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Cognitive Load Framework: An Alternative to The Involvement Load Hypothesis

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Abstract

Achieving an acceptable degree of proficiency in any language is no doubt threatened by the daunting task of mastering a bulk of new vocabulary items. Although incidental reading is often considered an invaluable source of vocabulary learning, it seems to be such a slow and error-prone process that it needs to be supplemented with explicit instruction. In order to design and assess practical activities for vocabulary learning and retention, researchers have presented several techniques and models, from which the Involvement Load Hypothesis appears to be the most popular and of widespread use by ELT practitioners. The current paper presents a detailed criticism of the Hypothesis, arguing that it is unclear in identifying the model components, making the determination and measurement of the involvement load of learning tasks rather tricky. Therefore, the current paper suggests an alternative model, namely the Cognitive Load Framework, which is claimed to be more clearly operationalized, more conveniently practicable, and more easily measurable.

Keywords: cognitive load, depth of processing, ESL learning, involvement load, vocabulary.

Introduction

Language learners are pretty well aware that the greatest obstacle standing in their way to acquiring an acceptable degree of proficiency in a second language is no doubt mastering a bulk of words. Fulfilling such a tremendous task is daunting for learners in ESL, especially in EFL situations where contact with the target language is noticeably limited. In these learning situations, therefore, both language teachers and learners tend to optimize the amount of time and energy they allocate to the task of vocabulary teaching and learning.

Although Krashen and others consider independent reading as the overriding source of second language vocabulary learning (Pellicer-Sánchez & Schmitt, 2010; X. Xu, 2010), other researchers have argued that incidental vocabulary pick-up is often a

slow process with relatively small gains even after frequent encounters (Peters, Hulstijn, Sercu, & Lutjeharms, 2009; Schmitt, 2008).

They contend that leaving second language learners to learn vocabulary incidentally in context can take them not beyond the stage of meaning recognition knowledge. Therefore, reading is necessary to be supplemented with form-focused instruction (De La Fuente, 2002; Laufer, 2006; Paribakht & Wesche, 1997) if the instructional program is to help learners achieve more profound levels of vocabulary knowledge.

The recent introduction of the various models, techniques, and learning activities to foster vocabulary acquisition and the emergence of numerous research projects on vocabulary learning and retention in the past few years has been to some extent motivated by the determining role that vocabulary plays in language acquisition. Among the different models currently available to ELT practitioners, the Involvement Load Hypothesis, mainly informed by notions of Depth of Processing (Craik & Lockhart, 1972) and Elaboration (Craik & Tulving, 1975), has received a noticeable amount of attention.

Craik and Lockhart's (1972) notion of Depth of Processing holds that the chance for new information to be stored in long-term memory is determined by the shallowness or depth with which it is initially processed rather than by the length of time that it is held in short term memory. It further assumes that there are several levels to a depth of processing. For instance, processing the meaning of a new lexical item takes place at a deeper level than its phonological or morphological form. Later on, Craik and Tulving (1975) suggested that what is critical to retention is not simply the presence or absence of semantic coding but the elaboration on the task or richness with which the material is encoded.

There is an immense bulk of empirical evidence backing up the impact of depth of processing on new word retention and reading comprehension. To begin with, words looked up in a dictionary during a reading comprehension task were remembered better than those not looked up (Knight, 1994) or those glossed in the margin of the text (Watanabe, 1997). To follow, negotiated vocabulary items were reported to be retained better than non-negotiated items (Newton, 1995). Similarly, productive tasks were shown to be more effective for vocabulary learning and retention than non-productive tasks (Ellis & He, 1999; Jan Hulstijn & Trompetter, 1998). Likewise, Bowles (2004) reported a higher achievement rate in L2 vocabulary acquisition in favour of computer and paper-and-pen glossing over non-glossing traditional ways of presenting vocabulary items. Finally, Rott (2007) compared the effect of single and multiple-choice glosses on vocabulary learning and text comprehension with learners of German as a second language. Multiple-choice glosses requiring a deeper

level of processing were found to be more effective than single glosses on vocabulary post-tests administered after four weeks. Despite all these empirical findings attesting to the legitimacy of the depth of processing theory, it is maintained that no clear and measurable operationalization of the notions of the depth of processing and elaboration has yet been offered.

The Involvement Load Hypothesis

Having acknowledged the relevance of the notions of the depth of processing and elaboration in language learning in general and in L2 vocabulary acquisition, Laufer and Hulstijn (2001) operationalized the concepts in the form of the Involvement Load Hypothesis. Based on the Hypothesis, learning tasks that bring about higher degrees of involvement are more conducive to the type of processing required for vocabulary acquisition.

Laufer and Hulstijn's Involvement Load Hypothesis (2001) involves a three-dimension motivational-cognitive construct. They referred to the motivational dimension of the construct as Need with two degrees of prominence. Need is defined in terms of whether or not the word meaning is relevant to the learning task to be carried out. It is, however, Moderate (+) when an external agent imposes it, let us say, by the teacher or the task. It is Strong (++) when it is intrinsically motivated, which is self-imposed by the learner. The cognitive components of the construct are Search and Evaluation. *Search* is defined as the attempt to find the meaning of an unknown L2 word or consulting an authority like a teacher or a dictionary to find an L2 word for expressing a given concept in the native language. This component is either present [Moderate (+)] if the target word is not provided or absent (-) if the word is supplied in a list, for instance. *Evaluation* is defined as whether the use of the target word in a task entails an evaluation (Hulstijn & Laufer, 2001). Evaluation is present and Moderate (+) when the task entails a comparison of a given word with other words or specific meaning of a word with its other meanings. It is Strong (++) when it involves comparing the word with other words to assess whether a word does or does not fit its context. Evaluation is, however, absent (-) if the task does not involve any selective decision on the semantic appropriateness of a given word and the context in which it appears.

The Involvement Load Hypothesis has been around for almost two decades, motivating many experimental studies dealing with the learning and retention of vocabulary in the SLA field. It is interesting, however, to point out that the studies addressing the predictions made by the Hypothesis directly (Hulstijn & Laufer, 2001; Keating, 2008; Kim, 2008; Mármol & Sánchez-Lafuente, 2013) or indirectly (Folse,

2006; Rott, 2007) have yielded inconsistent results. For instance, while Hulstijn and Laufer's(2001) experiment with Israeli ESL learners fully supported the Hypothesis, their parallel study with ESL learners in the Netherlands only partially backed it up. Beal (2007), investigating the effects of different reading activities with different involvement load values on reading comprehension and vocabulary acquisition, found that the sentence production tasks with higher involvement load resulted in better performance than the multiple-choice glosses and textual glosses activities. Unlike Kim (2008), who provided full support for the involvement load hypothesis in two experiments with learners of English as an ESL in the USA, Keating (2008) study of learners of Spanish as an L2 in the USA and Alcaraz-Marmol & Almela (2013) study of the Spanish middle-class students of English as a Foreign Language provided only partial support for the Hypothesis. Finally, Marmol & Sanchez-Lafuente (2013) found that tasks with an involvement load index of (2) produced better results in the receptive test than tasks with an involvement load value of (4). However, the tasks with an involvement load of (4) produced better results in the productive test than tasks with an involvement load of (2).

Although Laufer & Hulstijn (2001) state that a significant obstacle facing all the proposals attempting to operationalize the concepts of processing and elaboration in vocabulary learning 'resides in the difficulty of providing an unambiguous, operationalisable definition' (p.541), they themselves have remained almost unclear about their operationalization of some of the components of the Involvement Load Hypothesis. To begin with, the model is unclear about what the Need component is. Although they state that Need serves as a motivational factor in the model, they first assume a cognitive stand to establish the component, that is, if 'an unknown word is absolutely necessary for comprehension' (Laufer & Hulstijn, 2001: p.14). In other words, whether or not the meaning of certain vocabulary is relevant for performing the task is more cognitive than an affective dimension. It is only when some degree of prominence is to be attached to a given task, Strong (self-imposed) or Moderate (teacher- or task-imposed), that the Need component of the model functions as a motivational concept. To follow, although they admit that there are both negative and positive dimensions to the Need factor, they interpret the notion of need 'not in its negative sense, based on fear of failure, but in its positive sense, based on a drive to comply with the task requirements' (Laufer & Hulstijn, 2001: p.14).

Interestingly, they admit that learners are apprehensive when faced with the enormous task of learning large numbers of vocabulary that any L2 learning requires. There is also much empirical evidence that task apprehension and anxiety negatively affect achieving mastery in different aspects of language (Hewitt & Stephenson, 2011; Liu & Huang, 2011). More importantly, there seem to be more influential factors than ´Need´ to any learning experience. For instance, notions like Anxiety

and Apprehension (Hewitt & Stephenson, 2011; Liu & Huang, 2011), Motivation and Interest (Dörnyei, 2003; Peng & Woodrow, 2011), Attitude and Perception (Hawkey, 2006), Self-Efficacy and Self-Confidence (J. Xu, 2011; Zimmerman, 2000), etc. have extensively been investigated and have proven to play a significant role in language learning. Likewise, Motivation, Interest, Anxiety, and other affective factors appear to be more subject to change and manipulation by providing exciting and appealing tasks than Need does. Finally, research dealing with the impact of Need on language learning is either rare or absent. We, of course, do not tend to argue that Need is irrelevant to learning but that it cannot be the only and most important factor to be included in a model accounting for language learning, in general, and vocabulary acquisition, in particular.

In addition to the inconsistent finding among the studies following the predictions made by the Involvement Load Hypothesis, the Hypothesis seems to be suffering in some other ways. First, as Eysenk (1982), cited by Laufer & Hulstijn (2001), observes, cognitive psychologists almost unanimously hold 'memory performance is determined far more by the nature of the processing activities engaged in by the learner than it is by the intention to learn' (p.6). Likewise, as Crookes and Schmidt (1991) argue, it is not yet clarified how affective factors, including Motivation and Need, might influence information processing. Second, the three components of the Hypothesis carry different degrees of prominence (Need: +, +; search: -, +; Evaluation: -, +, ++). Therefore, since the value of the different components of the construct is not equal, they do not equally contribute to the involvement load of a given task, let alone the fact that Evaluation is highly likely to be much more important in vocabulary learning and retention than Need or Search. Third, the assignment of involvement load to learning tasks appears to be problematic. To put this into perspective, when the teacher asks the students to write a composition, the use of words in the composition rests with the students' decision and volition. Of primary concern here is how we can assign a load of Need to such a task. Is it Moderate (+) because the task is assigned by the teacher, or is it Strong (++) because the student decides whether to use a specific word or not? Moreover, the degree of relatedness of the word to the task seems to be much more important than who imposes the task. If the teacher- or task-imposed task calls for the processing of both formal and semantic aspects of new words (e.g., fill in the blanks with the appropriate form of the words given- form and meaning involved), processing seems to happen at a deeper level than when the self-imposed task requires the processing of only the semantic aspect of the new words (e.g., when the reader decides to look up the new word for its meaning only). Finally, even when the learner decides to look up new words in the dictionary, the Need to do so comes from the difficulty of the word whose meaning is necessary for the comprehension of the text, hence Moderate Need. Therefore, the identification of the Need component as intrinsic or external

and the consequent load assignment of either Moderate or Strong appear to be somewhat subjective. Fourth, the model seems not to fully account for the level of elaboration and processing that learning new lexical items usually calls for as it only considers the semantic aspects of vocabulary items. The model does not consider the knowledge of formal features of lexical items when assigning involvement load index to vocabulary learning tasks. There is, however, both theoretical and empirical evidence that if both semantic and formal features of new words are processed, the task involves deeper and richer processing than attending only to the semantic aspect of them. For instance, Laufer and Hulstijn (2001) argue that more elaboration of new lexical items by paying careful attention to the word's pronunciation, grammatical category, meaning, and so on, will lead to higher retention than if they are processed by paying attention to only one or two of these dimensions.

Finally, the hypothesis does not specify the limitations of its application. More specifically, it is not reasonable to compare tasks of different nature for the depth of processing they require from the learner (involvement load they may impose upon the learner) simply based on the predictions held by the hypothesis. In other words, it seems neither safe nor logical to consider a productive task equal to a non-productive one in terms of the level of processing even though they carry an equal involvement load based on the hypothesis. To put this into perspective, a productive and non-productive task of equal involvement load tends to result in unequal levels of vocabulary learning and retention. For example, Yaqubi, Rayati, and Gorgi (2010) found that a productive task with an involvement load index of (3) resulted in better learning and retention of new vocabulary items than a non-productive task with an equal involvement load of (3). It is even likely that a productive task with moderate Need, zero Search, and strong Evaluation (Total Involvement Load = 3) is more effective for vocabulary learning than a non-productive task with strong Need, moderate Search, and moderate Evaluation (Total Involvement Load = 4). In other words, the Hypothesis fails to clearly predict the difference between the involvement loads of tasks when the tasks are different by nature (e.g., productive vs. non-productive learning activities).

Cognitive Load Framework

Despite the merits of the Involvement Load Hypothesis- it includes both cognitive and motivational aspects of vocabulary learning- it is interesting to point out that involvement load of tasks, as elaborated by Laufer and Hulstijn (2001), is something that cannot be determined without having a learner doing the task, hence inapplicable to studies of instructional materials in the absence of a learner. However, we know

that different learning activities, irrespective of the language learner and simply because of their inherent difficulty level, call for different levels of mental processing. Following the Involvement Load Hypothesis, what might be cognitively demanding for one learner due to differences in the individual learning ability of learners even with the same level of schooling, might not be so for another one. In addition, it is even possible that learning contexts and learner emotional states work so that the same person goes through different levels of processing in dealing with the same task in different situations. Despite all these, pedagogy might sometimes call for determining the cognitive load of the learning activities per se before the proper instruction begins. Therefore, it is useful and, at the same time, reasonable to think of the cognitive load of each learning task with no regard for the learner as is often practiced in text analysis. Thus, drawing upon Laufer & Hulstijn's three-dimension Involvement Load Hypothesis (2001), Zarifi (2013) came up with an alternative framework for determining the cognitive load of the learning activities in ELT materials. The Cognitive Load Framework has borrowed its component terminology from the Involvement Load Hypothesis; yet it provides some operational definitions of the relevant, distinctive components.

To begin with, in this framework, Need is defined in terms of whether word form and/or word meaning is necessary for doing a given task or not. Need, here, is not a motivational element any longer but simply a cognitive feature, for example, for doing a mechanical drill, although the cue is needed and relevant, recognition of the meaning of the cue is absent and irrelevant. However, meaning is relevant and necessary in form-meaning matching tasks and fill-in activities. If the task requires selecting between the different forms or meanings of the same word or selecting from a number of different vocabulary items, Need is Moderate (1). However, Need is Strong (2) in exercises that require a selection as to the appropriate use of both meaning and form of the words provided (e.g., Use the correct form of the appropriate word in each space!). In such tasks, not only does the learner have to choose the word that best completes each sentence semantically, but he should also decide what form or part of speech of the selected word should be used. Finally, Need is (0) in mechanical drills as recognition of form and meaning is irrelevant.

Second, Search is defined in terms of whether or not the word to be used in the task is already provided. For instance, in fill-in tasks where the gap is to be filled with a word from the list, table, or a previous exercise, Search is absent (0). However, it is present and Moderate (1) in gap-fill forms where the learner has to complete the blank spaces with the correct form of the words provided. Finally, Search is Strong (2) where no vocabulary item is given, and the gap is to be filled from scratch.

Third, *Evaluation* is operationalized as the use of a given word in a task that entails an evaluation of the word against its other forms or other words. For instance, in tasks dealing with choosing a synonym, antonym, or the correct definition in a multiple-choice item, evaluation is Moderate (1) since it involves deciding the differences among the meanings of the words be used in the blanks. If, however, use of the word involves generating an original sentence in verbal or written form, Evaluation is Strong (2). Evaluation is absent (0) in mechanical drills as no formal or semantic evaluation of the cues is of concern.

To sum up, the combination of these three components, along with their degrees of prominence, determines the cognitive load associated with each learning task. The assumption underlying the Cognitive Load Framework, as in Involvement Load Hypothesis, is that activities with higher degrees of cognitive load involve more profound levels of processing and are therefore more effective for vocabulary learning and retention. This assumption, in fact, receives much support from Craik and Lockhart's (1972: p.675) argument that the type and depth of mental processing imply 'the degree of semantic and cognitive analysis' and determines the chance that a new piece of information will be stored in long-term memory. More specifically, the quantity of word learning bears the quality of the mental processing triggered when learning occurs. In other words, "The greater the cognitive load, the better the learning" (Nation & Webb, 2011: p.2).

Although the Cognitive Load Framework is still in its infancy and has not been put to any empirical test so far, it is interesting to point out that. Its predictions about the effect of different tasks' degree of cognitive load on learning gain seem to be sheer speculation. The related literature witnesses some pieces of research evidence bearing out the claim. For instance, the negotiated words in communicative activities which enjoyed a higher cognitive load stood a better chance of recall than non-negotiated words (Newton, 1995). Likewise, the vocabulary items used in productive tasks and, therefore, imposed a high degree of mental processing were learned and remembered significantly better than the items practiced in non-productive tasks with a lower degree of cognitive load (Ellis & He, 1999).

Conclusion

Despite the popularity of the Involvement Load Hypothesis and a large number of empirical studies using it as the reference model in investigating vocabulary learning and retention, we have shown that the hypothesis is not clearly operationalized. For instance, Need is defined as a cognitive entity, but it is taken as a motivational construct when the level of prominence of the component is assigned to learning

tasks. Neither is the model consistent in assigning the degree of prominence to each component. The components can receive a pattern of load index from 0-1 to 1-2 or 0-2. Moreover, the model claims to include both motivational and cognitive aspects of vocabulary learning, yet it involves only one of the many affective aspects, leaving all the other important motivational factors unnoticed. In addition, there exists both theoretical and empirical evidence indicating that other motivational features like Motivation, Interest, Anxiety, Attitude, etc., are there out to affect vocabulary learning as well (Hewitt & Stephenson, 2011; Liu & Huang, 2011). Last but not least, the model has even failed to translate the negative aspects of the Need component.

On the other hand, the Cognitive Load Framework has tried to present a clear operationalization of the components so that identification and assignment of load to each factor seems to be an easy task. Although the Cognitive Load Framework is limited in its construct resources (i.e., it does not include affective construct), we tend to reiterate that,

1. affective aspects are not confined to Need.
2. Need is not the first and foremost element of the affective dimension that might affect learning.
3. in addition to positive impacts, Need does involve negative influences on learning as well; and
4. affective factors, including Need, are varied from learner to learner.

Despite its unidimensional construct, the Cognitive Load Framework seems to be more clearly and effectively operationalized. Unlike the Involvement Load Hypothesis, it looks at the retention of new words as conditional upon whether and to what extent the knowledge of the word´s different aspects is relevant to the task, rather than who sets the task. It considers both formal and semantic aspects of word knowledge in assigning a cognitive processing load index to learn and retain new vocabulary items. It can also be readily applicable to studies dealing with vocabulary learning tasks in instructional materials without regard for the language learner. In other words, the Cognitive Load Framework has some practical pedagogical implications as it has identified some objective criteria that could easily be observed, manipulated, and measured.

As a final remark, we tend to point out that some applied linguists established the validity of the Cognitive Load Framework. Professor Norbert Schmitt, for instance, considered it well operationally defined, adding, “your approach is interesting, ….

has to promise and would probably be more quantifiable than the original version" (Schmitt, 2012). Likewise, Professor Paul Nation remarks that the criteria are fine and "Yours however may be easier to operationalize. You start to distinguish form and meaning regarding need. This may be a useful path to follow" (2012). Finally, Professor Trebits looks at the framework as "very interesting" with "a lot of potential," holding that it "would have interesting implications for language pedagogy" (2012).

References

Alcaraz-Marmol, G. & Almela, A. (2013) The involvement load hypothesis: Its effect on vocabulary learning in primary education. *Revista Española de Lingüística Aplicada,* 26, 11-24.

Beal, Vanessa (2007) *The weight of involvement load in college level reading and vocabulary tasks*. (Ph. D.), Concordia University, Quebec. Bowles, Melissa (2004). L2 glossing: To CALL or not to CALL. *Hispania, 87*(3), 541-552.

Craik, Fergus Ian Muirden, & Lockhart, Robert (1972) Levels of processing: A framework for memory research. *Journal of Verbal Learning and Verbal Behavior, 11*, 671-684.

Craik, Fergus Ian Muirden, & Tulving, E. (1975) Depth of processing and the retention words in episodic memory. *Journal of Experimental Psychology,* 10, 268-294.

Crookes, Graham , & Schmidt, Richard (1991) Motivation: Reopening the Research Agenda. *Language Learning,* 41, 469-512.

De La Fuente, Maria Jose (2002) Negotiation and oral acquisition of L2 vocabulary. *Studies in Second Language Acquisition, 24,* 81–112.

Dörnyei, Zoltan (2003) Attitudes, Orientations, and Motivations in Language Learning: Advances in Theory, Research, and Applications. *Language Learning,* 53, 3-32.

Ellis, Rod, & He, Xien (1999) The roles of modified input and modified output in the incidental acquisition of word meanings. *Studies in Second Language Acquisition,* 21, 285-301.

Folse, Keith (2006) The effect of type of written exercise on L2 vocabulary retention. *TESOL Quarterly,* 40, 273–293.

Hawkey, Roger (2006) Teacher and learner perceptions of language learning activity. *ELT Journal,* 60, 242-252.

Hewitt, Elaine, & Stephenson, Jean (2011) Foreign language anxiety and oral exam performance: A replication of Phillips's MLJ study. *The Modern Language Journal,* 96, 170–189.

Hulstijn, Jan, & Trompetter, Pascale (1998) Incidental learning of second language vocabulary in computer assisted reading and writing tasks. In D. Albrechtsen, B. Henriksen, I. M. Mees & P. E. (Eds.), *Perspectives on foreign and second language pedagogy* (Vol. 10, pp. 191-200). Odense: University Press.

Hulstijn, Joris, & Laufer, Batia (2001) Some empirical evidence for the involvement load hypothesis in vocabulary acquisition. *Language Learning,* 51, 539–558.

Keating, Gregory (2008) Task effectiveness and word learning in a second language: The involvement load hypothesis on trial. *Language Teaching Research,* 12, 365–386.

Kim, YouJin (2008) The role of task-induced involvement and learner proficiency in L2 vocabulary acquisition. *Language Learning,* 58, 285–325.

Knight, Susan (1994) Dictionary use while reading: The effects on comprehension and vocabulary acquisition for students of different verbal abilities. *The Modern Language Journal*, 79, 285- 299.

Laufer, Batia (2006) Comparing focus on form and focus on forms in second language vocabulary learning. *Canadian Modern Language Review*, 63(1), 149–166.

Laufer, Batia, & Hulstijn, Joris (2001) Incidental vocabulary acquisition in a second language: The construct of task-induced involvement. *Applied Linguistics*, 22, 1-26.

Liu, Meihua, & Huang, Wenhong (2011) An exploration of foreign language anxiety and English learning motivation. *Education Research International*, 12, 1-8.

Mármol, Gema Alcaraz, & Sánchez-Lafuente, Ángela Almela (2013) The Involvement Load Hypothesis: Its effect on vocabulary learning in primary education. *Revista Española De Lingüística Aplicada*, 26, 11-24.

Nation, Paul (2012, 6, September).

Nation, Paul, & Webb, Stuart (2011) *Researching and analyzing vocabulary*. Boston: Heinle.

Newton, Jonathen (1995) Task-based interaction and incidental vocabulary learning: A case study. *Second Language Research*, 11, 159-177.

Paribakht, Sima, & Wesche, Marjorie (1997) Vocabulary enhancement activities and reading for meaning in second language vocabulary acquisition. In J. Coady & T. Huckin (Eds.), *Second language vocabulary acquisition*. Cambridge: Cambridge University Press, 174-200.

Pellicer-Sánchez, Ana, & Schmitt, Norbert (2010) Incidental vocabulary acquisition from an authentic novel: Do Things Fall Apart? *Reading in a Foreign Language*, 22, 31-55.

Peng, Jian-e, & Woodrow, Lindy (2011) Willingness to communicate in English: A Model in the Chinese EFL classroom context. *Language Learning*, 60, 834–876.

Peters, Elke, Hulstijn, Jan, Sercu, Lies, & Lutjeharms, Madeline (2009) Learning L2 German vocabulary through reading: The effect of three enhancement techniques compared. *Language Learning*, 59, 113–151.

Rott, Susanne (2007) The effect of frequency of input-enhancements on word learning and text comprehension. *Language Learning*, 57, 165–199.

Schmitt, Norbert (2008) Instructed second language vocabulary learning. *Language Teaching Research*, 12, 329–363.

Schmitt, Norbert (2012, 13, September).

Trebits, Anna (2012, 13, September).

Watanabe, Yuichi (1997) Input, intake, and retention: Effects of increased processing on incidental learning of foreign language vocabulary. *Studies in Second Language Acquisition*, 19, 287–307.

Xu, Jianwei (2011) Second Language Learners and Their Self-confidence in Using English: A Social Constructive Perspective. *The Asian EFL Journal*, 13, 246-271.

Xu, Xiaohui (2010) An empirical study on the effect of task on L2 incidental vocabulary acquisition through reading. *Asian Social Science*, 6, 126–131.

Yaqubi, Bagher, Rayati, Rajab Ali, & Gorgi, Allemzade (2010) The Involvement Load Hypothesis and Vocabulary Learning: The Effect of Task Types and Involvement Index on L2 Vocabulary Acquisition. *JTLS*, 2, 145-163.

Zarifi, A. (2013) *Establishing and evaluating phrasal verb use in a Malaysian ESL secondary school* textbook. Universiti Putra Malaysia, Serdang.

Zimmerman, Barry (2000) Self-Efficacy: An Essential Motive to Learn. *Contemporary Educational Psychology*, 25, 82–91.