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Facilitating Lexical Acquisition in Beginner Learners of Italian Through Task-Induced Involvement Load

Vanessa J. Natale Rukholm
University of Tampa, vrukholm@ut.edu

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The more recent history of research in Second Language Acquisition has seen the production of an increasing number of important works in the area of L2 vocabulary acquisition and numerous studies have shown that both L1 and L2 learners acquire the vast majority of their lexical competence without explicit instruction but rather when they are learning vocabulary from context, and specifically when they are reading for meaning (Ma 2007; Milton 2009; Grabe & Stoller 1997; Huckin, Haynes, & Coady 1993; Paribakht & Wesche 1993; Hulstijn 1992). In fact, a crucial contributor to lexical development is the elaborate processing of input; that is, when learners ‘do more’ in a cognitive sense with the target words they are learning (Laufer & Hulstijn 2001). In this study, L2 lexical acquisition is investigated through an incidental learning experiment in which it is hypothesized that more “elaborate processing”(Craik & Tulving 1975), which Hulstijn & Laufer (2001) have operationalized as High Involvement Load, contributes to better lexical retention than less elaborate processing or Low Involvement Load.

In 1972, Craik and Lockhart published a seminal paper on their depth of processing theory, which suggested that the more attention that is paid to the meaning of words during initial exposure & the richer the associations that are made with previously acquired knowledge, the greater the chances new lexical items will be acquired and retained (Hulstijn 1). This is what they called deep or elaborate processing. Craik and Lockhart suggested that “perception involves the rapid analysis of stimuli at a number of levels or stages” (675). They described these levels or stages in the following terms:

Preliminary stages are concerned with the analysis of such physical or sensory features as lines, angles, brightness, pitch, and loudness, while later stages are more concerned

with matching the input against stored abstractions from past learning; that is, later stages are concerned with the pattern recognition and the extraction of meaning. This conception of a series or hierarchy of processing stages is often referred to as “depth of processing” where greater “depth” implies a greater degree of semantic or cognitive analysis. (Craik and Lockhart 675)

In other words, they posited that memory trace is a function of the degree of depth with which information is processed, meaning that the deeper information is analysed, the more elaborate, longer lasting, and stronger the memory traces will be. Simply put, we remember things better when we do more with them cognitively. In their study, greater “depth” implied a greater degree of semantic or cognitive analysis while less cognitive depth, which they called *Shallow Processing*, entailed knowledge of structure or syntax (for instance, being able to recognize whether a word is presented in capital letters). There were, however, some significant flaws in Craik and Lockhart’s theory, namely that it was impossible to determine ‘depth’ or ‘shallowness’ of processing: how could the researchers know whether a participant was processing language deeply or not without having direct access to his or her brain activity? In spite of the inability to resolve the issue, what researchers of knowledge representation do agree on is that when learners process information more elaborately, that is, by paying attention to specific features of a word (e.g. pronunciation, orthography, grammatical category, semantics, etc.) this will lead the learner to better retention than if the learner were to process that same information less

elaborately (i.e. by paying attention to less of these features) (cf. Bellezza 1996; Craik & Watkins 1973; Laufer & Shmueli 1997).

Following on the heels of Craik & Lockhart, Laufer & Hulstijn's Involvement Load Hypothesis (2001) draws on the Depth of Processing theory in an attempt to operationalize it within the context of the language classroom. Their hypothesis suggests that the higher the task-induced involvement load, the greater the extent to which lexical acquisition is optimized.

Laufer and Hulstijn's construct is an attempt to bring together both the cognitive (input-processing) and affective (motivational) components of the language acquisition process so that specific incidental tasks can be analysed for their level of involvement and therefore their respective effect(s) on incidental learning.¹ By *involvement*, the authors imply the combination of three factors in a task: need, search, and evaluation, factors that, they posit, "can explain and predict learners' success in the retention of hitherto unfamiliar words" (14). The affective or non-cognitive component of their construct is *need* and it constitutes a motivational dimension of involvement. *Need* refers to learners' *need to achieve*, which is based on an individual learner's motivation to comply with what is required by the task. The concept of motivation has figured prominently in the SLA literature as one of the most important factors in the prediction of success in the language acquisition process (cf. Dörnyei and Schmidt 2001) and thus figures prominently in Laufer and Hulstijn's framework. According to their construct, a learner's *need* is moderate when "it is imposed by an external agent, e.g. the need to use a word in a sentence which the teacher has asked the learner to produce" (14) while *need* is strong when it is imposed on the learner by himself or herself (e.g. attempting to express

a concept without knowing the appropriate word for it). In other words, *need* is at its highest when a learner's motivation to complete a particular task is self-directed rather than when it is imposed by someone else.

The two cognitive variables in the Involvement Load Hypothesis are *search* and *evaluation* and both of these dimensions are "contingent upon noticing and deliberately allocating attention to the form-meaning relationship" (Schmidt 2000). *Search* refers to the learner's attempt to uncover the meaning of an unfamiliar L2 word (e.g. trying to translate an L1 word into the L2) by consulting a dictionary or other authority (e.g. teacher). *Evaluation* implies that a comparison of a given word is made with other words, or a meaning of a word is compared with the word's other meanings, or still yet that a combination of a given word with other words is assessed as to whether it fits in context. For example, if a learner looks up a word in a dictionary and finds it is a homonym, he or she must compare the various meanings of the word and choose the one that fits best in the given context. According to the Involvement Load framework, *evaluation* is 'moderate' if it entails recognising differences between words (e.g. fill in the blanks with an appropriate word from a list) and it is 'strong' if it requires making a decision about combining a new word with other words in an original sentence.

Laufer and Hulstijn's framework is not meant merely as a theoretical construct, but rather, it is intended to be directly applied to L2 classroom tasks. As such, an obvious question related to the Involvement Load Hypothesis is: how can a task be rated in terms of its involvement load? In other words, how can language educators determine whether a given task promotes strong or moderate involvement in the learner? According to the authors, any learning task can induce either one, two, or

even all three components of involvement for every single target word. Involvement is therefore defined as “the combination of the presence or absence of the involvement factors Need, Search, and Evaluation” (15). Laufer and Hulstijn point out that it is possible to design tasks so that the involvement load is nearly identical for all words involved and they coin this *task-induced involvement load*. This allows language educators to analyse a variety of tasks and rate them according to the presence or absence of the need, search, and evaluation criteria. The *involvement index* they developed indicates the absence of a factor marked by 0, a moderate presence of a factor marked as 1, and a strong presence of a factor marked as 2.

Table 1 illustrates how a specific task can be rated for Involvement Load in terms of the presence (strong or moderate) or absence of Need, Search, and Evaluation:

Table 1. Task-Induced Involvement Load

Task	Status of target words	Need	Search	Evaluation
1. Reading & comprehension questions	Glossed in text, irrelevant to task	0	0	0
2. Reading & comprehension questions	Glossed in text, relevant to task	1	0	0
3. Reading & comprehension questions	Not glossed, relevant to task	1	1	0/1 (depending on word & context)
4. Reading & comprehension questions; filling gaps	Relevant to reading comprehension, listed with glosses at end of text	1	0	1

5. Writing original sentences	Listed with glosses	1	0	2
6. Writing a composition	Concepts selected by teacher (& provided in L1); learner must look up L2 form	1	1	2
7. Writing a composition	Concepts selected (& looked up) by L2 learner	2	1	2

For example, Task 5 from the table (Writing original sentences; words listed as glosses) would be rated as 3 (1+ 0+2) while Task 2 (Reading and comprehension questions; words are glossed in text and relevant to task) would be rated as 1 (1+0+0). According to the Involvement Load Hypothesis, then, which states that greater involvement leads to better retention, we can hypothesize that learners who complete Task 5 would likely retain vocabulary better than those learners completing Task 2 since Task 5 carries a greater involvement load (3) than Task 2 (1).

The purpose of the present study is to examine the effects of involvement load on incidental lexical acquisition. In incidental learning experiments, including the present one, participants are not told in advance that they will be tested following the information processing tasks they carry out, allowing researchers to examine the effect of that particular type of information processing.

The participants who took part in this study consisted of 66 second-semester L2 Italian learners, each of which was enrolled in one section of an introductory Italian course at a university in the Greater Toronto Area (GTA). Participants were divided into one of 4 treatment groups and a Control Group. Treatment groups were divided based on the presence or absence of music in addition to the level of involvement as follows: 1)

Music/High Involvement (+ Music, + Involvement); 2) Music/Low Involvement (+ Music, - Involvement); 3) Poem/High Involvement (-Music; + Involvement); 4) Poem/Low Involvement (-Music; -Involvement); 5) Control (no treatment).

Prior to the treatment sessions, participants completed a brief questionnaire soliciting biographical and language-related information. As Figure 1 illustrates, the groups were roughly equivalent to one another in that there was a predominance of females aged 17-21 in their 1st year of postsecondary education.

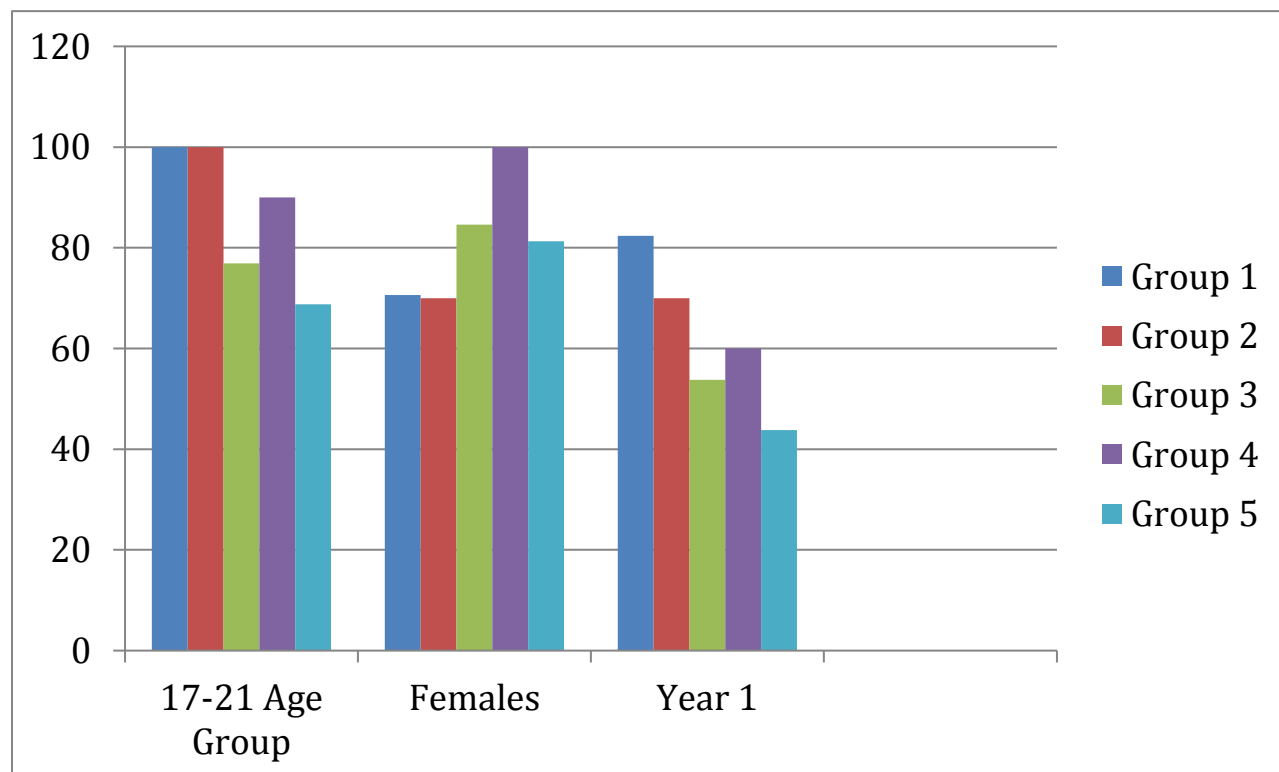


Figure 1. Participants' Age, Sex, and Year of Study by Group

Figure 2 illustrates the multicultural and multilingual diversity of the participant pool in terms of L1. There was a plurality of English L1 speakers (45.5%) across the groups followed by 24.2% of participants for whom a non Indo-European language is an L1.

21.2% were native speakers of an Indo-European language that is neither English nor Romance, and 9.1% identified a Romance language as their L1.

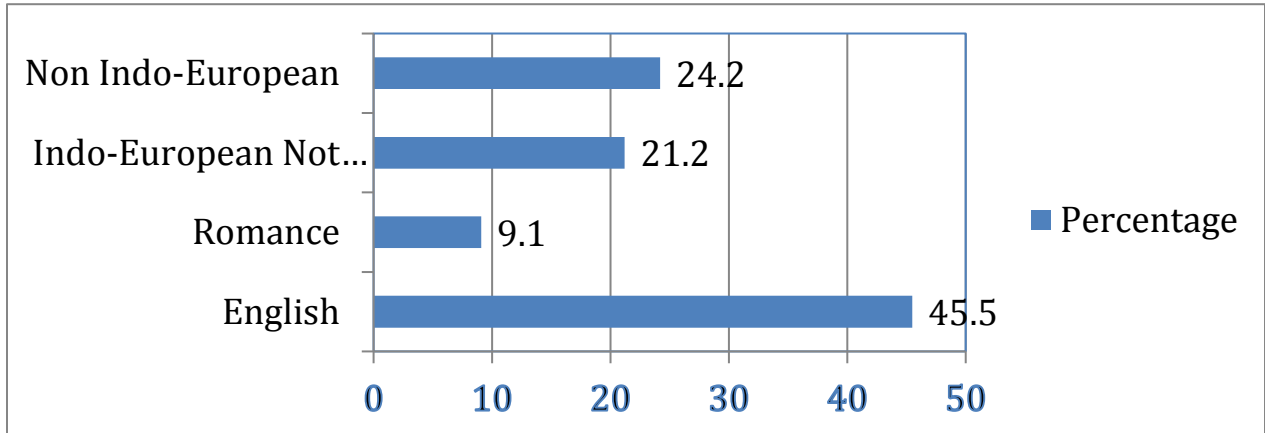


Figure 2. Participants' L1

Of additional importance to this study is the level of participants' competence in an L2. As Figure 3 indicates, 46.3% of participants spoke English as an L2, 43.3% spoke a Romance language, 7.5% spoke a language other than English or Romance, and 3% did not speak an L2.

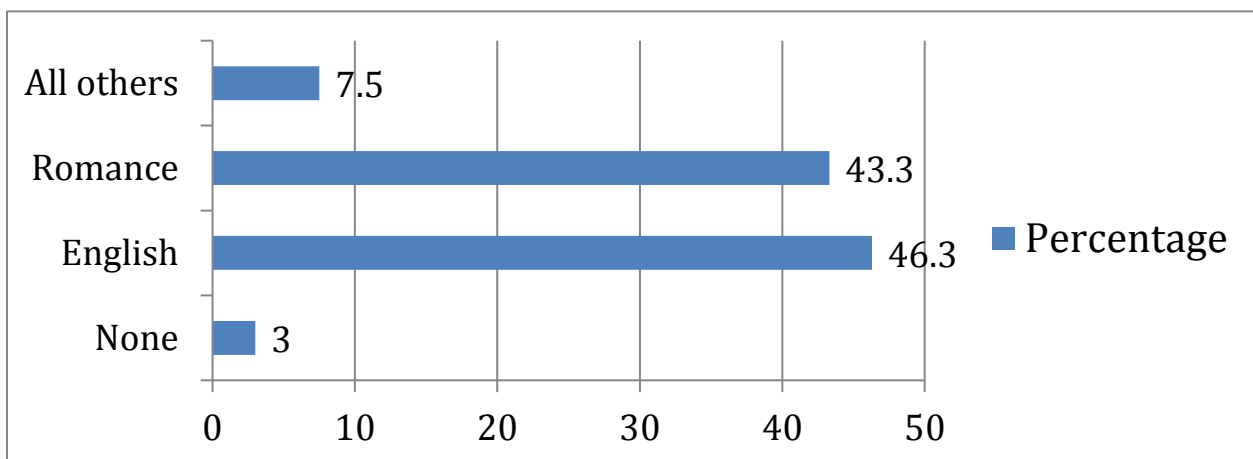


Figure 3. Participants' L2

Following the collection of biographical and linguistic data, a pre-test was administered to all 5 groups in order to determine the level of knowledge each participant had of each lexical item at the outset of the study. Participants were asked to circle the response that best reflected their current familiarity with each item as follows in Table 2.

As Table 2 indicates, step one on the scale indicates the participant has no knowledge of the given lexical item while step 2 indicates receptive knowledge (recognition) of the form or lexeme. Steps 3 and 4 indicate there is receptive knowledge

Table 2. Pretest lexical knowledge scale

1. I have not heard this word before.
2. I have seen this word before, but don't know what it means.
- 3/4. I have seen this word before and I think/know what it means.
5. I know what this word means and can use it in a sentence.

of the word's meaning and the participant is able to provide a synonym or translation. Finally, step 5 shows productive knowledge of the lexical item; that is, that the participant is able to demonstrate syntactic, morphological, and semantic knowledge of the lexical item in question by producing an original sentence correctly using the lexical item. The pre-test consisted of 20 target items & 5 distractor items. Participants' answers were scored on a scale from 1 to 5, a score of 1 indicating that the word was not familiar whatsoever and 5 being that the participant was able to use the word in an original sentence. Incorrect answers (such as incorrect synonym or translation) resulted in a score of 2. Errors in grammatical category resulted in a score of 3. If no answer was provided for a particular target item, no score was given. In the case of polysemes, a score of 3 was given if one correct translation or synonym was provided but not the target meaning

as found in the lyrics. A score of 3 was also given if correct semantic knowledge was demonstrated but if the target item was used inappropriately in the sentence provided (e.g. *Il principio di scuola e' per insegnare. [The principle of school is to teach]). A score of 4 was given if the word was use appropriately semantically but with grammatical inaccuracy (e.g. *Mi piace coccolato il mio cane. [I like to cuddled my dog.]). Scores for each target item were added to obtain a total score which was then divided by the total possible score the participant could have obtained on the attempted items.

One week following the pre-test, all treatment groups were given a printed copy of the lyrics to the song *Gli ostacoli del cuore*. Music groups listened to a CD recording of the song while Lyrics groups listened to a recorded reading of the lyrics only. All participants were instructed to listen carefully and to try to understand what they were hearing and reading. Following this, an activity sheet designed for each group's particular level of processing was distributed. The Song or Lyrics were then played a 2nd time. Low Involvement activities were created in such a way that participants were not required to utilize the target lexical items whatsoever. On the other hand, High Involvement activities were created so that target lexical items would be heavily utilized. For example, participants were asked to guess the meaning of target items, then asked to discuss their ideas with other participants, and finally to look up the words in the dictionary and use them in a paragraph.

One week later, participants once again listened to either the Song or the Lyrics then worked on additional activities tailored to their respective group's designated level of processing. Once the activities were completed, participants listened one final time to either the Song or the Lyrics. Two weeks following Session 3, (four weeks following pre-

test) all groups, including the Control Group, completed a vocabulary post-test. This post-test was identical to the pre-test in all but the order of the lexical items. Four weeks following Session 4, and therefore, 8 weeks following the pre-test, participants completed a delayed vocabulary post-test, once again identical to the pre-test and post-test in all but the order of the items.

The specific hypotheses under investigation in this study are as follows: 1) All treatment groups will outperform the control group on the post-test and delayed post-test; 2) The high involvement groups will outperform the low involvement groups on the post-test and delayed post-test.

In terms of the data analysis, the accuracy scores were converted to proportions per correct participant per condition, then proportions were logit-transformed to meet the conditions for ANOVA. The analysis is by subjects only. Time 1 (pre-test) results were used as a baseline condition against which scores at Time 2 and Time 3 were compared so repeated measures had two levels: differences between proportions at Time 2 (post-test) & Time 1 then at Time 3 (delayed post-test) & Time 1.

An ANOVA with Control Group as the between-subjects variable and three testing times as the within-subjects variable yielded $F(2,30)=2.824$, $p=0.075$, which is not significant and as such, the implication is no learning took place. A two-way mixed ANOVA with Group as a between-subjects factor with 5 levels (i.e. the four treatment groups with combinations of Music and Involvement plus the Control) yielded a significant main effect of Time with $F(1,61)=4.107$, $p=0.047$. Performance at T3 (delayed post-test) was slightly higher above baseline (0.506) than at T2 (0.565) and there was a significant main effect of Group with $F(4,61)=12.618$, $p<0.00001$. There was no significant

interaction between Group and Time: $F(4, 61) p < .01$. Given these results, it can be suggested then, that Hypothesis 1 is verified; that is, that treatment groups did in fact outperform the Control Group on both post-tests. The implication here is that no learning took place, which is what we would assume would take place given that the Control Group had had no exposure to the target items or treatments whatsoever. Additionally, Hypothesis 2 is also verified in that High Involvement groups outperformed Low Involvement groups on both the post-test and the delayed post-test.

With respect to Involvement Load, this study's findings support the claims that the greater the extent to which learners interact with lexical items, the more apt they are to acquire them. Elaborate processing activities in this study maximized levels of the factors Need, Search, and Evaluation outlined by the Involvement Load Hypothesis as conducive to elaborate processing and results here suggest participants likely did in fact process target items elaborately and that this resulted in better acquisition. The results suggest that High Involvement tasks, that is those that require L2 learners to maintain high levels of the factors Need, Search, and Evaluation in carrying out activities, facilitate the creation of greater associations between old and new information (for example, comparing a new meaning of a lexical item to an old meaning). In other words, the higher the involvement load the more elaborate the information processing required, which in turn implies the utilization of greater cognitive processes, all of which suggests memory for the information is strengthened.

In addition, an ANOVA was carried out using Time as a within-subjects variable and results indicated that there was no main effect of Time between the post-test and the delayed post-test: $F(1,46)=2.49, p=.121$. This result implies that there was no significant

attrition across high-involvement groups in terms of lexical retention between the two post-tests. This result supports the suggestion that high involvement load aids in not only lexical acquisition in the short-term, but also in the retention of this lexical knowledge over time.

Involvement load may also improve the extent to which learners notice target lexical items. The concept of noticing can be defined as a level of awareness that determines whether the contents of a learner's attention are consciously registered. According to some SLA scholars, the concepts of noticing and attention are necessary in order for input to be converted into intake (cf. Schmidt, 1990, 1994; Van Patten, 1984). In order for information to be stored in memory on a long-term basis learners must pay attention to and notice the information they receive. While attention and noticing are cognitive constructs, the literature on these concepts also suggests that learners are able to selectively determine, usually based on the demands of the tasks they are carrying out, which features of language to attend to and notice. As such, it is possible for language educators to create or modify activities such that learners' attention is directed toward certain features of the language rather than others, features that may otherwise go unnoticed by the learner. Requiring learners to carry out tasks that focus on and use certain lexical items in a text undoubtedly renders those lexical items more salient to the learner than others and therefore increases the chances that those lexical items will be attended to and noticed by the learner. The result of this increased attention is, as the results of this experiment seem to indicate, that learners retain those lexical items.

While the results of this study are encouraging, it is important to make reference to some of the limitations of this study that should be taken into consideration. This study

has ecological validity in that participants were drawn from congruent first-year sections of the same course and studied the target words as part of a supplement to their course materials, but it lacks some of the controls that are typical of lab-based study (e.g., target items controlled for length and frequency, etc.). There was also a relatively small sample size utilized in the study and as such, more participants could have yielded more definitive results. While power levels were relatively healthy, more participants would have been desirable, particularly to gain further insight into the role of the L1 and L2 on retention. In light of the small numbers, this study needs to be viewed as a preliminary one; more definitive findings could be yielded by large-scale studies.

It is also plausible that some participants could have been exposed to the song that was utilized in the study outside of the testing times. While this is unlikely, given that neither the title of the song nor the singer's name were ever revealed, it is certainly not impossible for participants to have accessed the song online, thereby exposing them to the target items outside of the study's timeframe.

Additionally, while there were two post-tests utilized in this study, the timeframe of this study is still relatively short with only 8 weeks between the initial pre-test and the final post-test. It would be insightful to conduct a replication of this study over the longer term to determine whether the facilitative effect of task-induced involvement load is maintained or whether there is regression toward the mean over time.

Finally, it was not possible to control for linguistic background in this study and doing so could provide clearer picture of the role of cognate status on acquisition and retention. For example, it is possible that L2 speakers of a romance language were able to make educated guesses about the meaning of some of the target words in the study,

thus skewing the results. Unfortunately, given the small number of participants in each group, evaluating the impact of language background on specific target words was not possible from a statistical analysis point of view.

In closing, this study presents a unique perspective in the study of lexical acquisition in that it examines the role of a poorly understood factor in the acquisition and retention of lexical items: involvement load. This study provides empirical evidence that the elaborate processing of input resulting from high involvement tasks provides a facilitative effect on the incidental learning of Italian lexical items in the short term and illustrates the extent to which lexical development can take place in a relatively short period of time; it also underlines the key role pedagogy plays in the lexical acquisition and retention process, specifically the creation of lexical activities designed with task-based involvement load in mind; and finally, it highlights the need for better vocabulary-focused didactic resources that are thematically-driven, contextualized, and which require high involvement so that learners are directly engaged with the target vocabulary and so that retention can be better supported.

Note

¹ The term *incidental learning* has been utilized in the literature to refer to learning that takes place when learners do not have the intention to learn, when they are learning one thing while paying attention to another, and when they are learning formal features through focused attention on understanding meaning (cf. Schmidt). In experiments of incidental learning, participants are typically not told in advance that they will be tested following the information processing tasks they carry out, allowing researchers to examine the effect of that particular type of information processing.

Works Cited

- Bellezza, Francis S. "Mnemonic Methods to Enhance Storage and Retrieval". Ed. E. L. Bjork and R. A. Bjork. *Handbook of Perception and Cognition: Memory*. 2nd ed. New York: Academic Press, 1996. 345-380. Print.
- Brown, Cheryl, Sherri Sagers, and Carrie Laporte. "Incidental Vocabulary Acquisition from Oral and Written Dialogue Journals". *Studies in Second Language Acquisition* 21(1999): 259-283. Print.
- Coady, James, and Thomas Huckin. *Second Language Vocabulary Acquisition: a Rationale for Pedagogy*. Cambridge UP, 1997. Print.
- Craik, Fergus, and Robert Lockhart. "Levels of Processing: a Framework for Memory Research." *Journal of Verbal Learning and Behavior* 11.16 (1972): 671-684.
- Craik, Fergus, and Michael Watkins. "The Role of Rehearsal in Short-Term Memory." *The Journal of Verbal Learning and Verbal Behavior* 12 (1973): 599-607. Print.
- Craik, Fergus, and Endel Tulving. "Depth of Processing and the Retention of Words in Episodic Memory." *Journal of Experimental Psychology: General* 104.3 (1975): 268-294. <http://dx.doi.org/10.1037/0096-3445.104.3.268>
- Dörnyei, Zoltan. "Individual differences in second language acquisition." *AILA Review* 19.1 (2006): 42-68. doi: 10.1111/j.1540-4781.2007.00514_5.x
- Dörnyei, Zoltan, and Richard Schmidt (Eds.). *Motivation and Second Language Acquisition*. Honolulu: University of Hawai'i Foreign Language Research Center, 2001.
- Grabe, William, and Frederika Stoller, "Content-Based Instruction: Research Foundations." Ed. M. A. Snow and D. M. Brinton. *The Content-Based*

Classroom: Perspectives on Integrating Language and Content. NY: Longman, 1997. 5-21. Print.

Huckin, Thomas, Michael Haynes, & James Coady. (Eds.). (1993). *Second Language Reading and Vocabulary Learning*. Norwood, N.J.: Ablex Publishing Corporation, 1993. Print.

Hulstijn, Jan. "Retention of Inferred and Given Word Meanings: Experiments in Incidental Vocabulary Learning." Ed. Pierre Arnaud and Henri Bejoint. *Vocabulary and Applied Linguistics*. London: Macmillan, 1992. 113-125.

Print. Laufer, Batia, and Karen Shmueli. "Memorizing New Words: Does Teaching Have Anything to Do With It?" *RELC* 28.1(1997): 89-108. DOI: 10.1177/003368829702800106

Laufer, Batia, "Ease and Difficulty in Vocabulary Learning: Some Teaching Implications". *Foreign Language Annals* 23.2 (1990): 147-55. DOI: 10.1111/j.1944-9720.1990.tb00355.x

Laufer, Batia, and Jan Hulstijn. "Incidental Vocabulary Acquisition in a Second Language: the Construct of Task-Induced Involvement". *Applied Linguistics* 22.1 (2001): 1-26. Print.

Ma, Qing. *Second Language Vocabulary Acquisition*. Switzerland: Lang. 2007. Print.

Milton, James. *Measuring Second Language Vocabulary Acquisition*. Clevedon, UK: Multilingual Matters, 2009. Print.

Paribakht, Tahereh Sima, and Marjorie Wesche. "Reading Comprehension and Second Language Development in a Comprehension-Based ESL Program." *TESL Canada* 11.1 (1993): 9-29. DOI: <http://dx.doi.org/10.18806/tesl.v11i1.623>

---. "Vocabulary Enhancement Activities and Reading for Meaning in Second Language

Vocabulary Acquisition." Ed. James Coady & Thomas Huckin. *Second*

Language Vocabulary Acquisition. Cambridge: Cambridge UP, 1997: 174-100.

Print.

Wesche, Marjorie, and Tahereh Sima Paribakht. "Assessing Vocabulary Knowledge:

Depth vs. Breadth. *Canadian Modern Language Review* 53.1 (1996): 13-40.

Print.

Schmidt, Richard. "Deconstructing consciousness in search of useful definitions for

applied linguistics." *AILA Review* 11(1994): 11-16. Print.