

VOCABULARY ACQUISITION: PROCESS AND INSTRUCTION

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ABSTRACT

Building meaning from a written text does not depend solely on vocabulary knowledge. Nevertheless, research has shown that less fluent readers need to increase their vocabulary repertoire in order not to impair fluent reading. If the reader fails to bring word meaning to his/her working memory during the process of reading, global coherence may be affected as he/she cannot activate previous knowledge to interact with information from the text. In contexts of foreign language instruction, an intensive vocabulary building practice may help less fluent readers in the process of interpreting texts. In this sense, we bring up a discussion on some concepts related to meaning of “word”, lexical unit, mental lexicon, lexical entry in L1 and L2, lexical competency and automaticity of lexical recognition and production. As contribution to classroom practice, we propose a discussion on vocabulary knowledge and instruction, relating the topic to reading processing according to the Cognitive Psychology memory system.

Keywords: Reading processing. Cognition. Vocabulary knowledge and instruction.

INTRODUCTION

Learning English in a foreign language (and here we are going to use the term second language, L2) context has been a challenge since the contact with language takes place mostly in the classroom setting. Learner’s acquisition of new words happens quite incidentally if an intensive work is not done in an everyday

basis. We intend to raise discussions on the issue of some concepts related to lexical entry, lexical retrieval, vocabulary instruction, and reading. For this purpose, we organized this article in four parts of research review and discussion, linking some findings to the classroom practice. In the first part, research on the Cognitive Psychology and reading are presented in order to explain what goes on the readers mind during reading. The processing of information is an elaborate task which demands a great deal from the memory system. As a second step, some concepts on knowing a word, lexical entry and automaticity, the role of the context in the process of learning new words. The third topic we find necessary to bring up relates to similarities and differences between the first language (L1) and second language (L2) acquisition/learning process of new vocabulary. Finally, we consider the necessity to relate the discussion to the practice. Therefore, some suggestions are linked to the theory presented and we try to connect some concepts to practice.

1 READING AS A COGNITIVE PROCESS

Reading and understanding have their base in the Cognitive Psychology (CP). The CP tries to explain how the human mind perceives the world around it and uses this perception to perform tasks such as remembering, speaking, solving problems and other actions (HAMPSON & MORIS, 1996). CP conceives the learner as an active information processor. This way, it has contributed to answer questions about how we decode the written word, how a child learns to read. Inquiries about storage and organization of information, its retrieval when necessary, reasons why we remember or forget words, or other information are studied by the CP. It has helped researchers understand how reading occurs. Reisberg (2001), explains that to understand a single story a reader performs activities without being aware, using information from memory, integrating old information, i.e., what he/she already knows, his/her schemata with new information through inferences. While the process of reading takes place, the reader's memory needs to hold parts of a sentence and still make it available to

integrate with the whole. An easy access to the *mental lexicon*² would facilitate the retrieval of word meanings while reading.

According to Hampson & Morris (1996), reading is an activity that exemplifies well how integrative is the cognitive system. It involves language, memory, perception, attention, comprehension and other tasks that work together to get meaning from writing. To understand a simple story, we perform several activities, generally unconsciously, using information from the memory, integrating them to the ones in the text and inferring so rapidly in order not to lose what has been gathered. According to these authors (p. 200), reading “[...] is a task that demonstrates a great deal about the integrated functioning of the cognitive system.”

The CP has helped to explain what goes on in the reader’s mind as reading is taking place. The Working Memory (WM) is responsible for holding information during the process of reading from the beginning to the end of a text. It is due to the WM that we can remember something that we read previously in the text, even after encountering new information. We integrate new material to the previous knowledge and make sense of the written text.

Researchers such as Davis (1968), Beck et al (1982), Anderson and Freebody (1981), Samuels and Kamil (1988) present strong evidence on how important an automatic lexical access can be as it facilitates meaning building for not overloading the cognitive system in the information processing.

Even though we do agree that reading is a means for acquiring vocabulary, we believe/argue that poor vocabulary knowledge may lead to an effort of the working memory in processing information at a global level as the readers mind will be striving to find meaning for unknown words and, thus, may lose coherence. As Graesser et al (1997, p.178) state: “Local coherence is achieved if the reader can connect the incoming statement to information in the previous sentence or WM.” For an efficient reading, both global and local coherence should happen. Frequent encounters with unknown words may result in loss of gathered information as the reader’s attention is allocated to decoding unknown words.

Although vocabulary knowledge is important, we cannot deny that reading is a complex process in which “Knowing the language is not enough. The reader

needs to be able to use other resources such as inference, establish intra and inter-textual relations and use world knowledge to relate it to information in the text (PROCAILO, 2007, p. 34).

2 WHAT DOES IT MEAN TO KNOW A WORD?

At this point, we need to make some concepts we are using clearer. *Vocabulary* has been generally defined as knowledge of words and word meaning. However, to know the meaning of *vocabulary* we need to consider that we can have two forms of words, oral and printed. Oral vocabulary includes the words we recognize and use when we listen and speak, and printed vocabulary the ones in reading and writing.

According to many researchers, we can have two kinds of vocabulary knowledge: *receptive* and *productive*. The receptive one involves the recognition of the words we hear or see, while the productive one involves the words we speak or write. According to Bogaards (2000, p.491), “Nation (1990: 31) has proposed four dimensions of lexical knowledge: form (oral or written), position (grammar and collocations), function (frequency and appropriateness) and meaning (conceptual and associative).” And these four dimensions can be productive or receptive. In other words, the lexical knowledge can be used only to understand language, or produce language as well.

Melka (1997, p.84) believes “it is quite impossible to find a clear and adequate definition of what is meant by reception and production”, because these concepts have not been well defined yet, in spite of being largely estimated. According to her, reception and production are concepts strongly connected to “what it means to know a word”; that is, to the degrees of knowledge of a word. These degrees are part of a continuum, with different stages of word recognition and where the boundaries between reception and production are not clear and/or fixed.

Even though we define vocabulary, we still need to answer very significant questions, like how many words a person needs to know to have a good understanding of a text? What should be counted as a word? That is, to say that a

person knows a specific word, should we consider the single lexical item or the whole word family?

To Bogaards (2000) the concept of *lexical unit* is better than the concept of *word*, because the latter has not been clearly defined in linguistic theory. He argues that a *lexical unit* is assumed to have both a stable meaning and a well-defined form, and its knowledge includes aspects such as form, meaning, morphology, syntax, collocates, discourse and so forth³.

Fluent readers can recognize words visually as a “familiar letter string”. Repeated encounters with a word would develop the process of visual recognition specific to that word. When seeing that word, the reader would process, recognize, and activate information about the meaning of it, which is stored in his memory (HAMPSON & MORRIS, 1996). Therefore, what makes a word easier to be recognized is how recent the word was viewed, encountered and how strong it was elaborated to enter the long-term memory, which is where information is stored to be retrieved anytime. However, according to Harley (1995), any attempt to understand how the learning of a second language vocabulary takes place should take into consideration several factors. These factors refer to the individual differences during the learning process; if the first encounter happened in written or oral form; how frequent the item has been encountered; if it is contextualized or not; the presence or not of extra-textual elements that help comprehend meaning.

Regarding lexical development in L2, Nan Jiang (2000) states that there are three versions of lexical competency definitions accepted in research in the present. The first one refers to word acquisition as the ability to recognize or remember a word or its meaning. In a broader view, though, an individual is supposed to have other types of knowledge besides knowing the form and the meaning of a word. This knowledge includes association of a word and other words in the context, what leads to an appropriate use of it. A third definition refers to lexical competency as an ability rather than knowledge, emphasizing automaticity in the lexical processing. In this sense, vocabulary acquisition is the automaticity of lexical recognition and production. In conclusion, lexical knowledge for Jiang is “the knowledge or information an L2 learner remembers about form, meaning, grammatical usage, and sociolinguistic use of a word that is stored in a

general memory system, rather than integrated into the lexical entry of a word.” (p. 65).

As we can realize, according to research in L2, there are different levels and types of knowledge when referring to words. Melka (1997), for example, claims that the levels of knowledge are infinite. It is difficult to say if a word that we see in context is already stored in the mental lexicon. Lapkoski (2011, p.96) believes that knowing a word is not a matter of yes or no and one important point to be considered is that “the degree of knowledge is reflected in the preciseness with which we rapidly understand a word in different contexts.” If we want to consider the productive knowledge as well, we have to add that it is not only to understand, but to make appropriate use of the word. Besides, another important aspect she considers is that “knowing a word implies to be able to understand its meaning connotations and subtleties, since this is the kind of comprehension which allows us understand idioms, jokes, slangs and so on and so forth.”

Levelt (1993, p. 201) makes use of the **logogen theory** as developed by Morton (1969, 1979), as a general theory of lexical access in both language comprehension and production. He defines logogens as “devices that collect evidence for the appropriateness of a word.” According to the model, logogen is responsible for gathering contextual information from the Cognitive System. According to him, a word such as *table* is easier recognized when a context like: “*The cup was placed on the ...*” than when it follows: “*They went to see the new ...*” .

However, regarding the discussion proposed hereby, the argument that context helps learners understand a text in case of poor vocabulary knowledge is debated by Rott (2005, p. 96). She points out that understanding a word in its context does not necessarily lead to a solid form-meaning connection. Even though this connection may happen, it might not lead to a strong entry of the word in the mental lexicon, therefore it does not lead to learning:

In fact, learning a new word seems to require that it be momentarily ‘isolated from its context’ (e.g., prince, 1996:489) to assign a specific meaning to the lexical form. This isolation permits the reader to allocate attentional resources (e.g., Schmidt, 2001) to orthographic, syntactic and semantic aspects of the new word to potentially encode it in the mental lexicon.

In this sense, we propose that clear instruction of vocabulary, associated with reading helps the process of encoding, storing and retrieving new words. Nation (1993) reinforces that an only encounter with a word does not result in its learning. What happens is that it may establish some kind of learning that can be improved the next time one sees the word. Therefore, by aiding the learning in the process of widening vocabulary in a foreign language, the recurring problem, poor vocabulary knowledge *versus* gathering meaning from context, may diminish. Working with reading, besides developing comprehension and interpretation skills, can help learners develop vocabulary growth.

3 MENTAL LEXICON IN L1 AND L2

Research has shown that in spite of having some similarities, the lexical representation in L1 and L2 are developed in different processes. It seems that in the process of word recognition, in case of children learning the mother tongue, after the first time she/he apprehends the words, some traces remain in the mind, but they are not enough to mean total apprehension. Many encounters with the word are necessary to really encode it in the mental lexicon. A similar process occurs with an L2 learner even though there are differences in the learning context between these two processes.

When Jiang (2000, p.49) sets a Psycholinguistic model of vocabulary acquisition in L2, he presents two constraints on lexical development in instructional settings, which are: 1) “the poverty of input in terms of both quantity and quality”, and 2) “the presence of an established conceptual/semantic system with an L1 lexical system closely associated with it”.

To understand how the L2 lexical acquisition happens we need to know how it happens in L1. Jiang (2000, p. 50) states that a lexical entry in L1 is generally formed by four highly integrated specifications about a lexical item: semantic, syntactic, morphological and formal (phonological and orthographic information). Then, when one wants to access a lexical entry, different kinds of

information are automatically and simultaneously activated. This is because “L1 words are learned as both semantic and formal entities” at the same time.

The L2 words, however, are usually learned in three stages of development, according to Jiang (ibid, p. 50). In the first stage a lexical item is learned as a formal entity, because “learner’s attention is focused on the formal features of the word, i.e. spelling and pronunciation. Little semantic, syntactic, and morphological information is created and established within the lexical entry in the process”. The lexical item reaches the second stage when the L1 semantic and syntax information is copied into the L2 item entry, so that the L1 information is going to mediate the L2 word processing. It changes the way in which the learner makes sense of the new term: he/she uses an existing knowledge to base his/her understanding instead of building a totally new meaning, as it happens during the process of learning new words in L1. The lexical representation reaches the third stage of development “when the semantic, syntactic, and morphological specifications of an L2 word are extracted from exposure and use and integrated into the lexical entry.” (JIANG, 2000, p. 53). Only then, we can consider that a lexical entry in L2 is very similar to an L1 one, both in terms of representation and processing. But, Jiang also points out that “these stages are intended to describe how a specific word evolves in the learning process, rather than how the lexical competence of an individual learner develops as a whole” (id., p. 53), since a learner’s L2 lexicon may contain words at various stages of development.

4 VOCABULARY INSTRUCTION: HOW TO BUILD AN EASY ACCESS?

Since very recently the role of vocabulary in the teaching of L2 was neglected

and it was assumed that a learner would grasp word meaning indirectly. One of our big mistakes as teachers is well presented by Manguashca (1993) when she says:

The underlying assumption was that words and their meanings did not need to be taught explicitly since, it was claimed, learners will ‘pick up’ vocabulary indirectly while engaged in grammatical or communicative activities or while reading. In short, lexical learning was seen as taking

place automatically or unconsciously, as a cumulative by-product of other linguistic learning (p. 84).

According to Reisberg, (2001), if when learning new information, and here we are considering new lexical unit, one needs to be provided with different paths to easily access its meaning. As Rott (2005) mentioned, the more connections we establish between a word and its several meanings and aspects (orthography, syntactic and semantic) more paths to access it one will have. It's like knowing one single way to get to a city. There may be several others, but if they are not known, they will be of no use. Memory works the same way. Reisberg (ibid, p. 165) states that "... memory depends on connections either connections within the to-be-remembered material, or connections between this material and other things you already know. We also suggested that these connections function by making memories 'findable'."

One important aspect to be considered in relation to connections in the process of L2 learning is that meaning construction depends on many factors like the learner's knowledge about the language lexicon, about socio-cognitive strategies of reading and of his/her "previous knowledge about the theme in question. At a reading moment, we cannot separate what we are reading from our previous knowledge. The links we establish between the "new" and the "old" ease our information processing and, thus, the text comprehension. This means that the major or minor understanding of a text varies according to the reader". (LAPKOSKI, 2011, p.56) This is also true, in a stricter sense, in relation to lexical items as well.

What makes the difference, then? What facilitates the retrieval of a word by a foreign/L2 learner? This discussion intends to raise teacher's awareness on the issues of enhancing students' acquisition of vocabulary through reading and to facilitate reading. A lot has to be done by the learner, who needs to have a more active role. Memory connections will be set if the learner pays attention to the material to be remembered during the learning process. However, the teacher is the one who provides the opportunities for these connections to be set, by providing opportunities for the learner to work with new information, new words, in different ways and thus creating multiple connections. The more connections one

has among words/knowledge and within the word, more easily this knowledge will be accessed.

The notion that memory contains a network of associations is new. Theorists speak of **nodes** as the points of connections among different information. The associative links become stronger the more they are activated. The **activation level** of each node will change depending on the amount of activation a node has received and how recently the activation arrived.

If we think of this structure as mental lexicon, for instance, we will realize that when a learner thinks of a word in many different ways, he will be establishing more pathways and, thus, facilitating the access and making it faster when necessary. When one encounters a word, he makes semantic associations, which permit that corresponding nodes link. This, in turn, activates a network of knowledge that is linked as well. The more one's knowledge about a word increases, the more input from different nodes the target node will receive, making it more prone to be accessed, building new pathways and reinforcing existing ones.

What we suggest for classroom practice is related to an elaborate work with vocabulary according to what Rott presents in her article:

It states that the chance that a new lexical or grammatical form will be stored in long-term memory is determined by the shallowness [sensory properties, such as orthographic and phonemic features] and depth [semantic-associative features] with which it is initially processed. Hulstijn (1992) proposed that a higher degree of "mental effort", through inferring and hypothesis-testing of word meaning, leads to better word retention. In a series of studies [see below] he found support for his claim. Hulstijn (2001) further attributed long-term retention of words to more elaborate processing. The level of elaboration increases as learners pay attention to more aspects of word meaning, such as morphophonological, orthographic, prosodic, semantic and pragmatic features, and interword relations (2005, pp. 96-97).

How can this *elaborate processing* take place in the foreign language classroom? Taking the issue of context and vocabulary learning discussed above, we realize that, apart from working interpretation, it is necessary to do several tasks involving vocabulary meaning within the context of a text and in other contexts. Isolated vocabulary exercises as a pre-reading or after-reading task may

help learner to allocate additional resources of his cognitive system to understand the meaning of a word. Research has shown that word retention is higher when students are engaged in more elaborate processing strategies, for instance, inferring, consulting, analyzing the grammatical function of a word, its compounding parts, associating nouns with synonyms, antonyms (Rott, *ibid*). When the learner is engaged in tasks that involves analysis, he/she will pay attention to several aspects of a word. This idea is backed up by what Jiang (2000) mentioned above on the stages of lexical representations: by being exposed to semantic, syntactic, and morphological specifications of a word, the learner will reach the third level of lexical representation, which is similar to lexical entry in L1. Thus, more pathways to reach the word will be built, making the item findable.

FINAL REMARKS

In this paper, we tried to draw attention to the importance of vocabulary work in the teaching/learning process as an aid to make it easier for students to increase their vocabulary knowledge. We understand that knowing a word is not enough to access its different uses in its various contexts of usage, so we argue that clear and specific vocabulary teaching is significant to support the work with reading comprehension.

In addition, we agree with researchers that one only encounter does not assure the lexical item mastering. However, we argue that not knowing a word can make the process of reading a difficult task for some readers. At this point we consider the question of what it means to know a word. We claim that it is not a matter of knowing or not knowing a word. There are degrees of knowledge which may be endless, so we pointed out that it is very difficult to establish what it means to know a word; there are many perspectives we can look at and have to take into account. Furthermore, the development of an L2 learner lexicon may contain words at different stages of acquisition. We can say that lexical items acquisition is

part of a continuum, with non-identifiable stages between reception and production.

As we mentioned, a lot of questions are still to be answered in relation to lexical items/vocabulary acquisition. Nevertheless, classroom practice shows that expanding learner's lexicon helps to lessen their anxiety and reduce their struggle to gather meaning from context, for instance. We also pointed out that different kinds of information are activated in a lexical entry access, such as syntax, morphology, orthography among others. And the more information one has to be accessed about a word more chances one has to understand it.

Finally, we suggest that vocabulary instruction should be clearly given in foreign language classrooms to help with word retention. This could be done through a variety of pre-reading and post-reading activities; especially the ones which actively involve learners in processing strategies.

NOTES

- ¹ Professora mestre em linguística aplicada e leciona língua inglesa no CELIN/ UFPR e na UTFPR.
- ² Professora mestre em linguística aplicada e leciona língua inglesa na UNICENTRO/I.
- ³ "The mental lexicon plays a central role in the generation of speech. It is the repository of information about the words the speaker has available for production. This information involves, at least, the meaning of each item and its syntactic, morphological, and phonological properties (Levelt, 1995, p. 232)."
- ⁴ We are not considering the differences between the terms "lexical unit" and "word" in this article. And we are considering the terms "lexical unit" and "lexical item" as synonyms.

AQUISIÇÃO DE VOCABULÁRIO: PROCESSO E ENSINO

Resumo

A construção de significado a partir de um texto escrito não depende unicamente de conhecimento de vocabulário. Contudo, pesquisas têm demonstrado que leitores menos fluentes precisam aumentar seu repertório vocabular para não afetar a leitura fluente. Se o leitor fracassa em trazer o significado de uma palavra para sua memória de trabalho durante o processo de leitura, a coerência global pode ser afetada, já que ele não consegue ativar conhecimento prévio para interagir com informações do texto. Em contextos de ensino de língua estrangeira, uma prática intensiva de construção de vocabulário pode ajudar leitores menos fluentes no processo de interpretação de textos. Nesse sentido, discutimos alguns conceitos relacionados a significado de “palavra”, unidade lexical, léxico mental, entrada lexical na L1 e L2, competência lexical e automaticidade de reconhecimento e produção lexical. Como contribuição à prática em sala de aula, propomos uma discussão sobre conhecimento e ensino de vocabulário, relacionando o tópico ao processo de leitura de acordo com o sistema de memória da Psicologia Cognitiva.

Palavras-chave: Processamento da leitura. Cognição. Conhecimento vocabular e ensino

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