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Thinking Allowed

Editorial note

This new strand in the journal provides a space for contributors to present a personal stance either on future research needs or on the perceived current applications of research in the classroom. Like much of our current content, it echoes the historical uniqueness of this journal in terms of its rich and expert overview of recent research in the field of L2 teaching and learning. However, this new strand takes such research as its starting point and attempts to look forward, using these findings both to debate their application in the language learning classroom and also to suggest where research would be best directed in the future. Thus, the objective of both types of paper is eminently practical: contributors to the **research agenda** will present suggestions for what research might usefully be undertaken, given what is currently known or what is perceived to be necessary. In the **research into practice** papers there will be critical appraisal both of what research is, and is not, getting through to the language learning classroom, policy making, curriculum design, evaluation of teaching and/or assessment programmes, and practical suggestions made for improving such outcomes.

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.

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

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situation has changed strikingly, with over 30% of the research on L1 and L2 vocabulary learning in the last 120 years occurring in the last 12 years. Because this research is largely within the area of applied linguistics, it is important that its findings move forward into teaching. In this overview, I give 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 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.

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

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

2. Vocabulary research findings that have not been well applied

2.1 Planning a vocabulary course

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

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

2.2 High frequency and low frequency words

A person's vocabulary is made up of high frequency and low frequency words. This distinction is embodied in Zipf's law (Zipf 1949), which describes the rapid drop in frequency of words in a frequency-ranked list. Palmer & Hornby (1937) and West (1953) used Thorndike's word counts to make 1000 and 2000 level lists for teaching, and these lists certainly informed the development of lists for graded reader schemes. Research on text coverage by words at various frequency levels highlights the importance of the high-frequency words (Nation 2006). The high-frequency/low-frequency distinction is an important one, because teachers should deal with high-frequency words very differently from the way they deal with low-frequency words (Nation 2001). The idea behind this distinction is that the high-frequency words make up a relatively small, very useful group of words that are important no matter what use is made of the language. Because each word in this group is frequent, the learners will get a very good return for learning them. The low-frequency words, on the other hand, consist of tens of thousands of words that occur very infrequently, are often restricted to certain subject areas, and thus do not deserve any substantial amount of classroom attention. Once they know the high-frequency words of the language, the learners need to learn the low-frequency words, preferably in a rough order of importance for them (see Nation 2009 for a description of the numbers of words in a text at various low-frequency levels). From a teacher's perspective, the best approach to low-frequency words is through training in strategies such as guessing from context, deliberate learning using word cards and mnemonic tricks like the keyword technique and word parts, and using dictionaries to help learning. These strategies are so widely useful that they justify the use of classroom time. The goal of strategy training is that learners will eventually be able to use the strategies without the help of a teacher.

Most teachers are aware of the finding that there are very useful high-frequency words, but the idea of vocabulary control and selective principled attention to certain kinds of words is an idea that teachers are often reluctant to take on. One source of this reluctance comes from teachers who were trained as teachers of native speakers. It is generally considered that when teaching native speakers, exposing learners to a rich and varied vocabulary is helpful, because when they come to school, young native speakers already have quite a large vocabulary (somewhere between 3000 and 5000 word families) which includes most of the high-frequency words of the language. The situation, however, is very different for non-native speakers learning EFL. When they begin learning English, they may already know some English words that exist as loanwords in their L1 as well as English words they have met in their daily life. In most cases this is likely to be only a few words, and their major job is to learn the high-frequency words of the language as quickly as possible, a task that is made easier if they meet these words often, focus deliberately on them (Elley 1989), and are not distracted by substantial numbers of low-frequency words (Nation & Wang 1999; Nation 2009). The reason for a lack of planning of vocabulary

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

2.3 Extensive reading

A very useful way of learning high-frequency words is to do extensive reading with graded readers. Graded readers are books which are specially written using a controlled vocabulary and are available at various levels from as low as 100 words to somewhere around 3000 words. There are numerous series of graded readers and every major ELT publisher has their own series, sometimes more than one. Most teachers are familiar with graded readers, and may be aware of the research which shows that including an extensive reading component in a language course can have very positive effects on vocabulary growth and a wide range of other aspects of language knowledge and language use (Elley & Mangubhai 1981). However, only exceptional schools seem to include a graded reading program as a part of their language courses. There are several reasons why there is a reluctance to set up an extensive reading program. One is a lack of knowledge of the research on extensive reading, although most teachers who have engaged in any professional development program are likely to be aware of this research. Another could be lack of funds to buy the graded readers needed to set up a program, but this is unlikely to be a major reason, because there are various ways of setting up an extensive reading program without too much expenditure (Waring 2000). The most important reason is likely to be a lack of time in the language program, combined with the belief that direct teaching will make more effective use of this time. If learners have only four or five hours of English a week, devoting one of these hours to extensive reading may seem a frivolous thing to do. Related to this is the idea that extensive reading should be enjoyable and should not involve a lot of teacher input. Teachers may feel somewhat guilty if almost a quarter of their English class time does not involve them teaching and the learners are involved in what seems like a leisure time activity.

The obvious solution to this is to set extensive reading as homework, but, depending on the learners, this may end up as work that only a few learners do. Research by Takase (2007), however, shows that if extensive reading is initially given a small amount of classroom time while the learners become used to it, the amount of extensive reading done at home can increase greatly. Fortunately, this reluctance of teachers to set up proper extensive reading programs has now become a focus of research (Macalister 2010), and this may help us understand why a well-researched activity like extensive reading is still not a commonly accepted and applied part of an English course.

An important reason why extensive reading is not as widespread as it should be is that many teachers misuse the term. That is, they do what they call extensive reading, but it bears a closer resemblance to intensive reading. Replacing an inappropriate existing meaning for a term by a new one may be a daunting task.

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2.4 Rote learning of vocabulary

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

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

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

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the wider curriculum context so that it is not seen as an alternative to communicative learning but as a support.

It is also important that teachers see the learning of vocabulary as a cumulative process in which deliberate learning using cards is just one step (but a very significant one) in the eventual rich knowledge of a word.

3. Vocabulary research findings that have been well applied

3.1 Academic vocabulary

Coxhead's (2000) research on the Academic Word List is widely known by teachers and course designers, as is indicated by the number of texts based on the word list (see, for example, Schmitt & Schmitt 2005; Zimmerman 2007), and the number of websites which make use of the list.

The Academic Word List contains 570 word families divided into ten sublists. The list was made by finding words that were wide ranging and frequent in academic texts but which were not in the first 2000 words of English. The corpus used for the study included texts from the humanities, science, commerce and law. The Academic Word List covers around 10% of the running words in academic text. When this is added to the roughly 80% coverage provided by the first 2000 words of English, for a relatively small amount of learning learners have access to a very large proportion of the running words in a text. The Academic Word List also covers around about 4% of the running words in newspapers, which is much better coverage than that provided by the third 1000 words of English.

The most obvious reasons for the widespread use of the Academic Word List are that it is a resource that is immediately applicable, and that Coxhead made the list freely available in a variety of formats. There is also the additional reason that the most obvious users of the list are teachers at tertiary level, and it is they who are most likely to have done specialist courses in the teaching of English as a second or foreign language. As a part of this academic training they are likely to have come in contact with the idea of academic vocabulary and the Academic Word List itself.

There have been critics of the list (Hyland & Tse 2007), whose criticisms are justified, although they are aimed mainly at turning the list into something that it was not intended to be. The strength of the list is that it applies to a wide range of academic areas. At the same time this is its weakness, because words which are used in a particular academic area might not be used in exactly the same way in another, although research by Wang & Nation (2004) showed that there is very little homonymy in the list.

3.2 Other findings

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

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

4. Vocabulary research findings that have been over-applied

While the communicative approach initially had a largely negative effect on the deliberate teaching and learning of vocabulary, teachers have continued to see the importance of giving direct attention to words. There is plenty of evidence to show that the deliberate learning of vocabulary is an effective means of increasing vocabulary size. This evidence is of three main types.

Firstly, there is evidence from studies involving both deliberate learning and incidental learning (Hulstijn 1992; Barcroft 2009; File & Adams 2010). In each case, deliberate learning results in more learning than incidental learning. From my perspective, I find it hard to get excited about this comparison, though it does provide evidence for the value of deliberate learning. One reason for my lack of enthusiasm is that I see both kinds of learning, incidental and deliberate, as essential parts of a well-balanced program; another is that they promote different aspects of vocabulary learning. Explicit deliberate learning is probably best for learning the more salient aspects of word knowledge, particularly the form-meaning link. It is quite hard to acquire the contextual aspects of word knowledge from this kind of learning, such as collocations and frequency intuitions. Conversely, these are exactly the kinds of word knowledge enhanced by widespread exposure and the incidental learning that comes from it, even though the rate and efficiency of learning is much less.

Any program offering only one of these kinds of learning would be a very deficient program indeed. Another reason for my lack of interest in comparisons of deliberate and incidental learning is that they tend to not take into account other types of learning that come about through incidental learning. For example, if vocabulary learning occurs during reading, what improvement also takes place in grammatical knowledge, in reading skill and in knowledge of the world?

Secondly, there is evidence that incidental learning is not very effective, thus supporting the argument that it is better to do deliberate learning. However, this evidence needs to be treated with caution because studies such as those by Waring & Takaki (2003) and Pigada & Schmitt (2006) demonstrate the different strengths and kinds of vocabulary learning that can occur incidentally, leading us to suspect that earlier studies using single measures of vocabulary gain may have underestimated the amount of vocabulary learning that occurs. Incidental vocabulary learning rates are necessarily rather low because there are so many other things that learners need to give attention to when such incidental learning occurs.

Thirdly, there is very strong evidence for the value of deliberate learning from studies that focus only on deliberate learning. The very long history of published studies of this type includes studies by Thorndike (1908), Webb (1962), Lado, Baldwin & Lobo (1967), Crothers & Suppes (1967), Beaton, Gruneberg & Ellis (1995), Griffin & Harley (1996). These studies consistently show very high rates of learning over relatively short periods of time with good long-term retention. There is now also evidence (Elgort 2011) that this kind of learning results immediately in implicit knowledge that is characterised by being subconsciously and fluently available and well integrated into the learner's language system.

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4.1 Vocabulary teaching and vocabulary exercises

These three kinds of evidence strongly support the idea of giving deliberate attention to words. However, applying the research on deliberate learning is misguided 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, that is, less than half of the taught words were learned, as measured by 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

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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.

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