

INCIDENTAL OR INTENTIONAL? A CRITICAL ANALYSIS OF INCIDENTAL SECOND LANGUAGE VOCABULARY LEARNING

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Abstract

It is observed that several first language vocabulary is acquired incidentally. Both learners and teachers are aware that learning a second language requires the successful acquisition of large numbers of words. Researchers suggest that second language learners need to know on average 3,000 - 4,000 word-families to understand audio input and up to 8,000 word-families to understand written input. Effective vocabulary learning is thus an enormous but essential task. Incidental vocabulary learning is considered to be the “by-product” of extensive reading and viewing. While there is substantial second language research on incidental vocabulary learning, inconclusive findings have been found, and some key issues are not fully addressed. Focusing on the second language context, this paper aims to explore the concept of incidental learning of second language vocabulary and discusses to what extent it is possible as well as effective from

exposures to reading, reading-while-listening, and audio-visual input. With reference to empirical studies, pedagogical implications for language teaching will be discussed.

Keywords: incidental second language vocabulary learning; effective vocabulary learning; second language learning; critical analysis; Hong Kong

INTRODUCTION

It is known that children can acquire L1 vocabulary via incidental learning (Joseph & Nations, 2018). Focusing on the L2 context, this paper explores the concept of incidental learning of L2 vocabulary and discusses to what extent it is possible as well as effective. With reference to empirical research, implications for language teaching will be discussed.

EFFECTIVENESS OF INCIDENTAL VOCABULARY LEARNING

Contrasting explicit teaching, incidental vocabulary learning is generally regarded as picking up new words while performing a meaning-focused task (Hulstijn, 2001). While many prior studies of incidental learning of L2 vocabulary have focused on reading, more recent research targets audio-visual input exposure. This paper discusses the efficacy of L2 incidental vocabulary learning from exposures to reading, reading-while-listening, and audio-visual input.

Reading and reading-while-listening

While some evidence (e.g., Laufer, 2005) shows that reading leads to insignificant vocabulary gains, previous empirical research has generally shown that reading plays an important role in L2 incidental vocabulary acquisition (e.g.,

Rott, 2007). Several studies (e.g., Teng, 2014) suggest that incidentally acquired vocabulary from intensive reading may be limited, whereas vocabulary gains in extensive reading are acknowledged by numerous researchers (e.g., Chan, 2020; Horst, 2005; Waring & Nation, 2004).

Prior studies on incidental vocabulary learning from reading have traditionally adopted meaning-only and single-tests, but most reported relatively modest gains. For instance, 6.4%-8.1% gains in Pitts et al.'s (1989) multiple-choice meaning recognition test and about 8% gains in Zahar et al.'s (2001) Vocabulary Levels Test. Conversely, higher gains have been found by a growing number of studies which have implemented a multicomponent approach and multi-test approach. For example, 42% and 18% of Japanese target words in Waring and Takaki's (2003) immediate multiple-choice test and translation task, respectively. Similarly, 45% gains were reported by Brown et al. (2008), whereas participants could only recall the meaning of 15% of these words. Teng (2016) also suggested that the most easily acquired knowledge was recognition of form, followed by recognition of meaning, recall of meaning, and recall of form. Focusing on various components (form, grammar, meaning recognition, and recall), Pellicer-Sánchez and Schmitt's (2010) study indicated participants could recognize the form and meaning for 76% and 84% of the words, respectively, while they could recall the word class and meaning for 63% and 55% of the words, respectively, after more than ten exposures in reading a novel. Measuring five components (syntax, grammatical functions, orthography, association, and meaning-form), Webb (2007a) found that Japanese EFL learners gained most (74%) in orthography and grammar recognition and had the least improvement (38%) in production of syntagmatic association. The effect of frequency of exposure is also a major concern; however, there is no agreement on the frequency for incidental learning to occur. Several researchers (e.g., Pigada &

Schmitt, 2006; Webb, 2007b) have suggested that about 10+ exposure is generally required for a considerable gain in vocabulary learning, though it largely depends on learners' interests, attention, word silence, and types of input (Huckin & Coady, 1999). In addition to the frequency, Frances et al. (2020) found that increasing contextual diversity improved recall and recognition of the word. To investigate the process of learning unknown vocabulary from reading, Pellicer-Sánchez (2016) combined both vocabulary tests and online eye-tracking measures and found that L2 readers recognized the form and the meaning of 86% and 75% of the nonwords, respectively, whereas they recalled the meaning of 55% of these nonwords. In line with Godfroid et al. (2013) and Williams and Morris (2004), these results also suggested that the longer reading times, the higher recall test scores. However, the use of invented items in this study might not represent a natural L2 reading context. Other confounding factors include the diverse L1 background and single word class (noun) of target words.

The findings of the aforementioned studies have shown new words could be acquired incidentally in reading, and more exposures to words may strengthen the form-meaning link. Recently, incidental vocabulary learning from reading-while-listening have received more attention. Brown et al. (2008) and Webb et al. (2013) showed that reading-while-listening had a more pronounced effect than reading alone as it helped learners gain awareness of a form-meaning link and refine word recognition. Adopting a multi-dimensional approach, Teng (2018) compared the effects of the reading-while-listening condition and the reading-only condition on 60 Chinese EFL students' acquisition of the four dimensions of vocabulary knowledge: form recognition, grammar recognition, meaning recall, and collocation recognition. The findings showed that new words could be learned incidentally in both conditions, whereas more words were learned in the reading-while-listening condition. It was also found that word exposure

frequency had positive effects on acquisition of word form and grammar but no significant effect on meaning and collocation. However, the results should not be taken as conclusive as Tang did not measure the impact of elaborate word processing, and it was possible that participants only guessed the word meaning rather than fully controlled it.

Audio-visual input

Recently, researchers have started to examine incidental vocabulary acquisition through audio-visual input. In addition to the theoretical support (e.g., Mayer's (2001) theory of multimedia learning), corpus-based research (McFadden et al., 2009; Rodgers & Web, 2011) has revealed that vocabulary acquisition from television could be possible under certain conditions. Furthermore, growing empirical evidence has been found that L2 vocabulary can be learned incidentally from exposure to TV or videos such as learner-centered video genres (Vidal, 2003, 2011), short-length videos (Sydorenko, 2010; Winke et al., 2010) and full-length TV episodes (Peters & Webb, 2018). Vos et al. (2018) conducted a meta-analysis of 32 studies on word learning from spoken input and found that a mean effect size of $g = 1.05$, which represented large gains. Using different guidelines for interpreting effect size, Montero Perez et al. (2013) examined the efficacy of captioned video of ten studies, and a medium effect size ($g = .866$) was found. However, some studies (e.g., Montero Perez et al., 2014) reported relatively low learning gains. It could be due to difficulties of online processing demands in comparison to reading in which learners can refer to previous references (Chan, 2013). To foster L2 incidental vocabulary learning through audio-visual input, numerous researchers have shown it can be boosted by providing on-screen text such as L2 subtitles/captions (Montero Perez et al., 2013) or L1 subtitles (d'Ydewalle & Pavakanun, 1995, 1997; Koolstra &

Beentjes, 1999). Nevertheless, the findings regarding the differential effects of various types of subtitles are still inconclusive. Bisson et al. (2014), for instance, examined three types of subtitles in a movie excerpt: L1 subtitles (L2 Dutch sound, L1 English subtitles), reversed subtitles (L1 sound, L2 subtitles), and captions (L2 sound, L2 subtitles). No differences in learning gains were found between the three conditions. However, Vulchanova et al. (2015) compared the effect of L1 (Norwegian) subtitles, captions (in English), and no subtitles (English audio only) in an animated cartoon and found that only L1 subtitles had an effect. Peters et al. (2016) conducted two exploratory studies investigating the effect of L1 Belgium subtitles and captions on different aspects of word knowledge among EFL learners. Though learning gains were generally low, the findings suggested that captions had the potential to increase form learning. Nevertheless, participants who were exposed to the audio-visual input with L1 subtitles did not perform better than the captions group in the tests focusing on the meaning of the target items. The contradictory results might be explained by different student variables (e.g., learners' vocabulary size) and research designs (e.g., format and time of test administration, item's frequency of occurrence, type of input, and length of input).

Rodgers and Webb (2019) investigated the effects of viewing 7+ hours of television on incidental vocabulary learning. Japanese university students viewed ten 42-minute episodes of an authentic American drama. The results of pre- and post-tests showed that viewing television contributed to significant gains (60 word-families), and there was a positive relationship between frequency of occurrence and vocabulary learning. However, they might underestimate the actual learning gains as most of the learners had not yet mastered the 2,000 words, and posttests only involved words of frequency bands higher than 3,000. Moreover, the use of multi-choice tests cannot show evidence of implicit

knowledge gains. Although their study supported Webb and Rodgers' (Rodgers, 2018; Webb, 2015) proposal for using extensive viewing, based on a single TV programme "Chuck," their findings can hardly be generalized. Furthermore, without the use of pseudowords to rule out prior knowledge effects, the immediate form recognition data could be considered invalid because of testing effects. Other potential confounding factors include imbalance sample size of the experimental group ($n = 187$) and control group ($n = 73$), and the presumption of similar vocabulary sizes of the control group without verification.

Focusing on individual differences, Montero Perez (2020) explored incidental learning after viewing a French documentary containing 15 pseudowords and investigated whether learning was moderated by 63 higher-intermediate learners' prior vocabulary knowledge and working memory, which measured by a French meaning recognition test, a forward digit span (phonological short-term memory), a backward digit-span, and an operation-span task (complex working memory). As suggested by Webb (2015), the results of four surprise vocabulary tests revealed learning gains occurred at the level of form and meaning recognition. It was found that vocabulary acquisition was positively related to picking up new words from video, and there were more incidental learning gains for learners with higher complex working memory. Although Perez adopted some methodological innovations, it is worth noting that no delayed post-test was conducted, and thus, the retention over time is unknown. Moreover, the time pressure of the tests might negatively affect the accuracy.

In general, empirical research has indicated that incidental vocabulary learning occurs from audio-visual input. Nevertheless, some measurement issues are worth noting. For instance, some studies adopted real target words to increase the ecological validity, whereas no test was adopted to control for prior

knowledge. Furthermore, the majority are only based on the use of explicit tests, while other measurements (e.g., lexical decision data) are rarely adopted.

IMPLICATIONS FOR LANGUAGE TEACHING

Based on corpus research, learners need to know on average 3,000 - 4,000 word-families to understand audio input (Webb & Rodgers, 2009) and up to 8,000 word-families to understand written input (Nation, 2006). For accurate contextual guessing, L2 researchers seem to suggest that a learner must know about 98% of the words in the texts (Coady et al., 1993; Laufer, 1997). Therefore, even some researchers (e.g., Laufer, 2005) suggest that learners gain more sizeable vocabulary via explicit instruction; by itself, it cannot account for the sufficient number of words that learners need in order to understand the L2 (Montero Perez, 2020). Hence, providing effective incidental learning activities is crucial to foster L2 learners' lexical acquisition. Huckin and Coady (1999, p. 182) stated that incidental vocabulary learning has three advantages over direct instruction as it is "contextualized," "more individualized and learner-based," and "pedagogically efficient." Various pedagogical implications have been suggested such as providing guidance on how to infer word meaning from context (Schmitt, 2010), establishing certain new words in learners' lexicon (Eckerth & Tavakoli, 2012), providing glosses of unusual words (Ko, 1995), using computer-aided instruction (Chun & Plass, 1996), encouraging student involvement and interaction (Ellis et al., 1994), and prompting reading aloud (Tang, 2018).

Previous studies have generally highlighted the important role of frequency of exposure. Although there is no agreement on the amount, it is suggested teachers should provide L2 learners with enough multiple exposures to the target vocabulary. Pellicer-Sanche (2016, p. 124), for example, recommended teachers increasing the time spent in extensive reading; using different techniques to increase the saliency of target vocabulary; and driving learners' attention to the

target vocabulary by highlighting words. Hulstijn et al.'s (1996) empirical study showed that providing marginal glosses, dictionary use, and the repeated occurrence of unknown words positively affected incidental vocabulary acquisition. Shahrokni (2009) also provided empirical evidence that multimodal annotations improved incidental vocabulary learning. In addition to reading, extensive viewing is suggested to be used together with extensive reading as a source of input, especially choosing programs that interest them (Rodgers & Webb, 2017). Rogers (2018) identified three areas of investigation, including understanding the habits of successful learners, the relationship between classroom activities and out-of-class viewing, and institutional adoption. Moreover, providing L1 and/or L2 subtitles is also showed to be an effective strategy (Peters et al., 2016).

Huckin and Coady (1999, p. 182) highlight some crucial questions that teachers should consider: How many and what kinds of exposures to a word does the learner need? What word-guessing strategies are most effective? Do students need to be taught explicit strategies? Are some kinds of reading texts more conducive? Since the success of incidental vocabulary learning depends on various factors (e.g., learners' working memory, prior vocabulary knowledge, attention, task demands, and contexts), teachers should adapt flexible strategies according to the diverse circumstances (Chan, 2018). Some studies have indicated incidental vocabulary learning can be enhanced through meaningful text-based tasks (Parry, 1993, 1997), task-based interaction (Newton, 1995), and tasks demanding attention, retrieval, and generation (Joe, 1995).

While numerous benefits have been shown by empirical evidence, the use of incidental and intentional learning should be complementary instead of replacing one another. Several researchers (e.g., Alcón, 2007; Paribakht & Wesche, 1997) suggest that the integration of intentional pedagogical methods

can enhance the incidental learning experience. Ramos and Dario (2015) also state that a combination of intentional and incidental learning may solve issues that come from a single incidental learning approach. For example, cognate monitoring (Moss, 1992) and meta-cognition training (Prince, 1996) need to be taught explicitly with extensive reading.

CONCLUSION

To conclude, incidental vocabulary learning is not entirely “incidental”. Numerous researchers have examined its mechanism, the type and size of words for correct guessing, the amount of exposure for retention, the effectiveness of various strategies and activities, the influence of different inputs, and the problems (Ramos & Dario, 2015). In terms of methodology, Kweon and Kim (2008) state that the contrasting results could be accounted for faults of the experimental methodology such as amount and types of texts as well as number and nature of test items. Further experimental studies should be carefully designed based on a well-defined methodology so that results of previous studies can be fully considered. Further research on multimodal input sources (e.g., combination of auditory and visual traces) with different types of tests (e.g., timed and untimed) in various contexts (in-class and outside-class) for different levels of learners are needed to shed light on the role of incidental vocabulary learning.

Empirical evidence has generally suggested L2 incidental vocabulary learning is possible through reading, reading-while-listening, and audio-visual input, while its effectiveness depends on various factors. However, it is worth noting that incidental learning is not without limitations. Huckin and Coady (1999) emphasize that guessing does not necessarily translate into acquisition. It depends on educated guesswork, and it can lead to imprecision, misrecognition,

and interference. Thus, it requires prior training in word recognition, metacognition, multiword phrases, and collocations (Haynes, 1993). Teachers should help learners develop core vocabulary, effective listening and reading strategies, and gain prior familiarity with the subject matters.

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