities can be used and adapted to provide the best opportunities for vocabulary learning.

#### Principles for the selection of activities

The activities included in this chapter were selected on the basis of their ability to promote both incidental and deliberate vocabulary learning. Many of the activities centre around the use of strategies and techniques which are discussed elsewhere in the book, such as dictionary use, the keyword technique, and flashcards. A further important point to note is that the activities are not mutually exclusive; many activities are enhanced by the use of additional strategies and techniques which are the focus of other activities.

The analysis of each activity follows the same format. First, a quick-reference chart provides the following information.

 Programme strand: Identifies how the activity fits within a balanced vocabulary learning programme and what skill is primarily involved, where relevant. The choice of activities in this chapter is guided by the principle of the four strands (Nation, 2007), which is discussed in more detail in Chapter 8. According to this principle, a well-balanced

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- How much classroom time should be spent teaching vocabulary?
- What is the best way to group vocabulary for learning?
- Is it useful to provide students with the L1 translations of unknown words?
- Why do some students make greater progress than others?

Extra resources are available on the website: www.oup.com/elt/teacher/hvil

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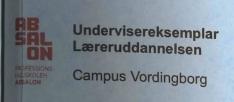
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