WORD KNOWLEDGE AND VOCABULARY DEVELOPMENT

Gene Mehigan

Abstract

This paper explores the nature of vocabulary learning and identifies how vocabulary differs in oral and written language. The multifaceted nature of word knowledge is described and the promotion of word consciousness is proposed as a key component of an effective vocabulary instructional programme. Finally, given the importance of vocabulary knowledge in influencing reading success, the paper examines the role of vocabulary instruction in the English Language Curriculum in Ireland (NCCA, 1999a, 1999b)

Introduction

The ability to read is perhaps the most important skill that the teacher has to impart to the child. Ideally, every primary school should identify a programme of tuition that enables every child to read fluently, to attain high levels of comprehension ability and to enjoy and learn from reading. The reality, however, is that many children struggle with learning to read in today's schools.

While there is no universal solution for optimizing literacy achievement, recent research on teaching reading has been unequivocal in its support for robust vocabulary teaching as an element of effective literacy instruction (Baumann, Kame'enui, & Ash, 2003; Cowen, 2003). Reading researchers are interested in vocabulary instruction because it strongly influences children's level of comprehension (Baker, Simmons & Kame'enui, 1998) and vocabulary knowledge is a strong determinant of reading success in general (Biemiller, 2003). Research identifying vocabulary knowledge as one of five essential components of reading also indicates that a child's vocabulary knowledge correlates highly with his or her ability to achieve in school. Vocabulary knowledge is vital not only to success in reading and in literacy more generally, but also in the world outside of school (Graves, 2006).

This paper explores the nature of vocabulary learning and identifies how vocabulary differs in oral and written language. The multifaceted nature of word knowledge is described while the promotion of word

consciousness is proposed as a key component of an effective vocabulary instruction programme. Finally, given the importance vocabulary knowledge enjoys in influencing reading success the paper examines the place of vocabulary instruction in the English Language Curriculum (NCCA, 1999).

Nature of vocabulary learning

Learning, as a language based activity, is fundamentally and profoundly dependent on vocabulary knowledge – knowledge of words and word meanings (Baker, Simmons, & Kame'enui, 1998). Unlike phonological and grammatical knowledge which develop predominantly in the early years, vocabulary knowledge expands and deepens over the course of a lifetime enabling us to communicate effectively. The more words children know, the more they can understand what they read and thereby increase their knowledge. Conversely, there is also the possibility of the *Matthew Effect*, occurring in learning vocabulary where "the rich get richer and the poor get poorer" (Stanovich, 1986). When this occurs the children who know fewer words tend not to read well and the less they read and learn the less likely they are to catch up with their peers. Children with smaller vocabularies have difficulty making sense of challenging texts needed for growth in vocabulary. Without these more challenging texts these children will inevitably fall behind their peers. In short, vocabulary knowledge is cumulative and in the absence of developing it through reading, direct vocabulary instruction is necessary.

Researchers often refer to four types of vocabulary: *listening vocabulary*—the words we need to know to understand what we hear; *speaking vocabulary*—the words we use when we speak; *reading vocabulary*—the words we need to understand what we read; and *writing vocabulary*— the words we use in writing (Armbruster, Lehr, & Osborn, 2001). These categories are significant because the source of children's vocabulary knowledge changes as they become more familiar with the written word.
Very young children learn their initial vocabulary in a verbal context and environment. Typically at this emergent stage of literacy acquisition, their oral vocabulary is far greater than their word recognition (Chall, 1987). As they progress beyond their early years, however, most of the words they encounter in oral language are words that they already know (Beck, McKeown, & Kucan, 2002). It is natural, therefore, to deduce that the source of learning new vocabulary shifts to what children read. As the child becomes more proficient in word identification strategies he or she meets new words that may be decoded but not necessarily understood. They are in fact required to learn the meaning of words that are not part of their speaking vocabulary.

Conventional wisdom suggests that learning these words in context is a major means for developing children's reading vocabulary. However, learning new words in the course of independent reading has a limited success rate (unless multiple encounters occur) and is dependent on the stage of an individual's development (Swanborn & de Glopper, 1999). The problem is that many of the children who need assistance in vocabulary development do not engage in wide reading especially of those texts that contain unfamiliar vocabulary. This can trap children in a vicious circle, since children who cannot read more advanced texts miss out on opportunities to extend their vocabulary. They are also less effective in deploying strategies necessary for independent word learning (Fisher and Blachowicz, 2005). Furthermore, given the verbal nature of most classroom activities, any inability to comprehend language and knowledge of words will be detrimental to success in school and hinder access to the broader curriculum.

When referring to the verbal activity that is characteristic of classrooms, it is important to differentiate conversational or spoken language from language that is encountered in written texts. One of the ways that they differ is in terms of their vocabulary. Written language typically uses a richer vocabulary than oral language, mainly because precise choice of words is not an essential skill in conversation (Hayes & Ahrens, 1988). When engaging in face-to-face conversations speakers have a variety of communicative tools at their disposal – tone of voice, facial expression, gestures- that are not available in written text. The language of conversation, though a strong influence on children's vocabulary, is simply not an adequate preparation for the language that students will encounter in their texts (Stahl & Nagy, 2006). Very often the language of face-to-face conversation and especially language that has been influenced by television and other media can disguise vocabulary difficulties (Cunningham & Stanovich, 1998). Therefore, we cannot assume that children who are proficient in conversational English will be familiar with all the words that they encounter in school or that they will comprehend the language of their textbooks beyond the earliest years. What we can be certain of is that in order for children to comprehend their reading material they must first acquire the necessary vocabulary – either directly or otherwise.

Scientific research on vocabulary instruction confirms that, although most vocabulary is learned indirectly through incidental exposure to words, some vocabulary must be taught directly. According to the National Reading Panel (2000) it is highly effective to explicitly teach words that are vital to the comprehension of the material being read. This requires direct instruction on selected words.

Some will argue that there are too many words to be learned and that most words are learned anyway from context during reading. If we are to envisage teaching all the words in the English Language, then of course it would not be feasible to teach them through direct instruction. Beck et al, (2002) provides guidance in making this challenge more realistic by defining an individual's vocabulary as comprising three tiers. The first tier words are common words that students are likely to know or that are easily taught e.g. *friend, bed, run, orange.* Words in the third tier are rare words that students are less likely to encounter frequently. These are often content specific words whose meanings are often supported by surrounding text e.g. *harbour, clavicle, congruent*. These words are not frequently encountered or used by students and are best learned in their specific context and when the need arises. This leaves us with the words in the middle or second tier which are generally characterised by high frequency and are found across diverse domains e.g. *identical, soothing, opponent*. There is a responsibility on the teacher to identify these words, to engender in children a consciousness around them and to provide instruction on them beyond the basic level of simple definition. Having identified the range of words that are deemed a priority for instruction the very nature of word knowledge is also worthy of consideration.

What does it mean to know a word?

Knowing a word is a multifaceted matter that has implications for how words are taught and how word knowledge is measured. We don't know all words to the same degree. Some words we know so well that we can use them in any context, generate them in writing or conversation as required and understand all possible uses of the word. Other words may not be familiar to us at any level. Beck, McKeown and Kucan (2002) have suggested a continuum of word knowledge ranging from absolutely no knowledge of the word to having a rich and powerful knowledge of the word. Along this continuum they suggested the following points:

- No knowledge
- General sense of the word
- Narrow context-bound knowledge e.g. understanding a *radiant* bride is beautiful, smiling, happy but not being able to use this word in a different context
- Having knowledge of a word but not being able to recall it to apply it in appropriate situations
- Rich, decontextualized knowledge of a word 's meaning including its relationship to other words and its extension to metaphorical uses e.g. *devouring* a book

For the purposes of this paper an adaptation of this continuum is depicted in Figure 1 with some words included for the reader to explore their own level of word knowledge in relation to the words presented. Once we accept that there is a continuum of word knowledge it alerts us to the possibilities of teaching and learning words at different levels. The words included in Figure 1 help us to understand that different words represent different learning tasks. It is likely that both *hippopotamus* and *lap* are both known at Level 1 but other issues attendant with knowing a word emerge here. Knowledge of the word *hippopotamus* is finite in as much as it refers to a large mammal, native to Africa whereas understanding the word *lap* is likely to be dependent on a range of contexts and connotations.

Figure 1: Levels of Word Knowledge

Level	1	2	3	4
	I know the word well; I can use it in my conversations or in my writing	I know something about the word and can relate it to a situation	I am familiar with the word; I remember seeing or hearing it before	I don't know the word
hippopotamus				
lap				
pusillanimous				

Pusillanimous, on the other hand, occurs less frequently in English literature and may be known at a different level. Hence all word-learning tasks are not the same and are often dependent on your prior knowledge of words. Word learning tasks differ depending on matters such as how much the learner already knows about the word, what is learner is going to do with the word and at what level you want the word learned (Graves, 2006).

Developing word consciousness as part of vocabulary instruction

Regardless of the word learning task, teachers should provide an environment in which students are exposed to both rich language and vocabulary instruction that is designed to deepen their knowledge of word meanings. However, while both instruction on individual words and instruction that promotes

children's ability to learn words on their own are very worthwhile (Nagy, 2005; Kamil & Hiebert, 2005), they are not the only components of an effective vocabulary programme.

Recent research has advocated a four-part vocabulary programme: wide or extensive independent reading, teaching individual words, instruction in independent word-learning strategies and fostering word consciousness (Graves & Watts-Taffe, 2002; Graves, 2006). Rather than view all of these as discrete components of vocabulary instruction it is best to see how they are interrelated and to what extent the teacher assumes responsibility for each as a direct instructor. Given that children's engagement in extensive reading is most likely to be an independent exercise it can be argued that the role of the teacher as a *direct* instructor falls predominantly within the other elements. It is acknowledged that teaching individual words is a responsibility of the teacher and that it pays a number of important dividends including increasing children's comprehension of reading and increasing the power and overall quality of children's oral and written communication skills (Graves, 2006).

The scope of this paper, however, does not allow the identification of the range of these individual words nor permit an audit of the wide range of word-learning strategies that the teacher can employ (e.g. context clues, word parts, dictionary use). However, if we define word consciousness as the knowledge and dispositions necessary for children to learn, appreciate and effectively use words(Scott & Nagy, 2004) we can capture much of the essence of vocabulary instruction therein.

A hallmark of direct instruction in vocabulary and indeed of good instruction generally is to ensure that students become actively engaged and are made conscious of their learning (Wittrock, Marks, & Doctorow, 1975). If children are going to become conscious of vocabulary learning they need to be actively engaged with the process (Stahl & Nagy, 2006). This active engagement is vital for learning meanings of specific words and in learning strategies to become independent word learners. Learning new words as we encounter new experiences is a durable and long-lasting way to develop a rich and comprehensive vocabulary. For example the words *batter, flip, pan, flour, fry,* and *lemon* may be learned naturally in the context of making pancakes, just as *pull, block, strike, double,* and *clash* take on special meaning for the child who plays hurling. Word-conscious children enjoy learning new words and engaging in word play. They know and use many words, and are aware of the subtleties of word meaning and of the power words can have. The teacher has a vital role in awakening this knowledge of and interest in words and developing metacognitive knowledge with regard to words. Research in vocabulary instruction has identified a plethora of strategies that are fundamental to vocabulary growth. For instance the Four Square Concept Map as presented in Figure 2 (to teach the word *soothing*) not

only explores the meaning of the word but also builds background knowledge and maintains this vocabulary knowledge and use after reading (Stahl & Nagy, 2006).
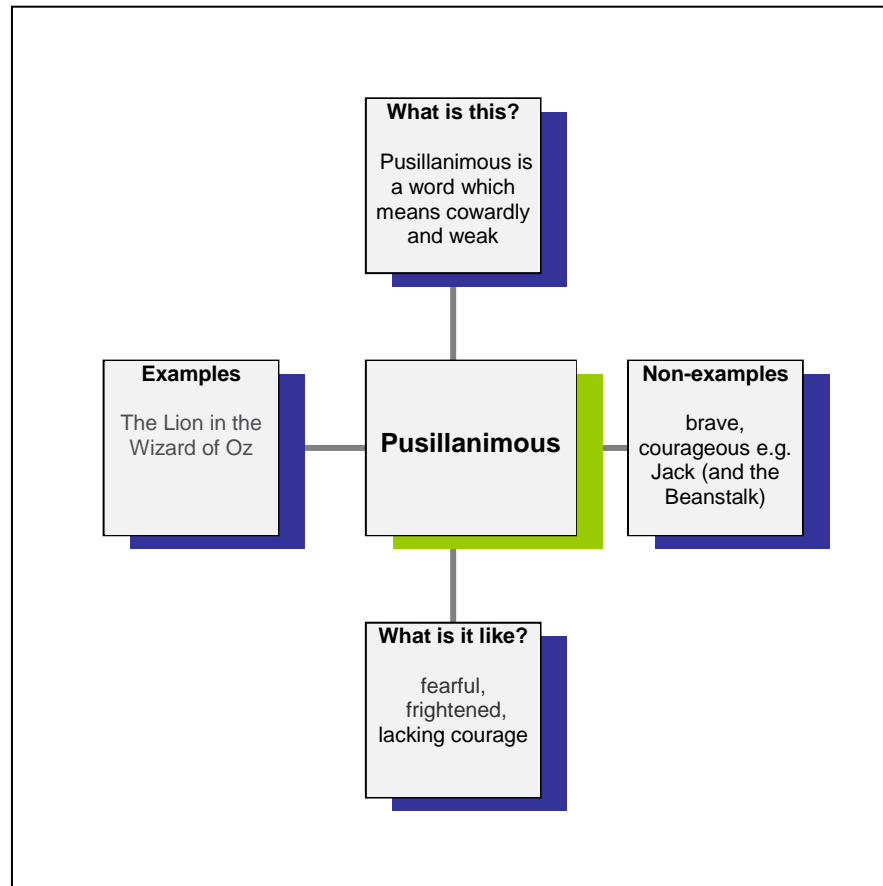
Figure 2 Four Square Concept Map (Stahl & Nagy, 2006)

Word *Soothing*	***What are some examples?*** bath soft music lying down chocolate
What is it? **Something that is <u>*soothing*</u> relaxes you**	***What is it not like?*** traffic rap music someone yelling

The word *pusillanimous* may not be known readily at level one as described earlier in Figure 1. A deep processing of this word can be achieved by creating a word map for the word as illustrated in Figure 3. This moves the understanding of the word beyond the dictionary definition by using non-examples along with examples to develop a rich word consciousness. Any strategy that enables children to learn words fully, whether it involves promoting word play, establishing word associations, categorising vocabulary or using visual imaging, will help them to become conscious of rich word schemas. It is also significant that increasing word consciousness through these activities has an impact on children's motivation to learn and take risks (Scott & Nagy, 2004). It is necessary, therefore, for the teacher to create an environment that allows children to take linguistic risks and to achieve a level of success that ensures children enjoy the task of word learning. The responsibility also lies with the teacher to ensure that any plan for literacy instruction includes a component on reading vocabulary.

Evidence from a Primary Curriculum Review (NCCA, 2005) indicates that planning for literacy instruction is strongly influenced by the English language curriculum. Given the importance vocabulary knowledge enjoys in influencing reading success (Biemiller, 1999; Nagy, 2005; Kamil & Hiebert, 2005) a review of the role vocabulary plays in this curriculum is warranted.

Figure 3: Word Map for learning the word *pusillanimous*


```
                    ┌──────────────────┐
                    │  What is this?   │
                    │                  │
                    │ Pusillanimous is │
                    │  a word which    │
                    │ means cowardly   │
                    │    and weak      │
                    └──────────────────┘
                             │
  ┌──────────────┐    ┌──────────────┐    ┌──────────────────┐
  │  Examples    │    │              │    │   Non-examples   │
  │              │────│ Pusillanimous│────│                  │
  │ The Lion in  │    │              │    │     brave,       │
  │ the Wizard   │    │              │    │ courageous e.g.  │
  │   of Oz      │    │              │    │  Jack (and the   │
  └──────────────┘    └──────────────┘    │   Beanstalk)     │
                             │            └──────────────────┘
                    ┌──────────────────┐
                    │ What is it like? │
                    │                  │
                    │    fearful,      │
                    │   frightened,    │
                    │ lacking courage  │
                    └──────────────────┘
```

The curriculum context

The revision of the English curriculum in 1999 was significant in emphasizing the teaching of the spoken word along with the commitment to written aspects of language. There is also recognition of the necessity of differentiating the characteristics of written and oral language. The role of the teacher in providing opportunities for children to experience sophisticated and elaborate vocabulary and sentence structure is also identified (NCCA, 1999). In keeping with the spiral nature of the curriculum, as children progress through the classes there is some focus on other elements of vocabulary such as local expressions and logology (word and language play). However, given the central role the curriculum enjoys in structuring planning for literacy teaching, few content objectives address enabling children to extend their reading vocabulary.

Details in Figure 4 indicate the frequency of references to vocabulary in the content objectives across all class levels and across the strand units of the English Language Curriculum (1999). The absence of content objectives in the reading strand for middle and senior classes that relate specifically to vocabulary is noteworthy. This is in contrast to the previous English Curriculum (Curaclam na Bunscoile, Department of Education, 1971) which identified the importance of teaching vocabulary and outlined how reading vocabulary could be extended through a range of activities and exercises. It would appear from the information included in Figure 4 that the focus on vocabulary instruction is somewhat directed at developing receptiveness to oral language as modelled by the teacher and using reference material (dictionaries and thesauruses) to extend and develop vocabulary.

Figure 4: Reference to "vocabulary" in the English Language Curriculum Statement (1999)

	INFANTS The child should be enabled to	1ST & 2ND CLASSES The child should be enabled to	3RD & 4TH CLASSES The child should be enabled to	5TH & 6TH CLASSES The child should be enabled to
Oral Language		experience challenging **vocabulary** and sentence structure from the teacher experiment with more elaborate **vocabulary** and sentence structure in order to extend and explore meaning	experience the teacher's use of challenging **vocabulary** and sentence structure	experience from the teacher a growing elaboration and sophistication in the use of **vocabulary** and sentence structure
Reading	build up a sight **vocabulary** of common words	continue to build sight **vocabulary** of common words from books read and from personal experience		
Writing				to use dictionaries and thesauruses to extend and develop **vocabulary** and spelling

Source: Primary School Curriculum: English Language (1999)

Instruction in vocabulary should involve far more than using dictionaries to check meaning and putting the words in a sentence. Since definitions are synonymous with vocabulary instruction in many classrooms (Graves, 20006) caution must be taken in using dictionary definitions as a means of offering

concentrated information about words to students. It is not uncommon for students to produce amusing results when using the dictionary to define unknown words. For example, after looking up the meaning of *extinguish* and finding the phrase "to put out" in its definition a student could employ the new word in a sentence as follows "Every night before I go to bed my mother asks me to *extinguish* the cat." Children can gain some word knowledge from definitions, but generally only if they are given other types of information about the word (e.g. how it is used) and are given opportunities to apply this information in a task (Stahl, 1986).

The English Language Teacher Guidelines (NCCA, 1999), includes advice on developing children's comprehension skills and strategies and is clear in identifying the role of the teacher in this regard. However, the fundamental link between vocabulary knowledge and reading comprehension is not established and does not include guidelines specifically focused on teaching vocabulary.

Concluding comments

There is a considerable knowledge base that confirms the vital role that vocabulary development plays in increasing children's knowledge. Direct instruction to enrich students' language abilities and to develop their vocabulary knowledge is a vital aspect of this development. However, teachers must recognise that direct and explicit instruction can cover only a fraction of the words that children need to learn. This should help teachers approach vocabulary instruction that will not only help children become better word learners but also increase independent word learning. This paper has referred to the need to develop word consciousness in children as a means to increasing vocabulary knowledge. There is also a level of consciousness required on the part of the teacher to ensure that vocabulary instruction is an integral part of their planning for literacy. An analysis of what teachers need to know about reading by Snow *et al* (1998, p.329) concludes that it is *essential that teachers at all grade levels understand the course of literacy development and the role of literacy instruction in optimizing literacy development.* If our curriculum is not specific in outlining content objectives for teaching reading vocabulary and our curriculum guidelines are not explicit in providing exemplars or techniques for developing competency in vocabulary there is a danger that direct instruction in vocabulary could be the missing paradigm in some literacy programmes.

Effective vocabulary instruction is an attainable goal. Vocabulary instruction helps children develop strong vocabularies and is essential to their success, both in school and beyond. Students may forget many of the specific facts they learn in school, but the words they learn will serve them as useful

tools for a lifetime. The words of Wittgenstein (1953) are as true today as they were half a century ago -

The limits of my language are the limits of my mind. All I know is what I have words for.

References

Armbruster B., Lehr F. & Osborn J.(2001). *Put Reading First: The Research Building Blocks for Teaching Children to Read.*Washington, DC: U.S. Government Printing Office.

Baker, S.K., Simmons, D.C., & Kame'enui, E.J. (1998). Vocabulary Acquisition: Research bases. In D.C. Simmons & E.J. Kame'enui (Eds.), *What reading research tells us about children with diverse learning needs* (pp. 183-218). Mahwah, NJ: Erblaum.

Baumann, J. F., Kame'enui, E. J., & Ash, G. E. (2003). Research on vocabulary instruction: Voltaire redux.In J. Flood, D. Lapp, J. R. Squire, & J. M. Jensen (Eds.), *Handbook on research on teaching the English language arts* (2nd ed., pp. 752–785). Mahwah, NJ: Erlbaum.

Beck, I. L., McKeown, M. G., & Kucan, L. (2002). *Bringing words to life: Robust vocabulary instruction*. New York: Guilford Press.

Biemiller, A. (1999). *Language and reading success.* Cambridge, MA: Brookline Books.

Biemiller, A. (2003). *Teaching vocabulary to kindergarten to grade two children.* Paper presented at the annual meeting of the American Educational Research Association, Chicago, IL.

Chall, J. (1987). Two vocabularies. In M.Mckeown & M. Curtis (Eds.), *The nature of vocabulary instruction.* Hillsdale, NJ: Earlbaum.

Cowen, J.E. (2003). *A balanced approach to beginning reading instruction: A synthesis of six major US research studies.* New Jersey: International Reading Association.

Cunningham, A. E., & Stanovich, K. E. (1998). *What reading does for the mind.* American Educator, *22, 8–15.*

Department of Education (An Roinn Oideachas). (1971). *Curaclam na Bunscoile – Lámhleabhar an Oide, Cuid 1*. Dublin: Foilseacháin an Rialtais

Fisher, P. and Blachowicz, C. (2005) 'Vocabulary instruction in a remedial setting.' *Reading and Writing Quarterly*, 21:281-300.

Goswami, U. (2001). Early phonological development and the acquisition of literacy. In S.B. Neuman & D.K. Dickinson (Eds.), *Handbook of early literacy research* (pp. 111-125). New York: Guilford Press.

Graves, M.F. (2006). *The Vocabulary Book: Learning & Instruction.* New York Teachers: Co-published by Teachers College Press, International Reading Association, and National Council of Teachers of English.

Graves, M.F., & Watts-Taffe, S. (2002). The place of word consciousness in a research-based vocabulary program. In A. Farstrup & S.J.Samuels (Eds.), *What research has to say about reading instruction* (3rd ed., pp. 140-165). Newark, DE: International Reading Association.

Hayes, D.P., & Ahrens, M. (1988). Speaking and writing: Distinct patterns of word choice. *Journal of Memory and Language, 27*, 572-585

Kamil, M. L., & Hiebert E. H. (2005). The teaching and learning of vocabulary: Perspectives and persistent issues. In E. H. Hiebert & M. Kamil (Eds.), *Teaching and learning vocabulary: Bringing scientific research to practice*. Mahwah, NJ: Erlbaum.

Nagy, W.E. (2005). Why vocabulary instruction needs to be long-term and comprehensive. In E. Hiebert & M.L. Kamil (Eds.), *Teaching and learning vocabulary: Bringing research to practice* (pp.27-44). Mahwah, NJ: Erblaum.

National Council for Curriculum and Assessment (NCCA). (1999). *Primary School English Curriculum.* Dublin: Stationery Office.

National Council for Curriculum and Assessment (NCCA). (1999). *Primary School English Curriculum. Teacher Guidelines.* Dublin: Stationery Office.

National Council for Curriculum and Assessment (NCCA). (2005). *Primary Curriculum Review Phase 1: Final Report.* Dublin: Stationery Office.

National Reading Panel. (2000). *Teaching children to read: An evidence-based assessment of the scientific research literature on reading and its implications for reading instruction.* Washington, DC: National Institute of Child Health and Human Development.

Scott J. A. & Nagy W.E. (2004). Developing word consciousness. In J.F. Baumann & E.J. Kame'enui (Eds.), *Vocabulary instruction: Research to practice* (pp. 201-217). New York: Guilford Press.

Snow, C., Burns, M.,& Griffin, P. (Eds.). (1998). *Preventing reading difficulties in young children.* Washington, DC: National Research Council, National Academic Press.

Stahl, S.A. (1986). Three principles of effective vocabulary instruction. *Journal of Reading, 29,* (pp. 662-668).

Stahl, S., & Nagy, W. (2006). *Teaching word meanings.* Mahwah, NJ: Lawrence Erlbaum Associates.

Stanovich, K.E. (1986). Matthew effects in reading: Some consequences of individual differences in the acquisition of literacy. *Reading Research Quarterly, 21,* 360-407.

Swanborn, M.S.L., & de Glopper, K. (1999). Incidental word learning while reading: A meta-analysis. *Review of Educational Research* (69(3), pp.261-265).

Wittgenstein, L. (1953). *Philosophical investigations.* Oxford: Blackwell.

Wittrock, M.C., Marks, C.B., & Doctorow, M.J. (1975). Reading as a generative process. *Journal of Educational Psychology (67,* pp.484-489).