

Teaching and learning vocabulary

Paul Nation

This chapter looks at the teaching and learning of vocabulary both in classrooms and in independent learning. It recommends a principled approach based on a small set of well-established principles of learning and curriculum design. These principles are described as we look at various parts of a vocabulary program.

There is only a small difference between the parts of a general language course and the parts of the vocabulary components of a language course. This is because all courses should have a balance between learning through language use and deliberate learning. The learning through language use components, which should make up around three-quarters of the course time, will be the same no matter what the focus. These involve learning through the four skills of listening, speaking, reading and writing including fluency development in each of those skills.

The deliberate learning parts of a course can focus on particular skills, on particular language features such as pronunciation, spelling, grammar, vocabulary and discourse, and on the development of autonomy in language learning through training in language learning strategies and developing knowledge of how to learn a language. We will look at both learning through language use and deliberate learning in this chapter.

Providing a balance of learning opportunities through the four strands

The principle of the four strands says that a well-balanced language course should provide opportunities for learning through four equal strands – meaning-focused input, meaning-focused output, language-focused learning and fluency development (Nation, 2007, 2013b). Ideally, each strand should cover the same content material to maximise and vary the repetition of language features. While there is no research showing that the four strands should involve a roughly equal amount of time, there is a large amount of research showing the value of each of the strands. Let us now look in detail at each of the four strands.

Vocabulary learning through meaning-focused input

Meaning-focused input involves learning through the receptive skills of listening and reading. While extensive reading has received a lot of attention (Nation & Waring, 2020), it is only recently that extensive listening has begun to receive similar attention (Nation & Newton, 2020).

Extensive reading

Research shows that the single most effective change a teacher could make to a language course is to include an extensive reading program. Extensive reading involves each learner independently and silently reading large amounts of material which is at the right level for them. The reading needs to be independent because within a class all learners are typically not at the same level of proficiency and do not always share the same interests. The reading needs to be silent because reading aloud occurs at a slower speed than silent reading and learners need to read as much as they can at a reasonable speed. The learners need to read a lot of material so that they meet the words they need to learn and meet them enough times to ensure learning. The material needs to be at the right level so that the learners are not meeting words that are way beyond their current level and that are not as useful as other words at their present level of knowledge. Because the reading material needs to be at the right level, graded readers written within a controlled vocabulary are essential for learners at the beginning, elementary and intermediate levels. Fortunately, for the learning of English, there are several thousand graded readers available at a range of levels from a vocabulary size of 75 words up to 8000 words.

There has been considerable research and discussion on what is the right level. The pioneer of extensive reading, Michael West, suggested that from a vocabulary perspective, the right level should be around one unknown word in every 50 words (West, 1955). So, on a page of 300 running words there should be no more than 6 unfamiliar words. Comprehension improves as the number of unknown words decrease (Hu & Nation, 2000; Schmitt et al., 2011) and research largely supports West's figure of one unknown word in 50 or 98% coverage.

There is a very large amount of research on extensive reading showing that extensive reading has positive effects on motivation, reading fluency, reading comprehension, vocabulary growth, writing skills, grammar knowledge and general language proficiency (Nation & Waring, 2020).

Although extensive reading is classified under the strand of meaning-focused input, an extensive reading program should spend about one-third of the time on fluency development. Fluency development in extensive reading involves reading easy graded readers which contain little or no unknown vocabulary. Easy graded readers are ones that are from levels way below the learners' current level, or they may be books that the learners have read before. When they read them, learners should be trying to read them as quickly as possible with acceptable comprehension. As we shall see later, following a speed reading course can also be considered as part of an extensive reading program.

It is not difficult to set up an extensive reading program. The major requirements are books at the right level, and time to read them. Setting up a program has become even easier with availability of online extensive reading programs such Xreading. Xreading provides a wide range of excellent graded readers from most of the major publishers and provides tests and monitoring data to keep the learners on task. The cost is low.

The principle of the four strands and research on reading texts provides guidelines for how much extensive reading learners should do. Half of the meaning-focused input strand should involve extensive reading. This would occupy one-eighth of the course time. Fluency development in reading should take up one-quarter of the fluency development strand, which would be one-sixteenth of the total course time. One-eighth plus one-sixteenth equals three-sixteenths of the course time. If there were four English classes a week of around 50 minutes each, then about 40 minutes a week should be spent on extensive reading. Corpus-based research suggests that working on a 40-week school year and a five-day week (Nation, 2014a), learners should be reading around 40 minutes a week at a rather slow speed to meet the second 1000 word families of English enough times to learn them within a year and around an hour and 20 minutes a week to learn the third 1000 word families. At a moderate speed of 200 words per minute, these times would be halved, or better still, the amount of reading doubled. Learning 1000 words a year is a native-speaker rate of learning. A good extensive reading program should be able to achieve such rates.

When learners are introduced to extensive reading, the reading should be done in class time so that the learners truly understand the nature of extensive reading and are forced to do the reading. When they experience the success and enjoyment of extensive reading, some or all of the reading can be done outside of class time. Such reading should be monitored to make sure it is done. The Extensive Reading Foundation web site and Extensive Reading Central have many free resources to support extensive reading, including Moodle reader and a guide to extensive reading.

Extensive reading is easier to implement than extensive listening because there are now so many resources available to support it. Reading and reading-while-listening are also more effective at promoting vocabulary growth than listening (Brown et al., 2008). However, with more research and practice on extensive listening, extensive listening can also be a major contributor to vocabulary growth.

Extensive listening

The other half of the meaning-focused input strand is extensive listening. The requirements for extensive listening are similar to those for extensive reading. Extensive listening involves learners listening to large amounts of material which is at the right level for them. Extensive listening can include several different kinds of input – listening, listening while reading, viewing (watching films and TV series), and viewing with captions. Because it is difficult to control the vocabulary level of listening material, extensive listening requires various kinds of support so that the material is comprehensible and supportive for vocabulary learning. This support can include the use of written versions for study before listening or while listening, captions, the choice of familiar topics, pictures and visual accompaniment, repetition, support from the speaker, peer interaction and narrow listening.

Extensive listening can include a wide variety of material. Some may involve interaction with a speaker or speakers as in conversation and formal discussions. Some may involve listening while viewing, such as movies, TV programs or YouTube clips. Some may involve listening where a written version may also be available, as with listening to graded readers, pop songs or TV shows and movies. Informal spoken material tends to use a smaller vocabulary than written material but a vocabulary size of at least 2000 to 5000 words is needed to cope with such listening. Fortunately, technology now allows the slowing down and speeding up of listening material without much distortion of the sound and, combined with repetition and the use of transcripts, this can make listening easier.

As with extensive reading, an extensive listening program should include fluency development, with around one-third of the time in the extensive listening program given to easy extensive listening including activities such as repeated listening, listening to stories, 4/3/2 (Nation, 2013b), Quicklistens (Millett, 2014) and listening to easy graded readers.

Even with various kinds of support, knowing the vocabulary in a listening activity is important for successful listening.

Vocabulary learning through meaning-focused output

Meaning-focused output involves speaking and writing, and speaking and writing activities can push learners to make productive use of their vocabulary. This can strengthen and enrich knowledge of words. Being ready to make productive use of vocabulary requires stronger and more knowledge than is required for receptive use in listening and reading. This knowledge can be developed through the deliberate study of vocabulary and can also be at least partly developed through substantial receptive use.

Although we talk of extensive reading and extensive listening, there is no mention of extensive speaking and extensive writing, although there is plenty of justification for using such terms. “Extensive” needs to include the idea of large amounts but it also needs to include the idea of a variety of different uses of a skill. Extensive reading needs to include not only large amounts of reading

but also a variety of different kinds of reading – fact, fiction, short pieces of writing, novels, academic books, recipe books, newspapers, magazines, blogs, instructions, texts and emails. Similarly, extensive speaking and writing need to cover a variety of text types that are relevant to learners and that take account of the growing digital and multimodal nature of communication (Hockly, 2012). Digital story-telling has become a focus in some classrooms (Hafner, 2014) involving video production which integrates a range of receptive and productive language skills.

The integration of the skills of listening, speaking, reading and writing increases the opportunities for the repetition and varied use of vocabulary. Covering the same content through different skills sets up ideal conditions for informal vocabulary learning. In classes which have an academic focus, the process of gathering information about a topic from a variety of sources, discussing it with others, organising ideas and making written, oral and audiovisual presentations of the data is likely to greatly benefit vocabulary learning. Because around 20% to 30% of the running words (tokens) in an academic text involve topic-related vocabulary (Chung & Nation, 2003), it is important that each learner has a topic that is particularly relevant to their academic study or professional needs. Where it is not possible to match a learner to a highly relevant topic, it is useful to choose a topic where the topic-related words are high frequency or mid-frequency words.

The deliberate learning of vocabulary

The language-focused learning strand includes various ways of giving attention to vocabulary and other aspects of language learning. Some of the ways involve teaching and others involve the learners taking responsibility for their own learning. A course in English as a foreign language which includes deliberate attention to vocabulary will have advantages over a course that does not have a focus on vocabulary. This is largely because the deliberate learning of vocabulary using word cards or flash card programs is so effective in quickly expanding a learner's vocabulary knowledge up to a level where they can more easily deal with text which is written within a controlled vocabulary. The kind of knowledge focused on learning from flash cards is largely familiarity with the form of a word and its form-meaning connection. While this is very limited knowledge, it is nonetheless essential knowledge for using a word, and is readily enriched through meetings in context during language use.

There are very useful guidelines for making and using word cards which are well supported by research (Nakata, 2020). There are also useful related guidelines when designing or choosing flash card programs (Nakata, 2011). These guidelines include doing spaced retrieval, using a first language translation to represent the meaning, doing both receptive and productive learning (look at the word, recall the meaning, and look at the meaning and recall the word form) if the words are needed across all the four skills, using a core meaning that covers all the senses of the word, using mnemonic tricks like word part analysis and the keyword technique (Nation, 2013a) to help difficult words stick in memory, saying the word aloud when learning it and generally keeping the cards simple.

The research on word card and flash card learning (Nation, 2013a, Chapter 11) shows that a large number of words can be quickly learned, the learning is retained for a long time and the learning helps language use. The research also shows that learners differ considerably in their skill at learning from word cards, so systematic training in this very useful strategy is necessary.

There are other word learning strategies that fit into the language-focused learning strand. These include using word parts (Wei & Nation, 2013), guessing from context and using dictionaries to help vocabulary learning. These strategies all require training. The time spent on training is well justified by the large number of words that the strategies can be applied to.

The language-focused learning strand also includes intensive reading which may be in the form of grammar-translation, teaching vocabulary and doing vocabulary exercises such as those in course books.

The language-focused learning strand also includes activities that do not have a vocabulary focus such as pronunciation practice, grammar learning, discourse skills and guided activities for listening, speaking, reading and writing such as dictation, substitution tables, blank filling and cloze activities, and picture composition. The time given to the language-focused learning strand should be no more than one-quarter of the course time, so it is very important that teachers prioritise activities that are most effective so that the language-focused learning strand does not take over most of the course time as it does in many poorly planned courses.

Vocabulary learning through fluency development

The fluency development strand involves a separate focus on each of the four skills of listening, speaking, reading and writing. The fluency development strand has the goal of helping learners make the best use of what they already know. Fluency development activities should not involve unfamiliar language features. Useful fluency development activities include listening to stories, speed-controlled listening, 4/3/2, repeated speaking, easy extensive reading, speed reading, repeated writing and 10 minute writing (Nation, 2013b).

Fluency development activities strengthen and enrich knowledge of words that the learners have already met and encourage the development of collocational knowledge through repetition and restructuring. They also increase the speed with which learners can use the language and thus increase the opportunities to learn from input and output.

Planning a vocabulary program

There are two major focuses when planning a vocabulary program: deciding what vocabulary will be focused on and deciding how to focus on it. Let us look first at what vocabulary to focus on.

If we look at a frequency count of vocabulary in a text or a collection of texts, we will see that some of the words occur very frequently and well over half of the different words occur only once or twice. The most efficient way to learn vocabulary is first of all to learn the words that occur many times because learners will meet these words often and it will help comprehension if they already know them. These frequent words are also words that are needed for speaking and writing. The 3000 most frequent words of English cover around 90% of the running words of written text and around 95% of spoken text. These are clearly very useful words to know. There are several available lists of these high frequency words and while some are more carefully made than others, learners would gain great benefit by learning the words in any of the frequency-based lists. The BNC/COCA lists can be downloaded from the Victoria University of Wellington web site (www.wgtn.ac.nz/lals/resources/paul-nations-resources/vocabulary-analysis-programs) and an account of them and the research on them can be found in Nation (2016). Other high frequency lists include those made by Brezina and Gablasova (2015), and Browne (2014). Although graded readers use various word lists produced by publishing houses, most of the words in the graded reader lists are from the 3000 high frequency words of English.

The 3000 high frequency words are not enough to deal with listening to and reading unsimplified texts, so from a frequency perspective the next words to learn are the 6000 mid-frequency words which include the fourth to ninth 1000 word families. The 9000 high and mid-frequency words provide learners with over 98% coverage of the running words in most written text including newspapers, magazines and novels. The high and mid-frequency words need to be learned by meeting them across the four strands of a course, including listening, speaking, reading and writing, and deliberate study of vocabulary. Native speakers learn the first 9000 words of English at a rate of roughly 1000 words a year (Coxhead et al., 2015), and largely know them by the time they enter secondary school around the age of 13. Non-native speakers can also learn the vocabulary of English

at this rate, especially where English is learned as a second language. To reach this rate learners of English as a foreign language, especially those whose first language is not related to English, would need very large amounts of input over many years.

Using word frequency lists to plan the vocabulary learning in a course is applying the cost/benefit principle. The cost/benefit principle says that the cost of learning should be repaid by getting the greatest possible benefit from the learning. The cost of learning is the time and effort involved in learning. The benefit from learning vocabulary comes from the opportunities to meet and use the vocabulary. By learning high frequency vocabulary first, learners get the greatest benefit from their learning.

A well-planned vocabulary course is based on knowledge of learners' current vocabulary size and ensures that the high frequency words are well-known through large amounts of extensive reading and extensive listening and through deliberate study using word cards or flash card programs. It also involves training learners in the use of vocabulary learning strategies and making them aware of the nature of word frequency and the levels of high, mid- and low frequency words.

The second major focus in planning a vocabulary course is providing a balance of opportunities for learning across the four strands. Each lesson need not contain a balance of the four strands but over the period of a month or two, there should be a roughly equal amount of time given to each strand. This calculation of time should include work done in class and also work done outside class. The way to check if there is a balance is to keep a record of the activities done in class and the amount of time spent on each activity. Each activity then needs to be classified into the appropriate strand and the time spent added up. It should be roughly equal for each strand, and if it is not, then some adjustments need to be made to the running of the course.

Knowing where learners are in their vocabulary growth

Planning a course involves knowing where learners are in their vocabulary growth. There are tests available to help with this. For elementary and intermediate learners of English as a foreign language, the recent vocabulary level tests are the best measures (Webb et al., 2017; McLean & Kramer, 2015). Both of these tests are available from Paul Nation's web site. These level tests look at each of the first five 1000 word levels, and determine if each level has enough test items to ensure a good degree of reliability for each level. For low proficiency learners it may be enough to use just the first two or three levels to measure knowledge of the high frequency words. For intermediate learners, it may be enough to assume knowledge of the first 1000 or 2000 words and just use the third to fifth 1000 levels.

For advanced learners of English, particularly those learning English as a second language, the Vocabulary Size Test may be the most appropriate measure (Nation & Beglar, 2007). For young learners of English as a second language and for learners who are not literate in English, the Picture Vocabulary Size Test is an appropriate measure. This test is available from Laurence Anthony's web site.

Autonomy and vocabulary learning

There is such a lot of vocabulary to learn that it is important that learners take control of their own vocabulary learning. Taking control involves understanding the nature of vocabulary, understanding the principles of vocabulary learning and becoming skilled at using vocabulary learning strategies. Understanding the nature of vocabulary involves knowing about the frequency levels of vocabulary (high, mid- and low frequency words), and knowing that many words are not repeated enough to ensure learning and so learners need to use word cards or flash card programs to support the learning of those words. In the next section we will bring together the principles of vocabulary learning. Learners should explicitly memorise these principles and be aware of how to apply them. There is a free electronic book, *What do you Need to Know to Learn a Foreign Language?*, on Paul Nation's

web site that draws on the principles (Nation, 2014b). Now, however, let us look at the most useful vocabulary learning strategies.

The strategy of guessing from context involves the use of context clues, background knowledge and common-sense to guess the meaning of unfamiliar words met in reading and listening. The skills and conditions needed for guessing from context are the same skills and conditions needed for reading with good comprehension. Guessing is a trainable strategy (Walters, 2004, 2006), and there is a test to measure learners' control of the strategy (Sasao & Webb, 2018). A guess from context typically results in small increases in knowledge of the word, but this knowledge accumulates with each guess as long as there is plenty of comprehensible input. Training in guessing can occur during intensive reading. Training can focus on context clues in the immediate and wider context (Clarke & Nation, 1980). Guessing from context is most likely to be successful if it occurs in meaning-focused input where the unfamiliar words make up 2% or less of the running words.

We have already looked at the word card or flash card strategy and the guidelines for using it. Learners should practice the strategy in class, perhaps working in pairs, and should be able to state and apply the principles of spaced repetition, retrieval and quality of processing.

The word part strategy involves the skill of breaking a complex word into known parts and relating the meaning of the parts to the meaning of the whole. Developing skill in this strategy involves learning a relatively small group of prefixes and suffixes and practising breaking up words into their parts. Sasao and Webb (2017) have developed a test of the most useful prefixes and suffixes of English. Wei and Nation (2013) provide lists of the most frequent and useful word stems. Because English borrowed vocabulary from French, Latin and Greek, the word part strategy is one that can be used a lot when learning English. The word part strategy is a kind of mnemonic, helping words stick in memory. It is a dangerous strategy to use when guessing words from context, but can be used to check guesses.

The dictionary strategy is more than just looking up a word in a dictionary. It involves gathering as much information as possible from the dictionary to enhance the learning of a word. This can involve giving attention to the pronunciation of the word, looking at any examples of the word in a sentence to see what words it occurs with and in what patterns, and looking at other entries near the word to see if there are morphologically related words. It also involves looking through the various senses of the word to work out the core meaning of the word.

Each of these strategies requires repeated attention in the classroom in order to help learners gain the knowledge needed to understand and apply the strategy. Learners also need plenty of practice in applying the strategy so that it becomes easy to use the strategy. This all involves the investment of classroom time little by little over several months. The use of this time is easily justified by the usefulness of the strategies.

Principles of vocabulary learning and learning conditions

We have looked at the principle of the four strands as a way of making sure that learners get a balance of opportunities for learning. The most important part of understanding the four strands is understanding the conditions that typify each strand. If these conditions do not exist, then the strand does not exist.

The meaning-focused input strand requires only a small proportion of unfamiliar language items. If there are a lot of unfamiliar words, then it becomes hard to focus on the message and it is difficult to cope with large amounts of input. The research suggests that no more than 2% of the running word should be unfamiliar (Schmitt et al., 2011). These unfamiliar words provide opportunities for learning new words through guessing from context or dictionary look-up, and yet are few enough to allow reasonably fluent reading or listening. Having a focus on the message encourages enjoyment

Table 28.1 The four strands and the conditions needed for each strand

<i>Strand</i>	<i>Conditions</i>
Meaning-focused input	Some unfamiliar vocabulary (2%) A focus on the message Large quantities of input
Meaning-focused output	Slightly challenging output A focus on communicating Large quantities of output
Language-focused learning	A focus on language items Deliberate study
Fluency development	No unfamiliar vocabulary or grammar, and familiar content Pressure to perform faster Quantity of practice Focus on the message

and feelings of success which will help to maintain further reading. Having large quantities of input supports the critical condition of repetition which is needed for learning to occur. Table 28.1 summarises the conditions for each strand.

The meaning-focused output strand requires similar conditions to meaning-focused input, except that the focus is on output. Challenging output includes having to use partly unfamiliar vocabulary, having to deal with unfamiliar topics and having to perform with real-time pressure.

Language-focused learning involves focusing on vocabulary, grammar, sounds, spelling or discourse. It involves learning language features and learning about language. There has been some debate about whether the deliberate study of language provides the kind of knowledge needed for normal language use (Krashen, 1985). Research on vocabulary learning (Elgort, 2011), however, has shown that the deliberate learning of vocabulary establishes both explicit knowledge and the implicit knowledge needed for normal language use. The major problem with language-focused learning is that it tends to occupy too much course time, taking time away from meaning-focused input and fluency development.

The major condition for the fluency development strand is that the activities should be easy. That is, they should not involve unknown vocabulary or grammar and should draw on existing content knowledge. Because the activities are easy, they allow learners to perform at a higher than usual speed. Fluency development activities should contain some pressure to increase the speed of language use largely through time pressure. As with the other message-focused strands, fluency development requires time-on-task. The time-on-task principle says that if you want to become good at doing something, spend a lot of time doing it. If you want to be good at reading, read a lot. If you want to be good at speaking, speak a lot. Although this is a simple, quantity-focused principle, it is a very effective principle. Courses which provide plenty of opportunities to use the language produce learners who are good at using the language. As with meaning-focused input and meaning-focused output, fluency development is focused on language use. It involves the communication of messages. Fluency is not of great use unless it is connected to the communication of meaning either receptively as in listening and reading, or productively as in speaking and writing. That is why speed reading courses (see Sonia Millett's material, www.wgtn.ac.nz/lals/resources/paul-nations-resources/speed-reading-and-listening-fluency) contain comprehension questions.

Vocabulary learning does not occur through some magic process. It occurs because various principles are applied that put good learning conditions into practice. Let us look at two examples before

we bring together a set of vocabulary learning principles. The first example, extensive reading, is a message-focused activity, and the second example, learning from word cards, is a deliberate learning activity.

When learners do extensive reading, they may meet words that they have not met before. This provides an opportunity to focus deliberately on vocabulary through guessing from context or through dictionary look-up. Ideally, less than two words in every one hundred should be new words so that learners' reading is not interrupted too much by the need to deal with words. If learners apply the time-on-task principle and read a lot, they are also increasing the likelihood that previously met words will occur again, thus allowing the very important condition of repetition to occur. The more words are repeated, the more likely they are to be remembered. The most effective repetition is spaced repetition. Spaced repetition occurs when an item is met and then some time passes before it is met again. Reading sets up good opportunities for spaced repetition, especially for high frequency words and topic-related words. The best repetition also involves good quality processing. The quality of processing principle says that the more deeply and thoughtfully words are processed, the more likely they are to be remembered. One way of adding quality to a repetition is by deliberate attention. Words that are deliberately focused on are more likely to be remembered. In language use, a very important way of adding quality of processing is through retrieval (Nakata, 2020). Retrieval occurs with words we already know something about. When we read and we meet a word that we have met before, we have the opportunity to retrieve the meaning of this word from our memory. Each successful retrieval strengthens the connection between the word form and its meaning. It also provides us with a successful recognition of the word form. Because in extensive reading we are likely to meet more partially known words than completely unknown words, extensive reading provides lots of useful opportunities for retrieval. There is a further way in which quality is added to a retrieval in extensive reading. When we meet a word we have met before and this word is in a different form or in a different context, then that varied meeting helps learning much more than if the word was met exactly as it appeared before. In reading, repetitions of words typically involve new phrase and sentence contexts and some words may occur with a different inflected form or with a derivational suffix or prefix (*sing-singer, cover-uncover*). So, in extensive reading, quality is added to meetings with words through spaced repetition, through retrieval and through varied meetings. Extensive reading is a very effective way of increasing vocabulary knowledge because it sets up effective conditions for learning.

Let us now look at the conditions for learning in our second example. Learning from word cards involves putting words on to small cards and writing their first language translation on the back of the card. The cards should be small enough to be easily carried around in a bag or a pocket. The learners should know how to check which words to put on to cards by referring to frequency lists or by considering the possible future opportunities to meet or use the word. When learners work with the cards, each learner goes quickly through their own pack of cards, looking at the word form and trying to recall (retrieve) the first language translation. The reason for writing the translation on the back of the card is so that learners have an opportunity to retrieve the meaning rather than just seeing it written next to the word. Unfortunately, the retrievals from word cards are not varied retrievals but they do involve the condition of deliberate attention. Because there can be up to 50 words in a pack of cards, when a learner goes through the pack of cards several times in one session, meeting the same word again is a spaced repetition. In addition, learners should come back to their pack of cards several times after a few days. This also provides spaced repetition. As learners use the cards, they should keep changing the order of the words in the pack so that the preceding word does not end up triggering the meaning of the next word. A good flash card program takes care of reordering the words and keeps a record of successful and unsuccessful retrievals using multiple-choice items. So, word cards and flash card programs set up good conditions for vocabulary learning through spaced repetitions, deliberate learning and retrieval.

We have looked at some principles that help vocabulary learning. The cost/benefit principle makes sure that the learners are making the best use of their learning by focusing on the most useful vocabulary. The principle of the four strands makes sure that there is a range of opportunities for deliberate learning and learning through use. The principle of the four strands also sets up opportunities for the very important principle of spaced repetition. Repetition is more likely to be effective if each repetition involves the principle of a deep quality of processing through retrieval and varied meetings and use.

Learning a language involves hard work and learners need to spend time working on what they need to learn (time-on-task). They need to do lots of listening, speaking, reading and writing and lots of well-directed language study.

The principles of cost/benefit, the four strands, spaced repetition, quality of processing and time-on-task are not just principles for the teacher to understand. Learners should also memorise these principles and understand how to apply them in their learning. They need to become autonomous language learners, taking responsibility for their own learning. When learners do this, they will find that these well proven principles apply not only to vocabulary learning but to all kinds of learning.

Activities for learning vocabulary

As a way of summing up what has been covered in this chapter on the teaching and learning of vocabulary, let us look at the major activities that can contribute to the learning of vocabulary.

Each of these activities are analysed in detail in Webb and Nation (2017, Chapter 5) to show what conditions are involved in their use and how to optimise these conditions. Several of the activities can be viewed at <https://tinyurl.com/Language-Teaching-Techniques>.

In Table 28.2, conversation appears in both the meaning-focused input and meaning-focused output strands because it is a mixture of listening and speaking. Problem-solving speaking involves activities like ranking, role play and simulation focused on a problem, and problem-solving tasks (Nation, 2013b). Vocabulary learning in such activities is helped by support from others through negotiation of meaning and through repetition which arises from having to keep dealing with the problem until a solution is found. Repetition of vocabulary can be increased by organising the

Table 28.2 The most useful vocabulary learning activities in each strand

1 Meaning-focused input	Extensive reading Extensive listening Conversation
2 Meaning-focused output	Problem-solving speaking Prepared talks Conversation
3 Language-focused learning	Intensive reading Strategy training Word card and flash card learning Deliberate study and exercises Teaching
4 Fluency development	Listening to stories, Quicklistsens 4/3/2 Speed reading, Easy extensive reading 10 minute writing

activity into a series of steps (a procedure). These steps can include preparation for the task, doing the task and reporting back on the proposed solution to the task. The pyramid procedure (Jordan, 1990) involves thinking of an individual solution to the task, then working in pairs to reach agreement, then working in a group of four and then finally as a whole class. Each step of increasing group size means that the same material needs to be covered again, thus increasing repetition of the vocabulary.

In the language-focused learning strand, intensive reading can involve individual or pair work, or more typically can involve the teacher guiding the class through a text. Vocabulary and collocations can be one of the many possible focuses in intensive reading. Intensive reading may also be a useful source of vocabulary for word card learning. Strategy training in Table 28.2 involves a deliberate focus on how to learn. Most of the strategies also involve deliberate attention to vocabulary and collocations.

The fluency activities in Table 28.2 strengthen and enrich knowledge of vocabulary. One effect of fluency activities is to push the learner to work with larger units of language, words rather than letters, word groups rather than individual words.

The learning of vocabulary does not just occur where there is a deliberate focus on vocabulary. It should occur across all four skills and all four strands. In well-planned courses, using the language through listening, speaking, reading and writing is supported by deliberate learning and using the language also provides vocabulary for later deliberate learning. Through all the opportunities for learning vocabulary both teachers and learners should be trying to put the principles of cost/benefit, the four strands, spaced repetition, quality of processing and time-on-task into practice so that the most favourable conditions for vocabulary learning occur.

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