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Thinking Allowed

Research into practice: Vocabulary

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*This article is a personal view of the application of research on vocabulary to teaching and
how there are three different types or categories of relationship between that research and
the teaching to which it is applied: first, where the research is not applied or not applied well,
second, where it is reasonably well applied, and third, where it is over-applied. For each of
these three categories, I look at what I consider to be the most important areas of research
and suggest why they fit into that category. The topics covered include planning vocabulary
courses, distinguishing high frequency and low frequency words, extensive reading, the
deliberate learning of vocabulary, academic vocabulary and vocabulary teaching.*

Editorial note

T1

1. Introduction

In the 1980s, research on second language (L2) vocabulary learning was considered to
be a neglected aspect of second language acquisition (SLA) research (Meara 1980). This

30   situation has changed strikingly, with over 30% of the research on L1 and L2 vocabulary
31   learning in the last 120 years occurring in the last 12 years. Because this research is largely
32   within the area of applied linguistics, it is important that its findings move forward into
33   teaching. In this overview, I give a personal view of the application of research on vocabulary
34   to teaching and how there are three different types or categories of relationship between
35   that research and the teaching to which it is applied: first, where research is not applied
36   or not applied well, second, where it is reasonably well applied, and third, where it is
37   over-applied. For each of these three categories, I look at what I consider to be the most
38   important areas of research and suggest why they fit into that category. The topics covered
39   include planning vocabulary courses, distinguishing high frequency and low frequency words,
40   extensive reading, the deliberate learning of vocabulary, academic vocabulary and vocabulary
41   teaching.

42   It may be worth explaining the viewpoint from which I am making the observations in
43   this article. Most of my teaching experience is at pre-university level and in teacher-training
44   institutions. However, the language teaching methodology courses I teach try to serve teachers
45   at all levels, and I think that the principles shaping a good language course are much the
46   same at any level of language proficiency. My viewpoint, then, is primarily as a researcher
47   and writer about vocabulary teaching and learning, but one who has continual contact with
48   teachers, both ESL and EFL teachers.

49   The aim of this paper is to look at gaps in the application of research findings. There are
50   also gaps in research, and two recent books (Schmitt 2010; Nation & Webb 2011) explore
51   these gaps and provide guidelines for future research.

2. Vocabulary research findings that have not been well applied

2.1 Planning a vocabulary course

54   The most important job of the vocabulary teacher is to plan. Planning involves choosing the
55   most appropriate vocabulary for a particular group of learners and making sure that there is
56   a suitable balance of opportunities for learning. Most models of curriculum design (Graves
57   2000; Nation & Macalister 2009) include needs analysis, environment analysis (sometimes
58   included as part of needs analysis) and the application of well supported principles of learning.
59   Needs analysis involves looking at where the learners are now in their knowledge and where
60   they need to go in order to be able to do the things that they want to do (Nation 2006). From
61   a vocabulary perspective, measuring learners' vocabulary size, or at least their knowledge of
62   the high-frequency words of the language, is an important part of needs analysis. There are,
63   however, dangers in using vocabulary tests, the most significant of these being that the learners
64   do not take the test seriously, so the scores do not reflect their true knowledge. Although there
65   are now several measures of vocabulary knowledge freely available (see www.lextutor.ca, and
66   www.victoria.ac.nz/lals/staff/paul-nation.aspx), it is unusual to find teachers who have a
67   well supported idea of what vocabulary their learners already know. As a result, language
68   courses often contain a mixture of useful vocabulary and vocabulary that by no means
69   represents the best choice for those learners. Research by McNeill (1994), for example,

70   found that teachers did not have good intuitions about what vocabulary their learners
71   know.

2.2 High frequency and low frequency words

73   A person's vocabulary is made up of high frequency and low frequency words. This distinction
74   is embodied in Zipf's law (Zipf 1949), which describes the rapid drop in frequency of words
75   in a frequency-ranked list. Palmer & Hornby (1937) and West (1953) used Thorndike's word   **Q1**
76   counts to make 1000 and 2000 level lists for teaching, and these lists certainly informed
77   the development of lists for graded reader schemes. Research on text coverage by words at
78   various frequency levels highlights the importance of the high-frequency words (Nation 2006).
79   The high-frequency/low-frequency distinction is an important one, because teachers should
80   deal with high-frequency words very differently from the way they deal with low-frequency
81   words (Nation 2001). The idea behind this distinction is that the high-frequency words make
82   up a relatively small, very useful group of words that are important no matter what use is
83   made of the language. Because each word in this group is frequent, the learners will get a
84   very good return for learning them. The low-frequency words, on the other hand, consist
85   of tens of thousands of words that occur very infrequently, are often restricted to certain
86   subject areas, and thus do not deserve any substantial amount of classroom attention. Once
87   they know the high-frequency words of the language, the learners need to learn the low-
88   frequency words, preferably in a rough order of importance for them (see Nation 2009 for a
89   description of the numbers of words in a text at various low-frequency levels). From a teacher's
90   perspective, the best approach to low-frequency words is through training in strategies such
91   as guessing from context, deliberate learning using word cards and mnemonic tricks like
92   the keyword technique and word parts, and using dictionaries to help learning. These
93   strategies are so widely useful that they justify the use of classroom time. The goal of strategy
94   training is that learners will eventually be able to use the strategies without the help of a
95   teacher.
96   Most teachers are aware of the finding that there are very useful high-frequency words,
97   but the idea of vocabulary control and selective principled attention to certain kinds of words
98   is an idea that teachers are often reluctant to take on. One source of this reluctance comes
99   from teachers who were trained as teachers of native speakers. It is generally considered
100   that when teaching native speakers, exposing learners to a rich and varied vocabulary is
101   helpful, because when they come to school, young native speakers already have quite a
102   large vocabulary (somewhere between 3000 and 5000 word families) which includes most
103   of the high-frequency words of the language. The situation, however, is very different for
104   non-native speakers learning EFL. When they begin learning English, they may already
105   know some English words that exist as loanwords in their L1 as well as English words
106   they have met in their daily life. In most cases this is likely to be only a few words,
107   and their major job is to learn the high-frequency words of the language as quickly as
108   possible, a task that is made easier if they meet these words often, focus deliberately on
109   them (Elley 1989), and are not distracted by substantial numbers of low-frequency words
110   (Nation & Wang 1999; Nation 2009). The reason for a lack of planning of vocabulary

111 learning is probably that teachers do not think that vocabulary learning needs to be
112 planned, and if it does the course book will take care of that. Usually, the course book does
113 not.

2.3 Extensive reading

115 A very useful way of learning high-frequency words is to do extensive reading with graded
116 readers. Graded readers are books which are specially written using a controlled vocabulary
117 and are available at various levels from as low as 100 words to somewhere around 3000 words.
118 There are numerous series of graded readers and every major ELT publisher has their own
119 series, sometimes more than one. Most teachers are familiar with graded readers, and may
120 be aware of the research which shows that including an extensive reading component in
121 a language course can have very positive effects on vocabulary growth and a wide range
122 of other aspects of language knowledge and language use (Elley & Mangubhai 1981).
123 However, only exceptional schools seem to include a graded reading program as a part **Q2**
124 of their language courses. There are several reasons why there is a reluctance to set up an
125 extensive reading program. One is a lack of knowledge of the research on extensive reading,
126 although most teachers who have engaged in any professional development program are
127 likely to be aware of this research. Another could be lack of funds to buy the graded readers
128 needed to set up a program, but this is unlikely to be a major reason, because there are
129 various ways of setting up an extensive reading program without too much expenditure
130 (Waring 2000). The most important reason is likely to be a lack of time in the language
131 program, combined with the belief that direct teaching will make more effective use of
132 this time. If learners have only four or five hours of English a week, devoting one of these
133 hours to extensive reading may seem a frivolous thing to do. Related to this is the idea
134 that extensive reading should be enjoyable and should not involve a lot of teacher input.
135 Teachers may feel somewhat guilty if almost a quarter of their English class time does
136 not involve them teaching and the learners are involved in what seems like a leisure time
137 activity.
138 The obvious solution to this is to set extensive reading as homework, but, depending
139 on the learners, this may end up as work that only a few learners do. Research
140 by Takase (2007), however, shows that if extensive reading is initially given a small
141 amount of classroom time while the learners become used to it, the amount of extensive
142 reading done at home can increase greatly. Fortunately, this reluctance of teachers
143 to set up proper extensive reading programs has now become a focus of research
144 (Macalister 2010), and this may help us understand why a well-researched activity like
145 extensive reading is still not a commonly accepted and applied part of an English
146 course.
147 An important reason why extensive reading is not as widespread as it should be is that
148 many teachers misuse the term. That is, they do what they call extensive reading, but it bears
149 a closer resemblance to intensive reading. Replacing an inappropriate existing meaning for a
150 term by a new one may be a daunting task.

151 ## 2.4 Rote learning of vocabulary

152 So far, we have looked at two research findings that are not well applied: the idea
153 of setting vocabulary goals and using vocabulary control to help reach them, and
154 extensive reading programs. The third finding I want to focus on is sometimes set up
155 as in opposition to something like extensive reading. This is the idea of using bilingual
156 word cards for deliberate decontextualised rote learning of vocabulary. Learners have
157 known the value of this for a very long time, but teachers tend to see it as the very
158 opposite of what they are supposed to do in a communicative approach to language
159 teaching.

160 There has been a long history of research into the deliberate learning of vocabulary
161 (Thorndike 1908; Griffin & Harley 1996). Much of this research has been done in psychology
162 as a part of research on memory and forgetting (Pyc & Rawson 2007). The findings
163 are very clear. A large amount of vocabulary can be very quickly learnt and retained
164 for a long period of time by using spaced retrieval and, where necessary, mnemonic
165 techniques such as the keyword technique (McDaniel, Pressley & Dunay 1987). Vocabulary
166 which is quickly learnt in this way is not quickly forgotten. The use of the L1 and
167 pictures to provide the meaning for words is generally more effective than the use of L2
168 definitions. There is now research (Elgort 2011) which shows that such learning not only
169 results in explicit knowledge but also results in implicit knowledge, which is the kind of
170 knowledge needed for normal language use. This recent finding is not yet well known
171 and suggests that the learning of vocabulary is different from the learning of grammar, as
172 research on grammar indicates that deliberate learning does not directly result in implicit
173 knowledge.

174 As we saw earlier in this paper, learners need large vocabularies in order to deal with
175 unsimplified material without a great deal of outside support (Nation 2006). The deliberate
176 learning of vocabulary using word cards is one way of speeding up learners' progress towards
177 an effective vocabulary size. This deliberate learning, however, must be seen as only one part of
178 a well balanced learning program. About one quarter of the time in a well planned program
179 should involve deliberate learning, and of this, learning using word cards should occupy
180 about a third or a quarter (Nation 2007). Learning using word cards can be done efficiently
181 or inefficiently, and learners need guidance on the principles behind efficient learning. These
182 principles are strongly research-based and include the use of spaced retrieval (Pyc & Rawson
183 2007), mnemonic techniques where necessary (Pressley 1977), reordering of the word cards
184 to avoid serial learning, the L1 and pictures to represent the meaning of the words (Laufer
185 & Shmueli 1997), repetition, and the avoidance of interfering items (Tinkham 1997; Waring
186 1997). Learners benefit from training in the application of these principles, but very few
187 teachers seem prepared to make such strategy training a regular part of their vocabulary
188 program. The solution that I use to overcome this reluctance is the principle of the 'four
189 strands' (Nation 2007), which sees a well-balanced program as consisting of four equal parts:
190 meaning-focused input, meaning-focused output, language-focused learning and fluency
191 development. Three of these parts are strongly message-focused, so a focus on deliberate
192 learning is well balanced by the overwhelming focus on understanding and conveying
193 messages. One effect of the four strands is to place the deliberate vocabulary learning in

194   the wider curriculum context so that it is not seen as an alternative to communicative
195   learning but as a support.
196   It is also important that teachers see the learning of vocabulary as a cumulative process
197   in which deliberate learning using cards is just one step (but a very significant one) in the
198   eventual rich knowledge of a word.

3. Vocabulary research findings that have been well applied

3.1 Academic vocabulary

201   Coxhead's (2000) research on the Academic Word List is widely known by teachers and course
202   designers, as is indicated by the number of texts based on the word list (see, for example,
203   Schmitt & Schmitt 2005; Zimmerman 2007), and the number of websites which make use of
204   the list.
205   The Academic Word List contains 570 word families divided into ten sublists. The list was
206   made by finding words that were wide ranging and frequent in academic texts but which
207   were not in the first 2000 words of English. The corpus used for the study included texts
208   from the humanities, science, commerce and law. The Academic Word List covers around
209   10% of the running words in academic text. When this is added to the roughly 80% coverage
210   provided by the first 2000 words of English, for a relatively small amount of learning learners
211   have access to a very large proportion of the running words in a text. The Academic Word
212   List also covers around about 4% of the running words in newspapers, which is much better
213   coverage than that provided by the third 1000 words of English.
214   The most obvious reasons for the widespread use of the Academic Word List are that it
215   is a resource that is immediately applicable, and that Coxhead made the list freely available
216   in a variety of formats. There is also the additional reason that the most obvious users of the
217   list are teachers at tertiary level, and it is they who are most likely to have done specialist
218   courses in the teaching of English as a second or foreign language. As a part of this academic
219   training they are likely to have come in contact with the idea of academic vocabulary and
220   the Academic Word List itself.
221   There have been critics of the list (Hyland & Tse 2007), whose criticisms are justified,
222   although they are aimed mainly at turning the list into something that it was not intended to
223   be. The strength of the list is that it applies to a wide range of academic areas. At the same
224   time this is its weakness, because words are used in a particular academic area might not be
225   used in exactly the same way in another, although research by Wang & Nation (2004) showed
226   that there is very little homonymy in the list.

3.2 Other findings

228   Generally, teachers are aware that learners need multiple exposures to vocabulary in order
229   to learn it, and that learning a word involves several aspects of knowledge. They are also
230   aware of the importance of multiword chunks in language learning, and recent research being

231 published on this, particularly that providing readily accessible lists of multiword chunks, is
232 likely to be well applied.

4. Vocabulary research findings that have been over-applied

234 While the communicative approach initially had a largely negative effect on the deliberate
235 teaching and learning of vocabulary, teachers have continued to see the importance of giving
236 direct attention to words. There is plenty of evidence to show that the deliberate learning of
237 vocabulary is an effective means of increasing vocabulary size. This evidence is of three main
238 types.
239 Firstly, there is evidence from studies involving both deliberate learning and incidental
240 learning (Hulstijn 1992; Barcroft 2009; File & Adams 2010). In each case, deliberate learning
241 results in more learning than incidental learning. From my perspective, I find it hard to get
242 excited about this comparison, though it does provide evidence for the value of deliberate
243 learning. One reason for my lack of enthusiasm is that I see both kinds of learning, incidental
244 and deliberate, as essential parts of a well-balanced program; another is that they promote
245 different aspects of vocabulary learning. Explicit deliberate learning is probably best for
246 learning the more salient aspects of word knowledge, particularly the form-meaning link. It
247 is quite hard to acquire the contextual aspects of word knowledge from this kind of learning,
248 such as collocations and frequency intuitions. Conversely, these are exactly the kinds of word
249 knowledge enhanced by widespread exposure and the incidental learning that comes from
250 it, even though the rate and efficiency of learning is much less.
251 Any program offering only one of these kinds of learning would be a very deficient program
252 indeed. Another reason for my lack of interest in comparisons of deliberate and incidental
253 learning is that they tend to not take into account other types of learning that come about
254 through incidental learning. For example, if vocabulary learning occurs during reading, what
255 improvement also takes place in grammatical knowledge, in reading skill and in knowledge
256 of the world?
257 Secondly, studies such as those by Waring & Takaki (2003) and Pigada & Schmitt (2006)
258 appear to demonstrate the different strengths and kinds of vocabulary learning that can occur
259 incidentally, leading us to suspect that earlier studies using single measures of vocabulary
260 gain may have underestimated the amount of vocabulary learning that occurs. Incidental
261 vocabulary learning rates are necessarily rather low because there are so many other things
262 that learners need to give attention to when such incidental learning occurs. However, this
263 may be regarded as implicit evidence against incidental, and in favour of deliberate, learning. **Q3**
264 Thirdly, there is very strong evidence for the value of deliberate learning from studies that
265 focus only on deliberate learning. The very long history of published studies of this type
266 includes studies by Thorndike (1908), Webb (1962), Lado, Baldwin & Lobo (1967), Crothers
267 & Suppes (1967), Beaton, Gruneberg & Ellis (1995), Griffin & Harley (1996). These studies
268 consistently show very high rates of learning over relatively short periods of time with good
269 long-term retention. There is now also evidence (Elgort 2011) that this kind of learning results
270 immediately in implicit knowledge that is characterised by being subconsciously and fluently
271 available and well integrated into the learner's language system.

4.1 Vocabulary teaching and vocabulary exercises

These three kinds of evidence strongly support the idea of giving deliberate attention to words. However, the acquisition of vocabulary may be overemphasised if it is done largely through teaching rather than learning. There is an important distinction to be made between vocabulary teaching and vocabulary learning. As commonsense and research evidence tells us, teaching does not necessarily lead to learning. Some recent studies provide useful evidence of this. Walters & Bozkurt (2009) found in a study involving vocabulary notebooks that even with the sustained deliberate attention needed when using the notebooks, only about 40% of the vocabulary notebook words were learnt receptively and 33% productively, clearly indicating that teaching does not equal learning. File & Adams (2010) found in their experimental study that teaching had a 35–48% effect for the vocabulary deliberately taught, as measured by **Q4** an immediate post-test. The evidence from L1 studies is even less impressive in terms of time spent on teaching vocabulary and the number of words actually learned (Carlo et al. 2004).

There is also evidence from research which tests the involvement load hypothesis (Hulstijn & Laufer 2001; Folse 2006; Webb 2007; Kim 2008; Keating 2008) that the amount of vocabulary learning from vocabulary-focused activities is only a small proportion of the words actually studied. Keating (2008), for example, found that sentence writing – the most effective activity – resulted in around half of the words being learned. Other activities, such as texts with glosses and read-and-fill-in-the–blanks, had poorer results. Hulstijn & Laufer (2001) had slightly better but by no means perfect scores with the same activities. Folse's (2006) best activity, using the same word to complete three sentences, also resulted in around half of the words being learned. These low learning rates are not criticisms of these studies, and quoting them is a bit unfair in that the studies are designed to avoid floor or ceiling effects in their results. Nonetheless, they used typical vocabulary-learning activities, tried to use them as realistically as possible and tried to measure learning in a useful way. The results also agree with a classroom-based L1 study by Biemiller & Boote (2006), who found that about 40% of the words they taught were actually learned.

I see the effects of over-application of the value of deliberate attention to vocabulary resulting in (1) too much vocabulary teaching and (2) too many teacher-imposed vocabulary-focused activities and exercises. Well directed deliberate vocabulary learning using word cards is very effective, and much more efficient than teaching and vocabulary exercises. It would be more useful to reduce the time given to vocabulary teaching and doing vocabulary exercises and use this time for extensive reading, fluency development, and meaning-focused input and output activities.

4.2 Vocabulary testing

There are now several vocabulary tests readily available for teachers to use. While they may often be used appropriately, they are often used where they should not be used, or used incorrectly. The Vocabulary Levels Test has tended to be used as a proficiency measure

rather than the diagnostic measure it was designed to be. Read (2000) has commented on this problem.

The Vocabulary Size Test (Nation & Beglar 2007) has only recently become available for use in both monolingual and bilingual forms. It will be interesting to see how this test is used, and how well it informs teaching.

There is a growing body of evidence on the need for a large vocabulary size. One of the ways in which teachers can apply this knowledge is to inform learners of vocabulary growth goals and use tests to help them see where they are at present in their vocabulary knowledge. The online tests available at Tom Cobb's website www.lextutor.ca provide very accessible and efficient ways of helping learners get this information. We may see an increase in the metacognitive knowledge that teachers provide for learners about vocabulary size, and more of a dialogue between teachers and learners about the nature of vocabulary growth and learning goals.

5. Conclusion

Overall, knowledge about the teaching and learning of vocabulary is getting through to teachers, material writers and course designers. There is, at least, very much more research and writing about the teaching and learning of vocabulary than there was twenty years ago. There has also been substantial growth in high quality professional development courses for language teachers, particularly Masters' degrees and Diploma courses in TESOL and applied linguistics, many of which are offered online for distance study, and teachers are taking up these opportunities. Some of these programmes include courses on the teaching and learning of vocabulary, or at least include it in their language teaching methodology courses.

It may be that the problems in the application of research come from teachers' desire (and perhaps need) to simplify the findings of research. This may result in misapplication, but it seems important for researchers to suggest clear principles that teachers can apply, and that are supported by research.

It may also be right and proper that there is a gap between research findings and classroom application. While research should evaluate and question existing practices, it is probably more important to focus on exploring new approaches and suggesting innovations. Because there is little replication in applied linguistics research, there may be value in taking time to evaluate findings and subject them to critical scrutiny before rushing into application.

References

Barcroft, J. (2009). Effects of synonym generation on incidental and intentional L2 vocabulary learning during reading. *TESOL Quarterly* 43.1, 79–103.

Beaton, A., M. Gruneberg & N. Ellis (1995). Retention of foreign vocabulary using the keyword method: a ten-year follow-up. *Second Language Research* 11.2, 112–120.

Biemiller, A. & C. Boote, (2006). An effective method for building meaning vocabulary in the primary grades. *Journal of Educational Psychology* 98.1, 44–62.

350 Carlo, M. S., D. August, B. McLaughlin, C. E. Snow, C. Dressler, D. N. Lippman, *et al.* (2004). Closing
351   the gap: Addressing the vocabulary needs of English-language learners in bilingual and mainstream
352   classrooms. *Reading Research Quarterly* 39.2, 188–215.
353 Coxhead, A. (2000). A new academic word list. *TESOL Quarterly* 34.2, 213–238.
354 Crothers, E. & P. Suppes (1967). *Experiments in Second-Language Learning*. New York: Academic Press.
355 Elgort, I. (2011). Deliberate learning and vocabulary acquisition in a second language. *Language Learning*
356   61.2.
357 Elley, W. B. (1989). Vocabulary acquisition from listening to stories. *Reading Research Quarterly* 24.2,
358   174–187.
359 Elley, W. B. & F. Mangubhai (1981). *The Impact of a Book Flood in Fiji Primary Schools*. Wellington: New
360   Zealand Council for Educational Research.
361 File, K. & R. Adams (2010). Should vocabulary instruction be integrated or isolated? *TESOL Quarterly*
362   44.2, 222–249.
363 Folse, K. (2006). The effect of type of written exercise on L2 vocabulary retention. *TESOL Quarterly*
364   40.2, 273–293.
365 Graves, K. (2000). *Designing Language Courses: A Guide for Teachers*. Boston: Heinle and Heinle.
366 Griffin, G. F. & T. A. Harley (1996). List learning of second language vocabulary. *Applied Psycholinguistics*
367   17, 443–460.
368 Hulstijn, J. H. (1992). Retention of inferred and given word meanings: Experiments in incidental
369   vocabulary learning. In P. J. L. Arnaud & H. Bejoint (eds.), *Vocabulary and Applied Linguistics* London:
370   Macmillan, 113–125.
371 Hulstijn, J. & B. Laufer (2001). Some empirical evidence for the involvement load hypothesis in
372   vocabulary acquisition. *Language Learning* 51.3, 539–558.
373 Hyland, K. & P. Tse (2007). Is there an 'Academic Vocabulary'? *TESOL Quarterly* 41.2, 235–253.
374 Keating, G. (2008). Task effectiveness and word learning in a second language: The involvement load
375   hypothesis on trial. *Language Teaching Research* 12.3, 365–386.
376 Kim, Y. (2008). The role of task-induced involvement and learner proficiency in L2 vocabulary
377   acquisition. *Language Learning* 58.2, 285–325.
378 Lado, R., B. Baldwin & F. Lobo (1967). *Massive vocabulary expansion in a foreign language beyond the basic
379   course: The effects of stimuli, timing and order of presentation*. Washington, DC: U.S. Department of Health,
380   Education, and Welfare.
381 Laufer, B. & K. Shmueli (1997). Memorizing new words: Does teaching have anything to do with it?
382   *RELC Journal* 28.1, 89–108.
383 Macalister, J. (2010). Investigating teacher attitudes to extensive reading practices in higher education:
384   Why isn't everyone doing it? *RELC Journal* 41.1, 59–75.
385 McDaniel, M. A., M. Pressley & P. K. Dunay (1987). Long-term retention of vocabulary after keyword
386   and context learning. *Journal of Educational Psychology* 79.1, 87–89.
387 McNeill, A. (1994). Some characteristics of native and non-native speaker teachers of English. In N.
388   Bird, P. Falvey, A. B. M. Tsui, D. M. Allison & A. McNeill (eds.), *Language and Learning*. Hong Kong:
389   Education Department.
390 Meara, P. (1980). Vocabulary acquisition: a neglected aspect of language learning. *Language Teaching and
391   Linguistics: Abstracts* 13.4, 221–246.
392 Nation, I. S. P. (2001). *Learning Vocabulary in Another Language*. New York: Cambridge University Press.
393 Nation, I. S. P. (2006). How large a vocabulary is needed for reading and listening? *Canadian Modern
394   Language Review* 63.1, 59–82.
395 Nation, I. S. P. (2007). The four strands. *Innovation in Language Learning and Teaching* 1.1, 1–12.
396 Nation, I. S. P. (2009) New roles for L2 vocabulary? In Li Wei and V. Cook (eds.) *Contemporary Applied
397   Linguistics Volume 1: Language Teaching and Learning* Continuum. Chapter 5, 99–116.
398 Nation, I. S. P. & D. Beglar (2007). A vocabulary size test. *The Language Teacher* 31.7, 9–13.
399 Nation, I. S. P. & J. Macalister (2009) *Language Curriculum Design*. New York: Routledge.
400 Nation, I. S. P., & K. Wang (1999). Graded readers and vocabulary. *Reading in a Foreign Language* 12.2,
401   355–380.
402 Nation, I. S. P. & S. Webb (2011) *Researching and Analysing Vocabulary*. Boston: Heinle Cengage Learning.
403 Palmer, H. E. & A. S. H. Hornby (1937). *Thousand-word English*. London: George C. Harrap and Co.
404   Ltd.
405 Pigada, M., & N. Schmitt (2006). Vocabulary acquisition from extensive reading: a case study. *Reading
406   in a Foreign Language* 18.1, 1–28.

Pressley, M. (1977). Children's use of the keyword method to learn simple Spanish vocabulary words. *Journal of Educational Psychology* 69.5, 465–472.

Pyc, M. A., & K. A. Rawson (2007). Examining the efficiency of schedules of distributed retrieval practice. *Memory & Cognition* 35.8, 1917–1927.

Read, J. (2000). *Assessing Vocabulary*. Cambridge: Cambridge University Press.

Schmitt, N. (2010). *Researching Vocabulary: A Vocabulary Research Manual*. Basingstoke: Palgrave Macmillan.

Schmitt, D. & N. Schmitt (2005). *Focus on Vocabulary: Mastering the Academic Word List*. New York: Longman Pearson Education.

Takase, A. (2007). Japanese high school students' motivation for extensive L2 reading. *Reading in a Foreign Language* 19.1, 1–18.

Thorndike, E. L. (1908). Memory for paired associates. *Psychological Review* 15, 122–138.

Tinkham, T. (1997). The effects of semantic and thematic clustering on the learning of second language vocabulary. *Second Language Research* 13.2, 138–163.

Walters, J. & N. Bozkurt (2009). The effect of keeping vocabulary notebooks on vocabulary acquisition. *Language Teaching Research* 13.4, 403–423.

Wang, M. & P. Nation (2004). Word meaning in academic English: Homography in the Academic Word List. *Applied Linguistics* 25.3, 291–314.

Waring, R. (1997). The negative effects of learning words in semantic sets: a replication. *System* 25.2, 261–274.

Waring, R. (2000). *Guide to the 'why' and 'how' of using graded readers*. Japan: Oxford University Press.

Waring, R. & M. Takaki (2003). At what rate do learners learn and retain new vocabulary from reading a graded reader? *Reading in a Foreign Language* 15.2, 130–163.

Webb, S. (2007). Learning word pairs and glossed sentences: The effects of a single context on vocabulary knowledge. *Language Teaching Research* 11.1, 63–81.

Webb, W. B. (1962). The effects of prolonged learning on learning. *Journal of Verbal Learning and Verbal Behavior* 1, 173–182.

West, M. (1953). *A General Service List of English Words*. London: Longman, Green & Co.

Zimmerman, C.B. (ed.) (2007). *Inside Reading: The Academic Word List in Context*. New York: Oxford University Press.

Zipf, G. (1949). *Human Behavior and the Principle of Least Effort: An Introduction to Human Ecology*. New York: Hafner.

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