

The Effects of Bottom-Up, Interactive and Top-Down Listening on L2 Incidental Vocabulary Acquisition

Babak Mahdavy^{1,*} , Golkhand Azizinejad² and Zohreh Latifi¹

¹ Islamic Azad University, Qaemshahr, Iran

² Islamic Azad University, Sari, Iran



10.22080/iselt.2022.23735.1038

Received

November 14, 2023

Accepted

December 4, 2023

Available online

December 28, 2023

Keywords

Bottom-up,
Interactive, Top-
down, L2 listening,
Incidental vocabulary
acquisition

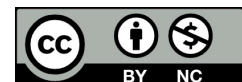
Abstract

Although previous research studies have shown that the rate of incidental vocabulary acquisition through listening is affected by various factors such as gloss type and listening proficiency (Çekiç, 2022; Zhang & Graham, 2020), the effects of top-down, bottom-up and interactive listening on incidental acquisition of words have not been examined. The present study, therefore, was aimed to examine the effects in a university laboratory. A group of 90 lower-intermediate English language learners majoring in dentistry and medical sciences took part in the study. The participants were between 19 and 24 years old and Key English Test (KET) was employed to assess their proficiency. Learners' knowledge of the new words was assessed before and after listening using Vocabulary Knowledge Scale (VKS). Descriptive statistics, t-test and one-way analysis of variance (ANOVA) were run to examine the differences in vocabulary acquisition before and immediately after the learners listened to the audio clips. The results indicated that the learners in the three groups were equally able to acquire the new words and there were not any statistically significant differences in the effects of the three types of processing (bottom-up, interactive and top-down) on L2 incidental vocabulary acquisition. Implications of the findings will be discussed.

1. INTRODUCTION

Incidental learning happens when learners acquire new aspects of their L2 without paying attention to what they do (Schmidt, 1994). Many studies on LI and L2 vocabulary acquisition have supported the claim that most of the vocabulary items are learned incidentally, that is, as a by-product of being engaged in a listening, reading, speaking or writing activity and it has been also mentioned that few words are acquired by an act of intentional learning (Coady, 1997a; Ellis, 1994; Hatch & Brown, 1995; Nagy & Herman, 1987; Nation, 1990; Schmidt, 1994). The studies in this area, however, have mostly focused on the relationship between reading and vocabulary learning (e.g. Dupuy & Krashen, 1993; Hulstijn, 1992; Lynch, 2009; Pitts et al., 1989). Variables which

* Corresponding Author: Babak Mahdavy, Department of English, Qaemshahr Branch, Islamic Azad University, Qaemshahr, Iran. Email: b.mahdavy@yahoo.com



have been investigated in the area of reading comprehension and incidental vocabulary acquisition include L1 and L2 glosses (Choi, 2016), context and word order frequency (Teng, 2019), reading-only and reading-while listening (Chen, 2021), topic familiarity and rhetorical organization of texts (Mahdavy, 2011), repetition and L1 lexicalization (Ghaedi & Shahrokhi, 2016) and the kind of task (Kaivanpanah et al., 2020).

Nation and Newton (2009) asserted that listening can also provide L2 learners with information through which they can build up the knowledge required for using the language. Pavia et al. (2019) stated that language learners can acquire new words incidentally through listening to songs and Smidt and Hegelheimer (2004) pointed out that incidental learning of words occurs while listening to online academic lectures. Although it has been shown that words can be acquired incidentally in listening and that listening leads to smaller vocabulary gains than reading (Brown et al., 2008; Vidal, 2011), it is not yet known to what extent different variables associated with L2 listening can contribute to higher rates of incidental vocabulary acquisition through L2 listening. Some of the studies, however, have reported that listening proficiency plays a more important role than pre-existing vocabulary knowledge in incidental acquisition of words through L2 listening (Zhang & Graham, 2020), proficiency level and aptitude positively affect language learners' incidental vocabulary acquisition when they view captioned videos (Teng, 2022), the type of caption (full caption with highlighted targeted words and L1 gloss, full caption with no audio and full caption) does not affect incidental vocabulary learning (Hsieh, 2020) and audiovisual input combined with traditional and multiple-choice glosses significantly affect incidental vocabulary acquisition (Çekiç, 2022).

The research studies conducted so far, however, have not examined listeners' type of processing on incidental vocabulary acquisition. In the process of listening listeners can use top-down, bottom-up and/or interactive processing. Top-down processing has been defined as the use of background knowledge in comprehending messages (Richards, 1990) and as it was pointed out by Van Duzer (1997), it refers to the process by which a message is interpreted by using schemata. Lingzhu (2003) stated that in top-down processing learners utilize their prior knowledge to make predictions about the text. Bottom-up processing, however, has been introduced as "the use of incoming data as a source of information about the meaning of a message" (Richards, 1990; p. 51). While using bottom-up processing, the listener relies on his lexical and grammatical competence in a language to process the information. Other studies have indicated that in real-life situations, listening draws on both bottom-up and top-down processing and it is basically an interactive process (Brown, 2004; Oprandy, 1994; Oxford, 1993).

Craik and Tulving (1975) argued that the chance that some pieces of new information will be stored into long-term memory or not is determined by the shallowness or depth with which it is initially processed. Considering the fact that in the top-down, bottom-up and interactive listening the incoming information is processed in three different ways, we might hypothesize that the rate of new vocabulary learners acquire incidentally can be impacted by the differences in type of listening. Language learners always experience these three types of processing both in the classroom context and real world environments. And while acquiring new words incidentally during listening, they focus on different sources of information under these three different processing conditions, which might cause them not be equally able to acquire the new words incidentally. Thus, it might be interesting to examine their effects on vocabulary learning. In order to investigate the issue empirically, we, therefore, formulated the following research question:

Does the type of processing (bottom-up, interactive and top-down) affect L2 learners' incidental vocabulary acquisition?

2. LITERATURE REVIEW

After many years of being considered as the Cinderella skill in second/foreign language learning, listening was viewed as an important skill in 1970s (Richards & Rodgers, 2001) and the centrality of the skill in L2 acquisition was well established in 1980s (Larsen-Freeman, 2000; Richards & Rodgers, 2001). During this time, Communicate Language Teaching (CLT) which emphasized the teaching of the four language skills including listening emerged (Richards & Rodgers, 2001). In addition, one of the major theories of language acquisition which further highlighted the importance of listening was proposed by Stephen Krashen, who argued that language learning occurs from comprehensible input which is provided through listening and reading (Krashen, 1982, 1985). The Input Hypothesis was criticized later (e.g. McLaughlin, 1987); however, Krashen (1998) provided empirical evidence in support of the hypothesis and refuted the idea that comprehensible output (Swain, 1985; Swain & Lapkin, 1995) plays a significant role in language learning. In 1999 Vandergrift described listening as

“a complex, active process where the listener must discriminate between sounds, understand vocabulary and grammatical structures, interpret stress and intonation, retain what was gathered in all of the above, and interpret it within the immediate as well as the larger sociocultural context of the utterance”. (p. 168)

As it can be inferred from the quotation above, each experience of listening may involve some degrees of bottom-up (e.g. distinguishing the sounds) and top-down (e.g. identifying the context) processing. Lingzhu (2003) stated that in top-down processing learners utilize their prior knowledge to make predictions about the text. While using bottom-up processing, the listener relies on his lexical and grammatical competence in a language to process the information. Previous studies indicated that in real-life situations, listening draws on both bottom-up and top-down processing and it is basically an interactive process (Brown, 2004; Oprandy, 1994; Oxford, 1993).

The studies which have been conducted to show how listening comprehension can be enhanced mostly focused on the role of tasks, type of listening input, person-specific attributes and listening strategies. Joyce et al. (1992) suggested that pre-listening tasks which may involve pre-teaching of vocabulary, grammar, or rhetorical structure and discussion of topics related to the contents in the upcoming input can help language learners pre-structure information and prepare for the listening stage. Madani and Kheirzadeh (2018) examined the effects of different pre-listening activities on L2 listeners' comprehension ability and concluded that pre-teaching of the new words has the strongest effects on elementary and advanced language learners' listening comprehension.

The effects of input type on L2 learners' listening comprehension is another area of research which has garnered interest especially in environments in which technology is used for teaching and assessing listening. For example, Wagner (2013) reported that test takers who were exposed to audiovisual input outperformed the group of English language learners who received audio-only input. It was also found that audio-visual input in comparison with audio input is more conducive to L2 acquisition. Zhang and Zou (2021) reviewed 41 research papers which examined the effects of various input modes and concluded that audio-visual input has stronger positive effects on language learners' L2 acquisition as compared with the audio-only condition, cognitive connections between the audio and visual sources of information are reinforced in learners' minds. They pointed out that audio-plus-animation-plus-captions/subtitles can create optimal conditions for vocabulary and grammar learning through listening.

Learners' individual characteristics were also the focus of many research studies which investigated the role of variables such as motivation, cognitive style, aptitude, anxiety and self-

efficacy in L2 listening. The results of these studies indicated that listening comprehension is negatively correlated with amotivation (Vandergrift, 2005), field independence is significantly related to L2 listening (Satori, 2022), there is a positive and statistically significant relationship between aptitude and L2 listening (Sok & Shin, 2021), and anxiety which negatively affects self-efficacy during listening is negatively associated with L2 listening performance (Canaran, et. al. 2020).

Another factor which has been found to play a significant role in listening is the use of listening strategies. The results of the studies which investigated the issue revealed that metacognitive, cognitive and socio-affective strategies (Vandergrift, 1997) significantly contribute to listening performance. Some examples of such studies include Vandergrift and Tafaghodtari (2010) who showed metacognitive strategy instruction has positive effects on L2 listening and Bozorgian et al. (2021) who reported that L1-mediated metacognitive intervention could significantly improve listening comprehension. In addition, Kök (2018) illustrated that the use of cognitive strategies is significantly related to L2 listening performance.

Since a higher rate of comprehension can improve chances of success in language learning, the variables which help learners maximize their comprehension are likely to have positive effects on their acquisition of vocabulary through listening. Many research studies have tried to shed light on this aspect of L2 listening and showed that many new words can be acquired incidentally, when the learners are not forewarned about a vocabulary retention test after listening (Eysenck 1985). The studies conducted by Pavia et al. (2019) and Smidt and Hegelheimer (2004) provided empirical evidence in support of the claim as they reported that language learners can acquire new words while listening to songs or academic lectures. Most of the studies conducted in this area have focused on the effects of different kinds of listening input on incidental acquisition of the new words in listening. Çekiç (2022) compared the effects of traditional gloss, multiple-choice gloss and no gloss conditions on language learners' listening comprehension performance and found that learners who were exposed to the audiovisual input under the two gloss conditions could acquire more words. Other studies investigating the role of listening input in vocabulary acquisition showed language learners could recall 35% of the word meanings and 28% of the word forms after watching an entire season of a French series (Fievez, et al., 2021) and learners in the glossed keyword captions group had the best performance on tests which measured meaning recall and form recognition (Perez, 2018).

3. METHOD

A quasi-experimental design with a pretest and a posttest was used to conduct the study. The dependent variable was incidental vocabulary acquisition and the independent variable was the type of listening (top-down, bottom-up or interactive). The learners' posttest scores were used to compare incidental vocabulary acquisition in the three groups immediately after listening.

Participants

The study involved 90 female (N=50) and male (N=40) English language learners who were at the lower-intermediate level of proficiency. They were studying dentistry and medicine at a university of medical sciences and their age ranged between 19 and 24. The participants were selected through convenience sampling method and were randomly divided into three groups (bottom-up, interactive and top-down). Only the students who agreed to take part in the study by completing a consent form participated in the study.

Instruments

The instruments utilized in the study included KET, three types of listening tasks (bottom-up, interactive and top-down) and the Vocabulary Knowledge Scale (VKS). KET which has the

difficulty level of **A2** according to the Common European Framework of Reference for Languages (CEFR) is generally designed for those who have some knowledge of reading, writing, speaking and listening. In the present study the test was used in order to assess L2 learners' proficiency level before the experiment and to have homogenized groups of participants. KET has three sections:

- 1- **Listening**: 25 minutes, 25 listening items
- 2- **Reading and Writing**: 60 minutes, 30 reading items and two writing parts
- 3- **Speaking**: 8-10 minutes

Cronbach's alpha value was computed for the KET items and a reliability score of .72 was obtained. Therefore, it was concluded that the data collected by KET were reliable as the value did not fall below .60 (Dörnyei, 2007).

Three tasks were designed to have the L2 listeners acquire the new words incidentally. In task A they were supposed to use bottom-up processing by filling in the gaps with the appropriate words they listened to. In task B, which was interactive they listened to the same audio and put the statements in the correct order. And finally, in the third group the participants completed a top-down task in which they found an appropriate topic after they listened to the audio clip in each part.

VKS was the next instrument employed in the study. It was used to assess the participants' knowledge of the words before and after the experiment. This instrument is in fact a self-report assessment tool developed by Wesche and Paribakht (1996), who suggested that it is sensitive enough for the purpose of quantifying incremental word knowledge gains. There were pre-VKS (before performing the tasks) and immediate post-VKS tests (after performing the tasks). The VKS tests contained the new vocabulary which appeared in the audio clips. They also included words which did not exist in them. Reliability of the pre-VKS and post-VKS data was .93 and .95 respectively.

Procedure

Arrangements were made with the university for collecting data in the laboratory and then information about the purpose of the study and details of administration procedure were provided. Once the participants completed the consent forms, KET was administered to assess students' level of proficiency. The learners were then assigned to three groups each consisting of 30 participants who answered the listening comprehension questions wearing headphones in the laboratory. The VKS test was administered in the next stage to measure the participants' familiarity with 40 words used in the audio. A week later the three listening tasks which were intended to activate bottom-up, interactive or top-down processing were completed in the same laboratory. The unfamiliar words were glossed both in English and learners' mother tongue and each listening was played twice. The audio files were randomly selected from among the files accompanying Developing (seven files) and Expanding (two files) Tactics for Listening (Richards, 2010). Although it was decided that the audio clips were appropriate for learners at this level of proficiency, some of the new words which they were not supposed to learn incidentally were taught after examining the pre-VKS results and before administering the immediate vocabulary posttest. There were on average fewer than five unfamiliar words in each listening. The participants were told that they could also take notes while listening to the clips. Immediately after the listening the answer sheets were collected and students were given a surprise VKS test (immediate post-VKS) to assess their knowledge of the new words. The data were collected in the same class and by the same instructor.

4. RESULTS

In order to answer the research question, descriptive statistics of the variables were calculated first and then statistical tests were run to examine homogeneity of the three groups. The results related to the participants' performance on KET are shown in Table 1.

Table 1: Descriptive Statistics of Proficiency Scores by Group

	N	Minimum	Maximum	Mean	Std. Deviation
Group (1)	30	33.00	59.00	49.86	8.02
Group (2)	30	23.00	60.00	48.63	9.14
Group (3)	30	28.00	60.00	52.23	7.51
Total	90	23.00	60.00	50.24	8.29

Group (1): bottom-up; Group (2): interactive; Group (3): top-down

As reported in Table 1, the KET mean scores were 49.86, 48.63 and 52.23 in group 1, 2 and 3 respectively. In the next stage of analysis, the participants' scores in the three groups were compared using one-way ANOVA. Table 2 shows that there were not statistically significant differences between the group means ($p = .23$).

Table 2: One-Way ANOVA Results Showing the Difference in the Performance on the KET

	Sum of Squares	df	Mean Square	F	Sig
Between Groups	200.82	2	100.411	1.473	.235
Within Groups	5929.80	87	68.159		
Total	6130.622	89	50.24		

Participants' prior knowledge of the words they were supposed to learn incidentally was the next variable which was checked in the three groups. Table 3 shows learners' performance on pre-VKS in the three groups (bottom-up, interactive or top-down)

Table 3: Descriptive Statistics of Pre-VKS Scores

	N	Minimum	Maximum	Mean	Std. Deviation
Group (1)	30	86.00	175.00	136.20	23.55
Group (2)	30	94.00	189.00	136.70	29.15
Group (3)	30	100.00	184.00	137.70	25.56
Total	90	86.00	189.00	136.86	25.90

Group (1): bottom-up; Group (2): interactive; Group (3): top-down

Moreover, one-way ANOVA was used to compare learners' vocabulary knowledge scores in the three groups and see if there were differences between them before listening to the audio. As it is shown in Table 4, there were not statistically significant differences in the pre-VKS scores students obtained at this stage ($p = .97$).

Table 4: One-Way ANOVA Results Showing the Difference in the Pre-VKS Scores

	Sum of Squares	df	Mean Square	F	Sig
Between Groups	35.00	2	17.500	.026	.975
Within Groups	59701.400	87	686.223		
Total	59736.400	89			

Finally, the participants' knowledge of the words they acquired incidentally was also compared after they listened to the audio clips and answered the vocabulary questions. The differences in the mean scores in the three groups showed an increase in learners' vocabulary knowledge (see Table 3 & Table 5).

Table 5: Descriptive Statistics of Post-VKS Scores

	N	Minimum	Maximum	Mean	Std. Deviation
Group (1)	30	110.00	200.00	170.53	27.25
Group (2)	30	104.00	200.00	165.53	28.77
Group (3)	30	119.00	200.00	164.60	25.40
Total	90	104.00	200.00	166.88	27.00

Group (1): bottom-up; Group (2): interactive; Group (3): top-down

After examining normality of the data through the skewness and kurtosis tests and making sure that the values fell within the acceptable ranges, the participants' pre-VKS and post-VKS scores were compared using paired-samples t-tests. The results of the three paired-samples t-tests which were run to compare the pre-VKS and post-VKS scores in the groups indicated that the differences were statistically significant in all the three groups ($p < .05$) (see Table 6).

Table 6: Paired Samples T-Tests for Comparing Pre-VKS and Post-VKS Scores

	Mean	Std. Deviation	Std. Error of Mean	95% Confidence Interval of the Difference		Std. Deviation	t	df	Sig.(2-tailed)
				Lower	Upper				
Group (1)	-34.33	17.58	3.20	-40.89	-27.76	27.25	-10.69	29	.00
Group (2)	-28.83	40.03	7.30	-43.78	-13.88	28.77	-3.94	29	.00
Group (3)	-26.90	27.83	5.08	-37.29	-16.50	27.00	-5.29	29	.00

Group (1): bottom-up/pre-test and posttest; Group (2): interactive/pre-test and posttest; Group (3): top-down/pre-test and posttest

Table 7 shows whether there was a statistically significant difference between the post-VKS means. The results of one-way ANOVA, which was used to compare the post-VKS means in the three groups, indicated that there was not a statistically significant difference in the mean scores ($p = .66$). It was, therefore, concluded that the type of processing (bottom-up, interactive and top-down) does not significantly affect L2 learners' incidental vocabulary acquisition.

Table 7: One-Way ANOVA Results Showing the Difference in the Post-VKS Scores

	Sum of Squares	df	Mean Square	F	Sig
Between Groups	610.756	2	305.378	.413	.663
Within Groups	64274.133	87	738.783		
Total	64884.889	89			

5. DISCUSSION

The purpose of the present study was to investigate the effects of bottom-up, interactive and top-down listening on L2 learners' incidental acquisition of the new words. In line with what was reported in other studies such as Pavia et al. (2019) and Smidt and Hegelheimer (2004), the results confirmed that language learners acquire new words through listening as post-VKS scores were significantly higher than pre-VKS scores. It has been posited that listening comprehension activities of any kind may have effects, weaker or stronger, on learners' selective attention to vocabulary items (Hsieh, 2020). This was also emphasized by LaScotte (2020) who suggested that listening texts can be leveraged to develop L2 vocabulary. Our study supports the idea that listening comprehension activates the mental processes needed for vocabulary learning and the rate of comprehension affects language learners' ability to acquire different aspects of language including the lexicon (Fievez et al., 2021; Krashen, 1985; Zhang & Zou, 2021).

However, the results revealed that the type of listening (bottom-up, interactive and top-down listening) does not have a statistically significant effect on incidental vocabulary acquisition. Previous studies emphasized the role of bottom-up processing in listening comprehension (e.g. Ke & Wang, 2022; Mahdavy, 2008; Tsui & Fullilove, 1998). In addition, it can be argued that in bottom-up listening in which L2 listeners use their lexical and grammatical competence (Richards, 1990) they are more likely to pay attention to the word forms which are learned before acquiring other aspects such as word meaning (van Zeeland & Schmitt, 2013). Moreover, unlike bottom-up listening, interactive and top-down listening can cause L2 listeners to go through different meaning-making processes as in both types of listening they use their background knowledge to construct meaning. Nevertheless, as the results of our study indicated, the slight difference caused by the higher rate of vocabulary learning in the bottom-up group (see Table 5) was not statistically significant. Therefore, it can be concluded that the positive effect of bottom-up processing in L2 listening which was reported in other studies does not impact incidental acquisition of the new words from listening.

In addition, the depth of processing the new words (Craik & Tulving, 1975) could have had varied effects across the groups as, for example, in the interactive group both bottom-up and top-down processing can be involved and this can affect incidental acquisition of the words. According to the findings, however, depth of processing does not seem to affect the rate of incidental vocabulary acquisition through listening as it has been shown that the three kinds of listening are equally effective in the process of acquiring words incidentally in listening.

6. CONCLUSIONS

The primary goal of this study was to investigate the effects of bottom-up, interactive and top-down listening comprehension on incidental acquisition of new words which were glossed in English and learners' mother-tongue. The results indicated that the participants acquired the new words after being exposed to them through listening twice. It is, therefore, recommended that curriculum designers, materials developers and language teachers create opportunities for facilitating incidental vocabulary acquisition through appropriate forms of listening which can enhance learners' comprehension. They can, for example, design tasks completion of which involves incidental acquisition of glossed words in the process of listening for meaning. This way language learners can benefit from listening instruction and at the same time improve their vocabulary knowledge.

The findings of the study, however, did not show that there was a statistically significant difference in the rate of incidental vocabulary acquisition in the bottom-up, interactive and top-down listening. In other words, the three groups similarly benefited from the three kinds of listening. Considering the fact that this study included lower intermediate language learners, we

recommend that further research be conducted to compare the effects across the proficiency groups and see if similar results are obtained when language learners at higher levels of listening proficiency are also involved. Follow-up research can also investigate the effects of other bottom-up, interactive and top-down listening tasks and show which aspects of vocabulary knowledge (form, meaning and/or use) can be acquired more effectively by the use of each kind of processing during listening.

References

- Bozorgian, H., Fallahpour, F., & Amiri, M. A. (2021). Listening for young-adult EFL learners: Metacognitive intervention through L1. *International Journal of Listening*. <https://doi.org/10.1080/10904018.2021.1923499>
- Brown, G., Waring, R., & Donkaewbua, S. (2008). Incidental vocabulary acquisition from reading, reading-while listening, and listening to stories. *Reading in a Foreign Language*, 20(2), 136-163.
- Brown, H. D. (2004). *Language assessment: Principles and classroom practices*. Pearson Education.
- Canaran, Ö., Bayram, İ., Doğan, M., & Baturay, M. H. (2020). Causal relationship among the sources of anxiety, self-efficacy, and proficiency in L2 listening. *International Journal of Listening*. <https://doi.org/10.1080/10904018.2020.1793676>.
- Çekiç, A. (2022). Incidental L2 vocabulary learning from audiovisual input: The effects of different types of glosses. *Computer Assisted Language Learning*. <https://doi.org/10.1080/09588221.2022.2062004>
- Chen, Y. (2021). Comparing incidental vocabulary learning from reading-only and reading-while-listening. *System*, 97, 102442. <https://doi.org/10.1016/j.system.2020.102442>
- Choi, S. (2016). Effects of L1 and L2 glosses on incidental vocabulary acquisition and lexical representations. *Learning and Individual Differences*, 45, 137-143. <https://doi.org/10.1016/j.lindif.2015.11.018>.
- Coady, J. (1997). L2 vocabulary acquisition through extensive reading. In J. Coady & T. Huckin (Eds.), *Second language vocabulary acquisition* (pp. 225-237). Cambridge University Press.
- Craik, F. I. M., & Tulving, E. (1975). Depth of processing and the retention of words in episodic memory. *Journal of Experimental Psychology: General*, 104(3), 268-294.
- Dornyei, Z. (2007). *Research methods in applied linguistics*. Oxford University Press.
- Dupuy, B., & Krashen, S. (1993). Incidental vocabulary acquisition in French as a foreign language. *Applied Language Learning*, 4(1), 55-63.
- Ellis, R. (1994). *The study of second language acquisition*. Oxford University Press.
- Eysenck, M.W. (1982). Incidental learning and orienting tasks. In C. Puff (Ed.), *Handbook of research methods in human memory and cognition* (pp. 197-228). Academic Press.
- Fievez, I., Montero Perez, M., Cornillie, F., & Desmet, P. (2021). Promoting incidental vocabulary learning through watching a French Netflix series with glossed captions. *Computer Assisted Language Learning*. <https://doi.org/10.1080/09588221.2021.1899244>
- Ghaedi, R., & Shahrokhi, M. (2016). The impact of visualization and verbalization techniques on vocabulary learning of Iranian high school EFL learners: A gender perspective. *Ampersand*, 3, 32-42. <https://doi.org/10.1016/j.amper.2016.03.001>
- Hatch, E., & Brown, C. (1995). *Vocabulary, semantics, and language education*. Cambridge University Press.

- Hsieh, Y. (2020). Effects of video captioning on EFL vocabulary learning and listening comprehension. *Computer Assisted Language Learning*, 33(5-6), 567-589.
<https://doi.org/10.1080/09588221.2019.1577898>.
- Hulstijn, J. H. (1992). Retention of inferred and given word meanings: Experiments in incidental vocabulary learning. In P.J.L Arnaud & H. Bejoint (Eds.), *Vocabulary and Applied Linguistics* (pp.113-125). Macmillan.
- Joyce, B., Weil, M., & Showers, B. (1992). *Models of teaching*. Allyn and Bacon.
- Kaivanpanah, S., Alavi, S. M., & Ravandpour, A. (2020). The effect of input-based and output-based tasks with different and identical involvement loads on Iranian EFL learners' incidental vocabulary learning. *Cogent Psychology*, 7(1), 1731223.
<https://doi.org/10.1080/23311908.2020.1731223>
- Ke, Z., & Wang, Y. (2022). Exploring the relationship between aural decoding and listening comprehension among L2 learners of English. *System*, 104, 102688.
<https://doi.org/10.1016/j.system.2021.102688>
- Kök, Z. (2018). Relationship between listening comprehension strategy use and listening comprehension proficiency. *International Journal of Listening*, 32(3), 163-179.
<https://doi.org/10.1080/10904018.2016.1276457>
- Krashen, S. D. (1982). *Principles and practice in second language acquisition*. Pergamon Press.
- Krashen, S. D. (1985). *The input hypothesis: Issues and implications*. Longman.
- Krashen, S. D. (1998). Comprehensible output? *System*, 26(2), 175-182.
[https://doi.org/10.1016/S0346-251X\(98\)00002-5](https://doi.org/10.1016/S0346-251X(98)00002-5)
- Larsen-Freeman, D. (2000). *Techniques and principles in language teaching*. Oxford University Press.
- LaScotte, D. (2020). Leveraging listening texts in vocabulary acquisition for low-literate learners. *TESL Canada Journal*, 37(1), 76-89. <https://doi.org/10.18806/tesl.v37i1.1330>
- Lingzhu, J. (2003). Listening activities for effective top-down processing. *The Internet TESL Journal*, 9(1). <http://iteslj.org/Techniques/Lingzhu-Listening.html>
- Lynch, T. (2009). *Teaching second language listening*. Oxford University Press.
- Madani, B. S., & Kheirzadeh, S. (2022). The impact of pre-listening activities on EFL learners' listening comprehension. *International Journal of Listening*, 36(1), 53-67.
- Mahdavy, B. (2008). The role of multiple intelligences (MI) in listening proficiency: A comparison of TOEFL and IELTS listening tests from an MI perspective. *Asian EFL Journal*, 10(3), 109-126.
- Mahdavy, B. (2011). The role of topic familiarity and rhetorical organization of texts in L2 incidental vocabulary acquisition. *Procedia - Social and Behavioral Sciences*, 29, 208-217. <http://dx.doi.org/10.1016/j.sbspro.2011.11.226>
- McLaughlin, B. (1987). *Theories of second-language learning*. Edward Arnold.
- Nagy, W., & Herman, P. A. (1987). Breadth and depth of vocabulary knowledge: Implications for acquisition and instruction. In M. McKeown & M. Curtis (Eds.), *The nature of vocabulary acquisition* (pp. 19-59). Erlbaum.
- Nation, I. S. P. (1990). *Teaching and learning vocabulary*. Heinle & Heinle.
- Nation, P., & Newton, J. (1997). Teaching vocabulary. In J. Coady & T. Huckin (Eds.), *Second Language Vocabulary Acquisition: A Rationale for Pedagogy* (pp. 238-254). Cambridge University Press.
- Oprandy, R. (1994). Listening/speaking in second and foreign language teaching. *System*, 22(2), 153-175. [https://doi.org/10.1016/0346-251X\(94\)90054-X](https://doi.org/10.1016/0346-251X(94)90054-X)
- Oxford, R. (1993). Research update on L2 listening. *System*, 21(2), 205-211.
[https://doi.org/10.1016/0346-251X\(93\)90042-F](https://doi.org/10.1016/0346-251X(93)90042-F)

- Pavia, N., Webb, S., & Faez, F. (2019). Incidental vocabulary learning through listening to songs. *Studies in Second Language Acquisition*, 41(4), 745-768. <https://doi.org/10.1017/S0272263119000020>
- Perez, M. M., Peters, E., & Desmet, P. (2018). Vocabulary learning through viewing video: The effect of two enhancement techniques. *Computer Assisted Language Learning*, 31(1-2), 1-26. <https://doi.org/10.1080/09588221.2017.1375960>
- Pitts, M., White, H., & Krashen, S. (1989). Acquiring second language vocabulary through reading: A replication of the Clockwork Orange study using second language acquirers. *Reading in a Foreign Language*, 5(2), 271-275.
- Richards, J. C. (1990). *The Language Teaching Matrix*. Cambridge University Press.
- Richards, J. C. (2010). *Tactics for listening*. Oxford University Press.
- Richards, J., & Rodgers, T. (2001). *Approaches and methods in language teaching*. Cambridge University Press.
- Satori, M. (2022). Effects of field independence, metacognitive knowledge, and vocabulary knowledge on second language listening comprehension. *International Journal of Listening*. <https://doi.org/10.1080/10904018.2022.2056037>
- Schmidt, R. (1994). Deconstructing consciousness in search of useful definitions for applied linguistics. *AILA Review*, 11, 11-26.
- Smidt, E., & Hegelheimer, V. (2004). Effects of online academic lectures on ESL listening comprehension, incidental vocabulary acquisition, and strategy use. *Computer Assisted Language Learning*, 17(5), 517-556. <https://www.learntechlib.org/p/98426/>
- Sok, S., & Shin, H. W. (2022). Investigating the role of cognitive variables in second language learners' listening comprehension: Aptitude and metacognitive awareness. *International Journal of Listening*, 36(2), 138-151. <https://doi.org/10.1080/10904018.2021.1954926>
- Swain, M. (1985). Communicative competence: Some roles of comprehensible input and comprehensible output in its development. In S. Gass & C. Madden (Eds.), *Input in Second Language Acquisition* (pp. 235-256). Newbury House.
- Swain, M., & Lapkin, S. (1995). Problems in output and the cognitive processes they generate: A step towards second language learning. *Applied Linguistics*, 16, 371-391.
- Teng, F. (2019). The effects of context and word exposure frequency on incidental vocabulary acquisition and retention through reading. *The Language Learning Journal*, 47(2), 145-158. <https://doi.org/10.1080/09571736.2016.1244217>
- Teng, F. (2022). Incidental L2 vocabulary learning from viewing captioned videos: Effects of learner-related factors. *System*, 105, 102736. <https://doi.org/10.1016/j.system.2022.102736>
- Tsui, A., & Fullilove, J. (1998). Bottom-up or top-down processing as a discriminator of L2 listening performance. *Applied Linguistics*, 19(4), 432-451. <https://doi.org/10.1093/applin/19.4.432>
- Vandergrift, L. (1997). The comprehension strategies of second language (French) listeners: A descriptive study. *Foreign Language Annals*, 30, 387-409. <https://doi.org/10.1111/j.1944-9720.1997.tb02362.x>
- Vandergrift, L. (1999). Facilitating second language listening comprehension: Acquiring successful strategies. *ELT Journal*, 53(3), 168-76. <https://doi.org/10.1093/elt/53.3.168>
- Vandergrift, L. (2005). Relationships among motivation orientations, metacognitive awareness and proficiency in L2 listening. *Applied Linguistics*, 26(1), 70-89. <https://doi.org/10.1093/applin/amh039>

- Vandergrift, L., & Tafaghodtari, M. (2010). Teaching L2 learners how to listen does make a difference: An empirical study. *Language Learning*, 60(2), 470-97. <https://doi.org/10.1111/j.1467-9922.2009.00559.x>
- Van Duzer, C. (1997). *Improving ESL learners' listening skills: At the workplace and beyond*. Project in Adult Immigrant Education and National Clearinghouse for ESL Literacy Education.
- van Zeeland, H., & Schmitt, N. (2013). Incidental vocabulary acquisition through L2 listening: A dimensions approach. *System*, 41(3), 609–624. <https://doi.org/10.1016/j.system.2013.07.012>
- Vidal, K. (2011). A comparison of the effects of reading and listening on incidental vocabulary acquisition. *Language Learning*, 61(1), 219-258. <https://doi.org/10.1111/j.1467-9922.2010.00593.x>
- Wagner, E. (2013). An investigation of how the channel of input and access to test questions affect L2 listening test performance. *Language Assessment Quarterly*, 10(2), 178-195. <https://doi.org/10.1080/15434303.2013.769552>
- Wesche, M., & Paribakht, T. S. (1996). Assessing second language vocabulary knowledge: Depth versus breadth. *Canadian Modern Language Review*, 53(1), 13-40. <https://doi.org/10.3138/cmlr.53.1.13>.
- Zhang, P., & Graham, S. (2020). Learning vocabulary through listening: The role of vocabulary knowledge and listening proficiency. *Language Learning*, 70(4), 1017-1053. <https://doi.org/10.1111/lang.12411>
- Zhang, R., & Zou, D. (2021). A state-of-the-art review of the modes and effectiveness of multimedia input for second and foreign language learning. *Computer Assisted Language Learning*. <https://doi.org/10.1080/09588221.2021.1896555>