

Incidental Vocabulary Learning in Second Language Acquisition

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Abstract

Nowadays, vocabulary learning is considered for a number of students one of the most challenging language components. Accordingly, students are not aware that a significant amount of their vocabulary is learned effortlessly given that enough input is provided. This type of vocabulary is learned incidentally. In other words, the learning of the target vocabulary is not formal and explicit. This paper presents a literature review discussing the results of what various studies have found on incidental vocabulary learning. It also tries to show the conditions that should be present for the learning to occur.

Key words

Incidental vocabulary learning, vocabulary retention and encounter

Introduction

Three decades ago, vocabulary learning was often overlooked because researchers and language teachers alike did not think it was of much importance. At that time, American structuralism was the dominant teaching approach, in which form is the center of interest and teaching. Later, researchers came to realize that vocabulary is the kernel of one's language communicative ability (DeCarrico, 2001). First, Coady (1997a) observed that vocabulary was totally neglected in language instruction. The reason behind this neglect is related to a myth created in the heydays of traditional language teaching methods, which assumed that "vocabulary could simply take care of itself" (DeCarrico, 2001; Read, 2004). This notion did not last for long because researchers' interest shifted to the importance of vocabulary. DeCarrico (2001) among many other researchers argued that a certain number of words have to be taught for learners to be functional in a language. Others appeared to be more precise as they argued that 2,000 high frequency words have to be mastered. Surprisingly, and based on the assumption of DeCarrico (2001) and Read (2004) mentioned earlier, researchers found that indeed some vocabulary, but not all, "takes care of itself" (DeCarrico, 2001; Road, 2004). This type of learning is known as incidental vocabulary learning. In general, Nation (2001) recognizes that incidental vocabulary learning increases the volume of the learner's mental lexicon and adds that it is also a crucial form of vocabulary learning that is unfortunately not encouraged by language teachers as they have a tendency to focus on a formal and structured teaching of vocabulary. In this literature review, different views and empirical research will be juxtaposed, in addition to occasional independent conclusions drawn from the findings in the field.

A concise and a more sophisticated definition of incidental learning was given by Huckin and Coady (1999) in which they state that it is "a by-product, not the target, of the main cognitive activity, reading" (p. 182). In other words, Huckin and Coady

mean to say that incidental learning happens when a learner is involved in some mental processing of language, such as reading. However, one has to bear in mind that reading is not the only activity where incidental learning can occur, as listening is a form of receptive language (Hulstijn, Hollander & Greidanus, 1996) that provides ample information, too (Nation, 2001).

The following paragraphs will try to scrutinize a) the difference between incidental learning and intentional learning; b) how incidental learning occurs; c) the frequency and the nature of the environment where the word occurs; d) the influence of dictionary and glossary use; e) problems with incidental vocabulary learning and the benefits of explicit acquisition; and finally f) the balance between the two learning techniques as an ideal approach.

Incidental Learning Versus Intentional Learning

Nation (2001) makes a distinction between incidental and intentional vocabulary learning by stating that the vocabulary learned incidentally refers to all the words that have been learned from a particular context, while vocabulary that is learned intentionally is learned in another manner. Nation sees the difference in the manner in which the vocabulary is acquired, but Tode (2008) believes that there is a qualitative difference in what the learner does with the word. Laufer (2001) elaborates on this point by clarifying that one has to differentiate between what is being done with the word, quality, and how often the word is being met, quantity. It is out of the question that the percentage of the vocabulary learned incidentally through context is smaller than the vocabulary taught explicitly and this is a fact that all vocabulary specialists, without exception, support (Huckin and Coady, 1999; Hulstijn, Hollander & Greidanus, 1996; Nation, 2001; Read, 2004; Tode, 2008). Tode (2008) was the only scholar to observe the unstoppable nature of incidental vocabulary learning. Consequently, this makes us aware that deliberate learning is constantly controllable and deliberately stoppable.

Nation (2001) went further with his research in the field and added that explicit learning is “more conscious” (p. 341) than implicit learning. This does not mean that incidental vocabulary learning is totally unconscious; on the contrary, incidental learning is partially conscious especially when it comes to inferring meaning from context, such as when reading stories, participating in a conversation, listening to television, or watching movies (Nation, 2001). At the end of Nation’s (2001) comparison of incidental and intentional learning, he concludes that the “distinction is not easy to maintain particularly if we accept that all learning involves conscious attention” (p. 233). Interestingly, Hulstijn (2001) argues that the distinction is not that important. What is relevant to him is the quality of the mental process. What Hulstijn tries to convey is that the difference in learning procedures leads to the same product, which is vocabulary retention. To him, the vital part of the whole learning process is what the learner does with the words in question. For example, the student can complete a vocabulary exercise, such as filling in the blanks, matching words and definition, or selecting the appropriate definition.

It is important to note that incidental learning may not be fully unconscious as some researchers claim because the learner is to some extent aware that there is a word that needs negotiation. What is lacking, however, is the appropriate amount of context, exposure and encounter to permit the student to make use of the target vocabulary in spontaneous utterances and sentences.

How Does Incidental Learning Occur?

Before incidental learning can occur, the learner has to possess a certain amount of language knowledge. Up to now, scholars have different views on how much language a learner should know. For example, Coady (1997b) argues that 3,000 word families need to be known in order to provide a safe environment for guessing and inferring word meanings. This still remains a hypothesis since no experimental studies have been conducted to back it up. Logically, 3,000 word families is a huge number of words that can be better presented by multiplying each word family by the number of the parts of speech derived from it. Two years later, Huckin and Coady (1999) modified the aforementioned argument by quoting Nation (2001), who asserted that “a sight-recognition of the 2,000 most-frequent word families of English usually enables learners to recognize and use approximately 84% of the words in a wide range of written texts” (p.184) and consequently allows for incidental learning to happen. In his study of 121 Japanese university students, Webb (2007) made a careful selection of students who already had receptive knowledge of the 2,000 high-frequency words. If one thinks about this carefully, one can come to the conclusion that mastery of 2,000 words is still demanding for incidental learning to occur. All one needs is an appropriately selected text that contains on-sight recognizable words surrounding the target words (Huckin & Coady, 1999).

When encountering an unfamiliar word in a discourse, the learner’s mental processing becomes alert in case the same word appears again (Nation, 2001). In detail, learners develop an encoding strategy, increase the quality of their attention and deepen the processing of the information in order to be able to understand and retain the meaning of the target word (Laufer, 2001). Nation (2001) provides a thorough list of aspects that play a critical role in vocabulary guessing and learning, which are: a) the number of occurrences; b) proximity of reoccurrences; c) presence of relevant clues; d) proximity of relevant clues; e) number of relevant clues; f) explicitness of relevant clues; and g) the density of unknown words. While Nation (2001) examined the aspects of the text and context as his subject of study, Hulstijn, Hollander and Greidanus (1996) looked at the characteristics of the learner, such as a) the depth of elaboration of the target word, b) the quality of the learner’s verbal ability, c) the learner’s use of the dictionary and d) the learner’s use of glosses. Huckin and Coady (1999) have not been precise about the learning factors they provided, but they talked briefly about the demands of the task which falls into the category of the learner’s (or depth of elaboration) mentioned by Hulstijn, Hollander and Greidanus. Sternberg (1987) supports this fact and argues that “simply reading a lot does not guarantee the acquisition of a significant amount of vocabulary. What seems to be critical [is] what one has been able to learn and do with...that experience” (p. 219).

Depth of processing has had an important place in vocabulary research. Laufer (2001) explains that how deep or shallow a word is processed is very important and valuable; and the retention of words has nothing to do with long-term or short-term memory. For the sake of clarity, an example of depth of processing is simply the negotiation of meaning, which Laufer (2001) states is an effective tactic to use in order for words to be remembered. Nation (2001) elaborates on Laufer's point and shows that words are better remembered when they are encountered in situations where it is difficult to interpret them. This requires more cognitive processing which helps in imprinting the target words in one's memory. Similarly, Gass and Selinker (2008) emphasize that negotiation is a key aspect for retention. Despite this agreement on the role of negotiation by scholars, Nation (2001) surprisingly adds that it does not "account for most of the learning, which seemed to occur simply by guessing from context" (p.124). Learners rely also on the morphological and grammatical information of the word in addition to guessing and inferring (Gass & Selinker, 2008).

Nation (2001) skillfully describes the different lives that an unknown word may have:

- 5% to 10% of the words can be guessed correctly and partially learned.
- An unknown word can be guessed correctly, but not retained for use. This kind of life happens to the majority of words.
- A word can be guessed wrongly.
- A word can be disregarded because the learner perceives it as unimportant in the context.

In conclusion, incidental vocabulary learning can be improved if marginal glosses are provided, if dictionaries are efficiently used and if the words reappear in the text (Hulstijn, Hollander & Greidanus, 1996).

Encounter Frequency and the Nature of the Environment

Paribakht and Wesche (1997) generally argue that an increase in reading automatically increases the rate of the incidentally learned vocabulary among learners. However, no concrete figures were provided in their article to support the hypothesis. In Huckin and Coady's review (1999), they conclude that there is no agreement on how many exposures are needed for a word to be retained because the set of studies they selected for reviewing were conducted sporadically and the results they came up with were hugely different. More importantly is that some of the selected studies were meant for L1; however, their justification of the application of L1 results in L2 situations is that incidental vocabulary is learned in the same way (Coady, 1997b; Ellis, 1994; Huckin & Coady, 1999; Mitchell, Myles & Marsden, 2013; Tode, 2008). It is important to highlight that claiming similarity between L1 and L2 incidental vocabulary learning remains questionable. One of the studies that Huckin and Coady (1999) mentioned was conducted in 1978 and it showed that 10 exposures were required for a full retention of the word. Another study in 1985 found that only one exposure was sufficient, but Huckin and Coady (1999) do not provide any description of this specific study in order to see the magic behind this single exposure. It is true that very few words can be learned incidentally by a single exposure, but they have to be structurally, phonologically and semantically

interesting to the learner. Gass and Selinker (2008) added that between two and six exposures were sufficient, meaning that encountering a word twice enabled the learner's vocabulary to grow and encountering a word six times resulted in a larger amount of knowledge and the ability to use the new word. Since both Gass and Selinker took into consideration whether the target vocabulary was added to the receptive or productive knowledge of the language, they could have argued that two exposures were enough for a word to be recognized for receptive language/competence such as reading and listening, while six exposures were required for the target words to be used in the productive language/performance of the learner, that is, writing and speaking. The famous Clockwork Orange study made researchers think that the repetition of words is not significant because the results showed that only 40% of the learners retained some slang Russian words, which were repeated 96 times (Ellis, 1994). One reason why the majority of the learners did not retain the slang words encountered is probably because their lack of interest in using such expressions in their discourse.

In more recent and more carefully conducted research, Webb (2007) wonders why "Saragi [and his colleagues] suggest 10, Horst [and his colleagues] suggest 8, Rott [...] reports that 6 may be enough, and Waring and Takaki [...] suggest that it may take more than 20 encounters to learn new words" (pp.48-49). This variation led him to add several components to his study of 121 students of English in Japan who had studied English for seven years and who scored 80% or higher in their 2,000 Level Vocabulary Test. Students were familiar with most of the 2,000 frequently used words. The new addition to the research was a pre-test, a post-test and nonsense word replacement of target words. The purpose of using the pre-test was to assess the subjects' partial knowledge of the words to assure that the surroundings of the target words were known in order for inferring to be possible; and the use of 10 nonsense words ensured that all subjects were equal in their lack of awareness of the target words for more accurate results (Webb, 2007). Some of the nonsense words he used, for example, were: "ancon" for hospital; "dangy" for street; and "tasper" for evening. Indeed, Webb (2007) came up with interesting findings and his separation of orthography, syntax, association and meaning yielded meaningful results. The study showed that incidental learning starts from the first encounter, with a lower percentage of retention though. Orthography represented the highest percentage (67%) of gains among other aspects of language. After three encounters, slight differences were found and after seven encounters, "larger gains in productive knowledge were demonstrated for all aspects" (p. 61) of the language. After 10 encounters, there was an even more remarkable gain, greater than the previous encounters in both receptive and productive knowledge (Webb, 2007). He concludes that if a word is encountered "ten times in [a] context, sizeable learning gains may occur [and in order to] develop full knowledge of a word more than ten repetitions may be needed" (p. 64). It is possible that one- or two-syllable words are easier to remember, especially if they are written the way they are spelled. However, one cannot claim this to be true because there are instances where multiple-syllable words

are remembered better and faster. Also, word repetition is perhaps not enough. Thus, a look at the surroundings in which the target word falls is necessary.

The environment where the target words occur should be rich and abundant in terms of information availability so that guessing can happen. However, richness of the context may prevent the learner from guessing because ample information is given and the meaning could be inferred without relying on the value of the target word (Huckin & Coady, 1999). Another reason that prevents incidental learning is that the target word is not perceived as important for achieving full comprehension of the idea. Nation (2001) states that a successful incidentally learned vocabulary item requires a number of factors to be present while reading, such as the frequent occurrence of the target words and the necessity of previous knowledge of 95% of the existing words in a text, meaning a single new word has to be placed within two lines of familiar words or in the middle of 20 words. Huckin and Coady (1999) suggest that only 84% of the neighboring words need to be known; however, studies that used a lower percentage than 95% showed that learners were not successful (Nation, 2001). As far as the type of texts which students benefited from is concerned, Huckin and Coady (1999) found that contexts that were related to course readings appealed more to students than others. It seems that the type of context in hand increases learners' motivation and interest in broadening their knowledge of their academic fields. As a result, more vocabulary is learned incidentally.

Influence of Dictionary Use and the Use of Marginal Glosses

Guessing and inferring meanings are not the only techniques that can be used for incidental vocabulary learning. Marginal glosses and dictionaries can also be utilized. Some scholars say that marginal glosses and dictionary use help student readers learn the meaning of unknown words better than when no information is given (Hulstijn, Hollander & Greidanus, 1996). Multiple-choice glosses encourage mental effort through the processing of the given information in which the correct data has to be chosen and wrong information has to be discarded. Glosses doubled learning compared to when no vocabulary activity was provided (Nation, 2001). Hulstijn, Hollander and Greidanus (1996) explain that marginal glosses resulted in better outcomes than dictionaries; and that is because students looked up only 12% of the unknown words. The reason for this neglect in dictionary use is because the words were perceived by students to be unimportant or irrelevant. Nevertheless, students used their dictionaries when they thought the word was relevant and when they were disturbed by its reoccurrence. Students also did not look up words in their dictionaries when they managed to infer the meaning successfully. The only cases in which students used dictionaries was when it was easy to do so by a "simple click of the mouse in a computer presentation" (Hulstijn, Hollander, Greidanus, 1996, p. 336) or when they were inherently good at inferring and they wanted to confirm their guesses (Nation, 2001).

Various studies have demonstrated that inferred meanings are learned much better than meanings that were given out to the learners (Hulstijn, Hollander & Greidanus, 1996). This makes one think of the depth of processing discussed above by Laufer

and Tode. The notion of attention and association discussed earlier by Laufer and Nation is very crucial because students have to notice that there is a new unfamiliar word first, which will create their need to refer to the glosses or to the dictionary. Sometimes it is the students' attitude that makes them disregard some words they encounter. Coady (1997a) points out that when some learners use monolingual dictionaries, they misinterpret the entries and also spend a lot of time looking for and reading explanations. Worse than that is they choose "the wrong entry or the wrong meaning of a polysemous word" (Read, 2004, p. 152). It is surprising that different studies seem to come up with different results and this could be because of the methods used and perhaps the texts selected, which count as the most important component of the research (Webb, 2007). Verbs and nouns are what seem to be remembered the most because they are the parts of speech that occur frequently in natural texts, while adverbs and adjectives are less likely to be retained because of their rare usage and occurrence (Webb, 2007).

Problems with Incidental Learning and Benefits of Explicit Vocabulary Learning

Incidental learning is a major technique through which advanced learners increase their vocabulary. It benefits the learner in many ways and it "is essential for language development" (Coady, 1997a, p. 277). Huckin and Coady (1999) defend the advantages of incidental learning by explaining that it is contextualized, meaning that it allows the student to see the target word used in context. Moreover, incidental learning fulfills the condition of killing two birds with one stone because it engages students in reading or listening while learning new vocabulary. Furthermore, incidental learning is individualized and it is student-centered since it is the students who may choose the materials they want to read (Huckin & Coady 1999). If students read frequently, a good amount of vocabulary is possibly going to be learned. Nation (2001) gives the example that

if a learner reads a million running words of a text a year, and if two percent of these words were unknown, this would amount to 20,000 unknown words per year. If one in twenty of these were learned, the annual gain would be 1000 words a year. One million running words is roughly equivalent to three to four undergraduate textbooks, or ten to twelve novels, or 25 complete Newsweek magazines (p. 238).

It is clear that the more students read, the larger vocabulary they acquire. On the one hand, students choose the material they are interested in. On the other hand, the reading intention is intrinsic and not extrinsic.

Even though incidental learning has all these interesting features, it still has disadvantages such as a) the learner's failure to notice the presence of unknown words; b) the learner's success in noticing a word but failure to proceed to further investigation; c) the learner's failure to connect form and meaning; d) the failure of the environment to provide enough information, leading to a wrong inference; e) the learner's failure to look up words in the dictionary; and f) the failure of the word to occur again (Hulstijn, Hollaner & Greidanus, 1996). Moreover, it was found that incidental learning cannot be relied on as a means of vocabulary learning because it

may result in low learning scores. Furthermore, wrong inferring on the part of students hinders their vocabulary growth (Nation, 2001) and may also discourage them when they receive negative feedback addressing the misuse of vocabulary. Consequently, the motivation of students who are sensitive to correction disappears. Slow and gradual acquisition through incidental learning is ineluctable (Hulstijn, Hollander & Greidanus, 1996) because the reoccurrence of unknown words paves its way to the learners' receptive and productive knowledge. Paribakht and Wesche (1997) also say that incidental learning does not help students cope with their academic demands because of the absence of objectives and structure.

Similar to Huckin and Coady (1999), Paribakht and Wesche (1997) found in a study they conducted that implicit learning through reading is effective, but "contextualized reading plus instruction is superior" (p. 279). The reason instruction is superior in this context is because it makes learning a conscious behavior, focuses attention on a certain area of the language and hastens the incremental and at the same time incidental learning of vocabulary. Not only that, but formal instruction also results in greater gains. Students with specific goals (e.g., academic) have to use both strategies in order to meet the needs of their programs. Wesche and Zimmerman (as cited in Coady, 1997a) demonstrate that both systematic vocabulary learning and learning through reading are successful methods for building one's vocabulary. Since there is a huge amount of vocabulary to be learned, explicit instruction is never enough to cover all the words one may need to understand or use in life. That is why both strategies are highly encouraged. Tode (2008) agrees with Laufer (2001) and explains that explicit knowledge can help in retaining implicit knowledge through the associations and the connections that the learner makes.

Balance between Incidental and Intentional Learning as an Ideal Approach

As mentioned earlier, explicit teaching of vocabulary is very limited since the time spent in formal settings such as the classroom is limited. DeCarrico (2001) says that "we have not been taught the majority of words that we know and that beyond a certain level of proficiency in a second language vocabulary [,] learning is more likely to be mainly implicit (incidental)" (p. 289). She also suggests that programs have to strengthen their explicit teaching of vocabulary, especially for the two or three thousand high-frequency words, and be very selective of materials that will allow students to learn more useful vocabulary through incidental learning. The good thing about incidental learning is that it can occur anywhere, not necessarily through reading. Computer Assisted Language Learning (CALL) specialists have started conducting research about the contribution of computer use as a medium in incidental learning. In CALL there are functions that students have to perform such as sending an email, submitting a comment on a blog, uploading and attaching files, sharing material and posting comments on Facebook. These are all computer activities where the learner acquires vocabulary incidentally. Sometimes, using a computer in the L2 facilitates the learning of new vocabulary by associating the new words to L1 vocabulary. This reminds us of Tode's and Laufer's hypothesis mentioned earlier, in which they claim that explicit knowledge can help implicit knowledge form and, in return, impose itself (implicit knowledge) within explicit knowledge.

DeCarrico (2001) emphasizes that explicit instruction has to be used until the learner reaches the first 2,000 or 3,000 high frequency words. Of course, low frequency words will later be learned implicitly through listening or reading. The reason why instructors have to wait until learners reach a certain level to reduce the explicit teaching of vocabulary is because incidental learning cannot start until a certain percentage of vocabulary is known in a text. The percentage suggested by Nation is 95%. This paper claims that a very small amount of vocabulary needs to be known if the learner is familiar with the surrounding words. Nation (2001) says that incidental learning and intentional learning are “complementary activities” (p. 232) as each facilitates the other. He also argues that a successful language learning program is one that affords an equilibrated chance for message-focused activities and direct teaching of language items, with direct instruction taking up 25% of the whole program. In this case, the communicative teaching approach should be the approach used.

Implications

The findings of the selected studies have a number of important implications for teachers of English as a second or foreign language. To begin with, teachers need to select themed material that students can read or listen to. The advantage that themed material can bring is the use of a range of vocabulary that falls within the same category and that occurs enough times for incidental learning to happen. Most importantly and preferably, teachers should have a collection of reading material that students can choose from. Teachers need to make sure that students are using material they like and that is related to their lives and experience. It is equally important that students use the information they read about in some activities that involve production of language. It is not surprising that in our digital world students interact better with electronic devices and it is probably a good idea to develop material that can be accessible through smart phones and other smart devices. In addition, incidental vocabulary learning is supposed to be ideal in foreign language settings due to limited language exposure. Nonetheless, this limited exposure is what prevents incidental learning, and it could be overcome through various readings and listenings.

Incidental learning has advantages as well as disadvantages. Incidental learning is contextualized as it allows two activities to take place at the same time: reading and vocabulary learning (Paribakht & Wesche, 1997; Huckin and Coady, 1999), but it does not prepare students for academic settings since it does not address any literacy skills such as spelling, pronunciation and learning how to infer meaning. Incidental learning has to be accompanied with explicit instruction for it to succeed (Paribakht & Wesche, 1997). That is why a balance between the two in language programs is necessary. Sooner or later, learners will rely on incidental vocabulary learning since it is unavoidable, unstoppable and it is the primary source of vocabulary learning at the advanced level.

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