

**Reading for Lexical Development:
Depth of Processing and the
Systematic Selection of Comprehensible Input**

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Abstract

There are two primary foci to acquiring knowledge – incidental learning and intentional learning. The former involves the “picking up” of information through tasks such as reading whereas the latter involves purposefully committing information to memory through explicit study. Research strongly supports extensive reading as a vital tool for second/foreign language vocabulary knowledge development. Lexical inferencing is a process which occurs during reading and is often associated with the Depth of Processing theory; the construct essentially maintains that more elaborate cognitive processing in handling information is likely to result in better retention. It is important to understand, however, that lexical inferencing can only take place on the condition that the reader is able to comprehend or make sense of the available contextual clues. The present paper elaborates on the cognitive dynamics of lexical inferencing and more importantly, on the use of pre-reading vocabulary size testing as well as the ‘i + 1’ premise for the systematic selection of comprehensible input in the form of graded readers. The respective roles of authentic and simplified texts in ESL/EFL settings are also discussed.

Keywords: Reading, incidental vocabulary learning, depth of processing, comprehensible input, vocabulary size testing, ‘i + 1’, graded readers

1. Introduction

There are two mainstream views regarding second/foreign language acquisition – incidental learning and intentional learning (Hulstijn, 2003); incidental learning fundamentally involves the “picking up” of linguistic information through tasks such as reading and listening while intentional learning involves the “deliberate committing to memory” of linguistic information (p. 349). Also, with the former approach comprehension is prioritised whereas the latter approach emphasises focus on language form.

Extensive reading is an approach that primarily draws on incidental learning; as defined by Day and Bamford (1998), to read extensively is to read independently, widely and in quantity, and to read over a continual period of time. In terms of lexical development, extensive reading permits lexical inferencing (the process of inferring word meanings from contextual clues) to occur.

Specifically within the framework of vocabulary learning, researchers concur that processing new lexical information more elaborately leads to better retention than less elaborate processing (Laufer & Hulstijn, 2001) and although it is widely acknowledged that lexical inferencing during reading constitutes elaborate processing, it is important to understand the cognitive dynamics of the process as well as the importance of providing comprehensible input to facilitate it.

2. Reading for Lexical Development

2.1 Depth of Processing: Incidental Vocabulary Learning

Generally, researchers support incidental vocabulary learning (inferring word meanings from contextual clues) as a means of deep processing that can lead to successful word retention. As de Ridder (2002) observed, there has been voluminous support from researchers over the years for contextual learning, often associating it with deep mental processing which has been postulated to result in superior learning.

Craik and Lockhart (1972) put forward that the concept of systems of storage which differ in their retention features and the transfer of information strands between them make up the main constituents of human memory. Broadbent (1958, cited in Craik & Lockhart, 1972) proposed that information is held briefly preceding processing and more permanent storage. Hence, information strands are in essence first held in temporary storage before being processed and from there could be potentially stored in long-term memory.

The Depth of Processing construct by Craik and Lockhart (*ibid.*) basically postulates that the chance that a strand of new information will be stored in long-term memory is independent of its storage span in short-term memory. Instead, what matters is whether the information undergoes deep initial processing. In the event that it does not, the information is not likely to be stored in long-term memory.

Laufer and Hulstijn (2001) extended the original construct at the turn of the century, advancing that depth of processing is but one factor affecting vocabulary learning. They suggested the Involvement Load hypothesis which combines three dimensions: need (motivation), search (use of references) and evaluation (appropriate use of a word in context). Aside from the learner's need/motivation to achieve, the hypothesis is largely grounded in the Depth of Processing construct in terms of the association between information processing and retention, and operates within the same basis – i.e., more elaborate cognitive processing in handling information is likely to result in better retention.

Rott (2005) conducted a study on word processing involving tertiary-level L2 learners divided into two learning conditions: reading a text with the aid of multiple-choice glosses (MCG) and reading a text with the aid of single-translation glosses (STG). The main objective of the study was to investigate the effects of these interventions on vocabulary retention. The findings of the study indicated that the MCG group outperformed the STG group. Although both interventions prompted noticing and attention to meaning, MCGs apparently triggered additional learning mechanisms that promoted better retention.

In essence, activities that stimulate elaborate cognitive processing and permit more robust lexical encoding are of import with respect to effective vocabulary development. As mentioned, contextual learning is often associated with deep processing and as illustrated below, the route towards achieving vocabulary gains via incidental learning is by no means composed of a simple, straightforward orientation:

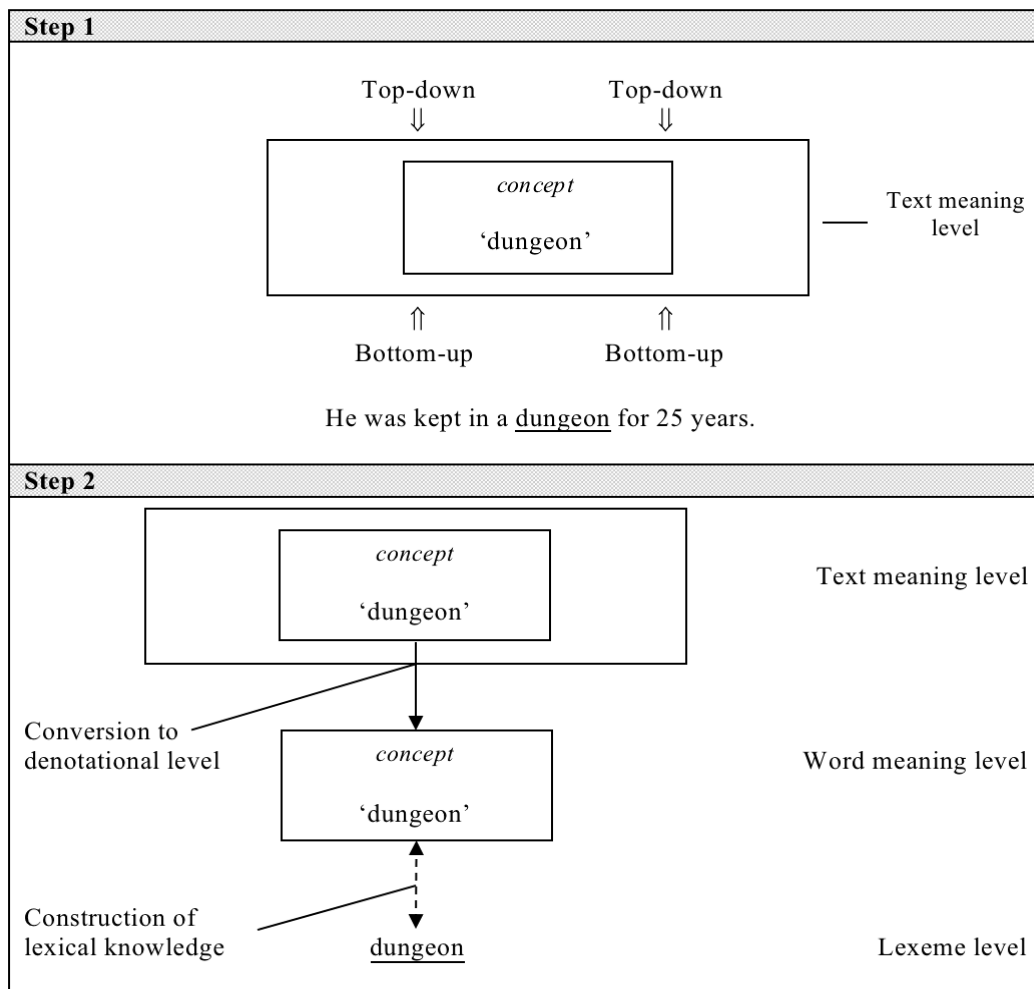


Figure 1: Steps in the construction of lexical knowledge during the reading process (adapted from Rieder, 2002).

As illustrated in Step 1, the reader specifies the unknown concept of the word 'dungeon' at the text level and in order to construct lexical knowledge, has to shift from the text level to the word level and attempt to form a link between his or her meaning hypothesis and the word form (Step 2).

Rieder (*ibid.*) emphasised the essentiality of within-text resources for successful incidental vocabulary learning. Clearly, linguistically incompetent learners who have to process texts that are highly complicated and lacking in terms of context as well as repetitions will be unlikely to experience much lexical development. Hence the need for comprehensible input in the form of graded materials.

The ensuing section covers our recommendations on the use of pre-reading vocabulary size testing as well as Stephen Krashen's 'i + 1' formulation for the systematic selection of comprehensible input in the form of graded readers.

2.2 Comprehensible Input: Vocabulary Size Testing and the 'i + 1' Premise

According to Krashen (2009), in the updated online edition of his 1982 publication, *Principles and Practice in Second Language Acquisition*, the Comprehensible Input (CI) hypothesis "may be the single most important concept in second language acquisition theory today." (p. 9)

The crux of Krashen's CI construct lies in the 'i + 1' equation. According to Krashen (*ibid.*), learners who are exposed to comprehensible materials that are slightly more complex than their current proficiency level are likely to experience progress in the target language (extralinguistic data and context are assumed to be helpful catalysts to this achievement). The CI construct classifies one's present level of proficiency as 'i' and the ensuing level of acquisition as '1'. Morano (2004), in relation to the complexity of estimating comprehensibility, warned that materials chosen for language learning should correspond to a learner's linguistic ability as the provision of materials that are far too easy will yield no progress while exposure to materials that are exceedingly difficult may intimidate the learner.

To facilitate automaticity-training, Krashen's 'i + 1' equation has also been reformulated to 'i - 1' (this is further illustrated in Maruyama's (2009) study on fluency development). Contrasting the original formulation of 'i + 1' – whereby input should be slightly more difficult than the learner's existing proficiency level in order to induce progression of knowledge in the target language – the 'i - 1' approach controls for linguistic load so that the input falls well within the learner's current level of proficiency; the purpose of automaticity-training is to establish a large sight vocabulary, and not specifically the acquisition of new linguistic knowledge (Day & Bamford, 1998). In short, the 'i - 1' approach is unsuitable for use in programmes aiming to help learners gain new linguistic knowledge (e.g., the acquisition of new word meanings) but is recommended for application in programmes designed for fluency development.

Unfortunately, the CI hypothesis has been criticised for not being able to define or quantify the 'i' and the '1' of the equation in more exact terms (Morano, 2004). However, this can be remedied to a large extent by the use of graded readers as they allow researchers and educators to be more, although not entirely, precise when classifying materials under 'i' or '1'.

Language teachers or instructors intending to implement an extensive reading programme can first administer a vocabulary size test to gauge their students' existing vocabulary size, an acknowledged predictor of language proficiency (Nation, 2001). The online version of Nation and Beglar's (2007) Vocabulary Size/Recognition Test (printable with scoring guide) is available at http://www.lexutor.ca/tests/levels/recognition/1_14k/. The following is a sample item from the test:

4. FIGURE: Is this the right **figure**?
- a. answer
 - b. place
 - c. time
 - d. number

Figure 2: Vocabulary Size/Recognition Test sample item.

The test is slightly more demanding than Nation's (1990, 1983) Vocabulary Levels Test as the correct answer and distractors share elements of meaning. Therefore in order to choose the correct answer, one would need to have a moderately developed knowledge of the word's meaning.

The results of the test can provide an indication of a student's present graded reader level ('i'). For instance, if Level 2 graded readers are limited to 2,000 word families, then a score of 2,000 word families in the test would indicate the student's present graded reader level to be Level 2.

Following the hierarchy of ascending difficulty in common graded reader series, Level 3 graded readers would therefore represent the immediate '1' materials for the student in question. Due to the repetitive nature of graded readers as well as the element of intertextuality in such materials, Level 3 graded readers also represent the 'i + 1' materials that the student needs to read for progression of knowledge in the target language. With an existing receptive knowledge of 2,000 word families, it is likely that the student, upon encountering unknown or unfamiliar words, would be able to infer their meanings from available contextual clues.

The following section discusses the respective roles of authentic and simplified materials in ESL/EFL settings, as well as the suitability of using graded readers for effective incidental vocabulary learning.

2.3 Authentic and Simplified Texts

The use of unsuitable reading materials – texts that contain too many unknown or unfamiliar words – is likely to hamper comprehension and demotivate learners. Furthermore, lexical development is also curbed with the use of texts that are heavy or dense with words unknown to the learner.

The provision of comprehensible input is vital in any ESL/EFL reading programme, especially those catering to lower proficiency students. According to Day and Bamford (1998), most reading materials are too complex for second/foreign language learners to cope with because of their limited linguistic knowledge. Therefore, although the use of simplified texts goes against

the conviction of authentic materials purists as far as language learning is concerned, it is obvious that this is both a practical and logical solution since exposing learners to materials that are overwhelmingly challenging can only hamper their efforts at reading which can consequently demotivate them as well as nurture a negative attitude towards reading in the target language.

Proponents of authentic materials, however, disagree. As Williams (1984) put forth, “if the learner is expected eventually to cope with real language outside the classroom, then surely the best way to prepare for this is by looking at real language” (p. 25). The ‘cult of authenticity’ essentially asserts that the quality and complexity of materials written for native speakers make them superior language learning tools in comparison to simplified materials (Day & Bamford, 1998).

Yet, despite garnering support from various quarters, the definition of ‘authentic’ appears to vary rather widely, from any material not specifically produced for language teaching (Nunan, 1989) to those written for native speakers which are neither edited nor abridged (Scarcella & Oxford, 1992), and to texts that are shortened and slightly adapted (Walter, 1986). Alternatively, Widdowson (1976) looked at authenticity quite differently by discounting the issue of text quality. He noted instead the element of what readers take away from the material; in essence, whether the intentions of the writer are realised by the reader.

Fundamentally, authentic materials, however defined, can be potential setbacks for individuals who are not ready for them. Rivers (1981) cautioned that learners who are exposed to materials more challenging than their current ability may have their confidence destroyed. Similarly, Williams (1983) observed that using authentic or ungraded materials too soon often causes students to suffer from unintended effects. In making the pertinent choice of reading materials for language learners, these potential outcomes should not be dismissed.

2.4 Graded Readers

Designed as simplified, readable texts for second/foreign language learners, graded readers use controlled vocabulary and grammatical features that are structured according to stages of increasing difficulty (Wan-a-rom, 2008). This provides ideal lexical coverage conditions for different elementary and intermediate levels of competency (Waring & Nation, 2004). Additionally, such texts also offer regular word repetitions for reinforcement and are contextually enriched to assist lexical inferencing (Nation & Wang, 1999; Wodinsky & Nation, 1988).

As graded readers are simplified materials, some parties maintain that they are not appropriate or adequate for language learning. While it is true that simplified materials can be poorly written, uninteresting, bland and stilted (Day & Bamford, 1998), Hedge (1985) noted that there are also graded readers of good quality available: “What a simplified or graded reader can do, and many succeed in doing, is to present a well-written story which keeps the interest of the learners and motivates them to go on reading.” (p. 21) See also Nation and Wang (1999) and Hill (1992).

Below are excerpts from the story *Frankenstein* (authentic and simplified), exemplifying that simplification need not necessarily result in low quality output.

Original text:

“It was on a dreary night of November that I beheld the accomplishment of my toils. With an anxiety that almost amounted to agony, I collected the instruments of life around me, that I might infuse a spark of being into the lifeless thing that lay at my feet. It was already one in the morning; the rain pattered dismally against the panes, and my candle was nearly burnt out, when, by the glimmer of the half-extinguished light, I saw the dull yellow eye of the creature open; it breathed hard, and a convulsive motion agitated its limbs.” (Mary Shelley, first published 1818; excerpt from online edition, p. 58)

Simplified version/Oxford Progressive English Readers (OPER):

“On a stormy night in November, I finally finished my task. The body was built. I collected all my instruments around me so that I might bring life to the creature that lay stretched out in front of me. I worked harder than I had ever worked before. I tried again and again to bring the dead mass to life, but nothing happened. It got very late. At one o’clock in the morning, everything was quiet except for the sound of rain being blown against the windows. My candle was nearly burnt out, but I would not stop working. Then, suddenly, in the dim light, I saw the dull, yellow eye of the creature open! The creature breathed hard and a tremendous shudder moved all through its body.” (Syllabus design and text analysis by David Foulds, 2007, p. 22)

Day and Bamford’s 1998 publication, *Extensive Reading in the Second Language Classroom*, provides a comprehensive list of graded reader series complete with a brief characterisation of each series, mainly based on David Hill’s (1997) reviews.

3. Conclusion

In sum, lexical inferencing during reading is a complex process necessitating the provision of comprehensible input with contextual clues that learners can actually comprehend. Thus, a viable option would be the use of simplified texts in the form of high quality graded readers replete with controlled linguistic load, rich contexts and repetitions.

Essentially, the use of authentic texts is largely suitable for advanced readers while the less proficient are more suited to the use of simplified materials. The ultimate goal is certainly the ability to handle authentic texts comfortably, but one must understand that learners are able to only process text competently at or proximate to their existing level of linguistic ability. Judging by the linguistic rewards that the reading of graded readers can offer, lower proficiency learners stand to benefit tremendously from the use of such texts as a stepping stone towards that goal.

Of essence is also the use of pre-reading vocabulary size testing as well as the application of the 'i + 1' approach in reading programmes aimed at lexical development. While there are other manners of gauging text suitability, such as based on the student's own rough estimation of the proportion of unknown to known words (see Pigada & Schmitt, 2006), it is recommended that language teachers/instructors, course planners and syllabus designers take into account the importance of both pre-reading vocabulary size testing as well as the application of the 'i + 1' formulation.

This method represents an option that is not only practical for use, but also ensures a more systematic and accurate selection of graded reader levels to encourage effective learning and knowledge progression, particularly in the case of remedial or low proficiency learners.

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