

## **Priming Model of Words Comprehension in Second Language Acquisition**

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### **Abstract**

Penelitian ini mengacu pada penguasaan kosa kata dalam pemerolehan bahasa asing. Penelitian ini khusus menginvestigasi penggunaan *Priming Model* (menjelaskan suatu kata melalui contoh-contoh dan penjelasan yang dekat dengan konteks kata) dari penguasaan kata. Tujuan dari penelitian ini adalah untuk mengetahui sejauh mana penguasaan kata-kata melalui *Priming Model* dan pengaruh dari *Priming Model* terhadap penguasaan kosa kata siswa. Selanjutnya, penelitian ini mengacu pada pendekatan kualitatif dan pendekatan eksperimental yang khusus menelusuri fenomena dari bagaimana siswa memperoleh bahasa dan memahami kata dengan menggunakan *Priming Model*. Lalu, responden-responden merupakan siswa yang dikategorikan sebagai siswa dengan pengetahuan rendah tentang materi bahasa Inggris yang telah belajar dari Sekolah Menengah Pertama (SMP) hingga Sekolah Menengah Atas (SMA), sedangkan responden lainnya yaitu siswa yang pengetahuannya dikategorikan *high proficiency*, sebab mereka telah belajar materi bahasa Inggris hingga duduk dibangku kuliah. Lebih lanjut, dalam pengumpulan data, tes sangatlah diperlukan. Tes disini merupakan tes tertulis dan lisan terhadap dua kategori responden. Hasilnya, diketahui bahwa *Priming Model* membantu siswa menganalisa dan memahami kata dengan mudah secara konteks dan teks dalam pembelajaran pemerolehan bahasa.

Kata Kunci: *Priming Model, Word Comprehension, dan Second Language Acquisition*

### **A. INTRODUCTION**

Vocabulary mastery is regarded as bases in both spoken and written communication. What happens if speakers do not mastery lots of words or vocabulary? There possibly will be a difficulty and even failure in communication. That is why there have been many strategies, models, and

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theories designed in order to be able to comprehend and recognize the words easily.

In fact, vocabulary and its strong relationship to comprehension has been verified over and over again. Vocabulary plays an important part in learning to read as well as reading to learn. We also know that increasing vocabulary knowledge plays a large part in overall school success and has a direct impact on comprehension.

There may be problems in learning English when the students do not master enough vocabulary well. Perhaps, they will not be able to comprehend the content of the text if they have less vocabulary. Also, they will not be able to speak fluently when they have very limited vocabulary. Moreover, they can not write accurately and fluently if they still can not make use of various vocabularies in their writing.

In relation to cognitive theory of language acquisition and learning which in this case is directed to words comprehension, the process that people use to comprehend words in spoken and written communication is as well as they store and organize its meaning in their memory. In other words, in words comprehension, learners need process and model which help them to perceive it easily and relate it to their memory.

One of the most applicable and effective models in words recognition is priming model. Priming model is assumed to be successful in building and enhancing learners' words comprehension and storing it subconsciously in learners' memory. In priming model, the identified or target words are comprehended through giving stimulus or exposure to the words which have relation (semantic or contextual) to the target words.<sup>2</sup> Then, it is also assumed that words are recognized faster if it is immediately preceded by another words related in meaning.<sup>3</sup>

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<sup>2</sup> Wikipedia. *Priming (Psychology)*. Accessed on December 20 2012.

<sup>3</sup> Meyer, D. E., & Schvaneveldt, R. W. *Facilitation in recognizing pairs of words: Evidence of dependence between retrieval operations*. *Journal of Experimental Psychology*, 1971, no. 90, p. 227-234.

Regarding the short issue conveyed previously, this study was objected to investigate and describe how learners or people recognize and comprehend words through priming model of words comprehension in second language acquisition. Related to the objective stated before, several research questions guided the process of data collection and analysis. The questions were:

1. How do learners comprehend words through priming model of words comprehension?
2. What is the effect of priming model on learners' words comprehension?

Therefore, this study was done specifically in order to know the answer to the two previous questions stated. Finally, hopefully this study could give benefits to people including teachers, linguist, and readers who are curious about priming model of words comprehension.

## **B. DISCUSSION**

### **1. Definition of Vocabulary**

Vocabulary is a list of words and their combination in particular language<sup>4</sup>. Vocabulary learning is important because it is needed by learners to acquire a lot of words so they can use the vocabulary in any needs especially academic needs<sup>5</sup>. Vocabulary learning can be applied in classroom activities by teachers by considering the level of language proficiency of the students so a successfu and effective vocabulary learning can be reached.

Then, it is defined that "Vocabulary is needed for expressing meaning and in using the receptive (listening and reading) and the productive (speaking and writing) skills." So it means that the learners in learning foreign language need to master the words that are used in communication. So it can be understood that vocabulary is one of keys to be successful in learning English.

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<sup>4</sup> Joklova, K. (2009). Using Pictures in Teaching Vocabulary. Retrieved on February,15,2013from[http://docs.google.com/viewer?a=v&q=cache:RMNnBmVtlCYJ:is.muni.cz/th/123676/pedf\\_b/](http://docs.google.com/viewer?a=v&q=cache:RMNnBmVtlCYJ:is.muni.cz/th/123676/pedf_b/)

<sup>5</sup> Khodareza & Komachali, E. (2012). The Effect of Using Vocabulary Flashcard on Iranian on Iranian Pre-University Students' Vocabulary Knowledge. Canadian Center of Science and Education Journal, 5 (3): 134-147.

## **2. Types of Vocabulary**

To learn English, the learners have to master four skills. The four skills are listening, speaking, reading and writing. The four skills can not be separated one another because they are related closely. Vocabulary has types based on the four skills. They are:

### a. Reading vocabulary

A person's reading vocabulary is all the words he or she can recognize when reading. This is the largest type of vocabulary simply because it includes the other three.

### b. Listening vocabulary

A person's listening vocabulary is all the words he or she can recognize when listening to speech. This vocabulary is aided in size by context and tone of voice.

### c. Writing vocabulary

A person's writing vocabulary is all the word he or she can employ writing. Contrary to the previous two vocabulary types, the writing vocabulary is stimulated by its user.

### d. Speaking vocabulary

A person's speaking vocabulary is all the words he or she can use in speech. Due to the spontaneous nature of the speaking vocabulary, words are often misused. This misuse-though slight and unintentional-may be compensated by facial expressions, tone of voice, or hand gestures.

## **3. Kinds of Vocabulary**

In daily activity, the people do the four skills. They are listening, speaking, reading and writing. The four skills can not be separated from vocabulary. Even if we learn a word, it takes a lot of practice and context connection for us to learn it well. English vocabulary is divided into two kinds. They are passive vocabulary and active vocabulary.

a. Passive Vocabulary

Passive vocabulary is a rough grouping of words we understand when we hear them. We often get passive vocabulary in our daily life. For example, when we are listening song or someone speaks. Another example is when we are reading. The words that we caught from them are passive vocabulary. The listener and the reader recognize but would not necessarily be able to produce.

b. Active Vocabulary

Active vocabulary is made up of words that come to our mind immediately when we have to use them in a sentence, as we speak. Active vocabulary appear when produce the words to sentences in speaking or writing.

Based on the definition above the vocabulary of four skills can be divided into passive and active vocabulary. The words that we caught from listening, reading are passive vocabulary. The words that we produce in speaking or writing are called active vocabulary.

#### **4. Definition of Priming**

It is stated that priming is a theory in which the activation of one thought may trigger related thoughts. Grounded in cognitive psychology, the theory of media priming is derived from the associative network model of human memory, in which an idea or concept is stored as a node in the network and is related to other ideas or concepts by semantic paths.<sup>6</sup>

In other words, priming is defined as brain activation theory, in which the activation of one thought or concept may be triggered and developed through the activation of other thought or concepts which have similar relation to the concept. For instance, people do not understand the meaning or concept of “sink”, yet they will know its meaning easily if the words which are related to it are introduced such as water, kitchen, soap, faucet, etc.

Then, in relation to people brain or memory, concepts of certain thought such as words, and lexicon are interconnected to other words or lexicons which

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<sup>6</sup> Wikipedia, *loc. cit*

have related meaning and concept to it. For instance, the word “wolf” is interconnected to the word “dog” because they have similar semantic or concept.

Moreover, Priming is defined as “an implicit memory effect in which exposure to a stimulus influences a response to a later stimulus. It can occur following perceptual, semantic, or conceptual stimulus repetition”.<sup>7</sup>

In line with the previous statement, priming refers to “an increased sensitivity to certain stimuli due to prior experience. Because priming is believed to occur outside of conscious awareness, it is different from memory that relies on the direct retrieval of information. Direct retrieval utilizes explicit memory, while priming relies on implicit memory.”<sup>8</sup>

From the two definitions given, it can be assumed that giving stimulus to certain words or lexicon could awake the words into subconscious process of that words recognition. It means the process of priming learning model is an implicit and subconscious process of learning which have effect in words or language memory.

#### **4.1 Types of Priming**

##### **a. Perceptual Priming**

Perceptual Priming works with items which have similar form. Then, it is based on the form of stimulus and developed by the match between the beginning and the last stimulus. An example of perceptual priming is identically related to identification of incomplete words such as in word stem completion. For instance, if a person reads a list of words including the word *table*, and is later asked to complete a word starting with *tab*, the probability that he or she will answer *table* is greater than if they are not primed.

##### **b. Conceptual Priming**

Conceptual priming is based on the meaning of stimulus and developed by semantic tasks. It means that target words are comprehended through giving stimulus to other words (primed words) which have similar category or meaning.

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<sup>7</sup> Ibid.,

<sup>8</sup> Jacoby, L. L. *Perceptual enhancement: Persistent effect of an experience*: Journal of Experimental Psychology: Learning, Memory, and Cognition, 1983, no.15, p. 930-940

For example, *table* will show priming effects on *desk*, because *table* and *desk* belong to the same category, concept, and meaning.

#### c. Associative Priming

Associative Priming is also called as context priming. In associative priming, the target words have high probability to appear with the primed words. In other words, target words are usually associated with primed words although they do not have the same semantic category. For instance, the words *set* (target word) is usually associated with *sun* since those words usually appear together in phrases or sentences, i.e. *the sun set in the west*. Thus, *set* (target word) is comprehended and recognized easily if it is associated to the words (primed words) *sun*. In that case, the word *sun* is regarded as stimulus which is given to word *set*.

In relation to context priming, associative priming has similar effect with it. In context priming, context is used as stimulus in the process of comprehension. It means that grammar and vocabulary in sentences or phrases provide contextual clues in order to comprehend the target words. The clues can be in form of synonyms, antonyms, explanation, and punctuation. For instance, the word *cruel* (target words) is understood easily when it is associated in contextual clues, such as *Mary is a friendly girl, but her sister is a little bit cruel* (primed words). In the sentences, conjunction *but* is provided to give stimulus to understand the word *cruel*.

#### d. Semantic Priming

Semantic priming has been a focus of research in the cognitive sciences for more than thirty years and is commonly used as a tool for investigating other aspects of perception and cognition, such as word recognition, language comprehension, and knowledge representations. “Semantic Priming: Perspectives from Memory and Word Recognition examines empirical and theoretical advancements in the understanding of semantic priming, providing a succinct, in-depth review of this important phenomenon, framed in terms of models of memory and models of word recognition”.

Moreover, semantic priming is the most common type of priming in word recognition tasks.<sup>9</sup> in <sup>10</sup> The *semantic* in *semantic priming* implies that priming is produced by true relations of meaning. In relation to words comprehension theory, one word (target word) is recognized and comprehended due to the comprehension of other words (primed words) which have the same semantic category with the target word. For instance, the meaning of *wolf* is recognized easily if it is related to the word *dog* which has similar meaning category with *wolf*. So, *wolf* is called target word, while *dog* is called primed words.

Regarding the types of priming stated before, there are still some types of priming which are not discussed yet in this study such as repetition, response, and masked priming. The discussion toward the previous types of priming is specifically done, because the focus of the study is related to those types of priming; associative, perceptual, conceptual and semantic priming.

#### 6. The Effect of Priming in Words Recognition

Priming has effect in words recognition process. It means that the identification and understanding of certain words can be facilitated by giving exposure to words related to the identified words. The words which need to be identified are called target words, while the related words which are given exposure and stimulus are called primed words.

Priming model has both positive and negative effect on words comprehension. It is called positive and negative priming. It is called positive priming when the priming model can speed up the process of words comprehension. Positive priming is caused by simply experiencing the stimulus. Positive priming effects happen even if the prime is not consciously seen. In contrast, negative priming speeds to slower than un-primed levels. Negative priming is caused by experiencing the stimulus, and then ignoring it.

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<sup>9</sup> Harley, T. *Psychology of Language: From Data to Theory*. Psychology Press Ltd, 2001, New York.

<sup>10</sup> Gulan, T and Pavle Valerjev. 2010. *Semantic and Related Types of Priming as a Context in Word Recognition*. Review of Psychology, Vol 17, No 1, 53-58.



There have been many people conducted research in investigating the effect of priming in words' comprehension.<sup>11</sup> Then, it was found that the words are recognized faster if it is immediately preceded by another word related in meaning.<sup>12</sup> However, it was found that priming in word association depends largely on the storage of information relating the cue and target.<sup>13</sup>

Then, priming give effect in words recognition in two different ways. The first is called facilitation which means that priming can speed up target word processing. The second is called inhibition which means that it slows down the processing.

## 5. METHODOLOGY

This study was a type of qualitative and experimental study which focused on investigating the phenomenon of how learners acquire and comprehend words by using priming model of words' comprehension and recognition. Then, experimental principle was applied in this study through giving priming model of words recognition, in which several questions related to words understanding were designed. The questions were English words or vocabulary comprehending tests which were designed based on the principles and application of priming model. After that, the respondents answered the questions. Finally, the effectiveness and success of the model were seen from the respondents' answers.

Two respondents participated in doing the test. All respondents were categorized as adult learners; one of them was regarded as low proficiency English learners since she had ever learned English from junior until senior high school, while the other one was high proficiency learners because she had learned English until she was in college.

English words' recognition and comprehension test was used as an instrument in collecting the data. There were about ten questions which were

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<sup>11</sup> Harley, T. *loc. cit.*

<sup>12</sup> Mayer, D. E., & Schvaneveldt, R. W. *loc. cit.*

<sup>13</sup> Zeelenberg, Rene. at all. *Semantic Context Effects and Priming in Word Association*. *Psychonomic Bulletin and Review*, 2003, no. 10 (3), p. 653-660

divided into four types of priming; conceptual, perceptual, associative, and semantic priming. Three questions were designed based on perceptual priming, three questions were designed based on conceptual priming, two were designed based on semantic priming, and the last two were designed based on associative priming.

In collecting the data, the test was given through having written as well as spoken interview to the two respondents. Then, the respondents were informed that they would be asked to answer ten questions related to words comprehension. The rules of the test and time allotment were discussed. Before giving questions using priming model of words comprehension, firstly respondents were asked whether they knew the target words or not. When they did not know the target words and their meaning, the questions would be given using priming model. That data collection procedure was done until all target words which were asked in the questions were comprehended by respondents.

Since this study was qualitative research, in which the purpose was to investigate the phenomenon of how learners comprehend words through priming model, data analysis was in a form of data description. In other words, the process of how respondents responded and answered the questions and the result of the test itself was described and narrated from the beginning until the end.

## **6. FINDING**

The data was described based on the process and result of respondents' answers to ten questions given which were specifically categorized into four types of questions. They were:

Questions number 1 to 3 was related to perceptual priming. The two respondents were asked to identify target words, in which exposure and stimuli were given to the letters in the words. Those target words were "table, flower, and lipstick". For example, *table* was identified through exposure to the letters (t-ta-tab-tabl-table). Then, *flower* was identified through exposures to letters (f-fl-flow-flowe-flower). Finally, lipstick was identified through exposure to letters (l-li-lip-lips-lipst-lipsti-lipstic-lipstick).

In answering question 1 to 3, respondent 1 (low proficiency learners) could identify *table* (target word) when the exposure was in *tab-*, and so could respondent 2 (high proficiency learners). Then, respondent 1 identified *flower* when the exposure achieved *flo-*, but respondent 2 identified it in exposure *flow-*. Finally, respondent 1 could identify the word lipstick when the exposure was in *lipst-*, and so could respondent 2. Before they identified the target words, they identified other various words along with lots of stimuli given to the letters, (appendix).

From respondents' answers, it was found that the more stimuli given to the letters, the more accurate respondent's answers were. It is in relation to theory given in previous part. It is said that many exposures given to certain thought will implicitly and subconsciously will trigger other words activation in people memory. <sup>14</sup>In this case, respondents subconsciously could identify the target words (*table, flower, and lipstick*) from the exposure given to their letters.

Then, questions 4 to 10 were related to conceptual, semantic and associative priming types, in which concept, meaning, and context were used as stimuli and exposures to target words. For instance, the word "sink" was comprehended through exposure to contextual related words "*you wash your hands in the sink, the sink is in the kitchen, and water, faucet, and soap are in the sink*" (appendix).

In answering questions 4 to 10, both respondents did not understand target words before exposure and stimuli were given. However, respondent could success in identifying and comprehending all words after exposure and stimuli are given to the related words (appendix). For example, in question 4, both respondents did not know the meaning of *warrior*, but after the stimuli were given to the words related to it, i.e. *Imam Bonjol, Diponegoro, Kartini, and Antasari are warriors of Indonesia*" both respondents could easily understand that *warrior* means *hero*.

In question 5 both respondents comprehended "sink" after conceptual exposure was given in *you wash your hands in the sink, the sink is in the kitchen*

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<sup>14</sup> Jacoby, L. L. *loc. cit.*

*water, faucet, soap are in the sink.* In that case, the related words such as *kitchen, water, faucet,* and *soap are words* which have conceptual relation to *sink*. In question 6, target word *desk* is very easily understood by the two respondents, and even respondent 1 which is low proficiency learner.

Then, in question 7, target word *dromedary* was understood by respondents after stimuli was given to conceptual related words with it, i.e. *I like to watch puppet show; marionette is one of puppet types from java. Puppet, show and Java,* were words which have related concept with *marionette*. In question 8, *loutish* is target word which was comprehended by both respondents through stimuli given in contextual clues, i.e. *Jessica is beautiful, but her sister is loutish.* The word *beautiful* and conjunction *but* were used as stimuli to comprehend *loutish*.

Moreover, in question 9, respondents were asked to comprehend target word *dromedary* through exposure to the words *camel* in the sentences *the dromedary commonly called a camel, stores fat in its hump.* The exposure is given to contextual clue, i.e. *commonly called* (synonyms). In that case, *dromedary* has similar meaning with *camel*. Finally, in question 10, *hare* is target word which was comprehended by respondents through contextual stimuli in the sentences i.e. *Hare, a type of rabbit lives in jungles.* In that case, *rabbit* is given stimuli using contextual clue “*a type of*” this identifies *hare* as synonyms for *rabbit*.

From the data described before, it was found that both respondents didn't understand the target words before they were given exposures, except the word “*desk*”. However, when the exposures and stimuli were given to the words which have conceptual and contextual relation to the target words, both respondents finally could comprehend the target words easily and accurately.

In other words, priming model of words comprehension can help learners in comprehending words. Specifically, in priming principles, target words and the words which have related concepts and meaning to them (primed words) are interconnected each other in one networks in human brain. The activation of certain words in fact can awake or trigger the activation of other words which have relation.

This is in line with what is proposed by cognitive and connective theory of second language acquisition which argues that languages develop as well as human brains develops. In other words, human brain can connect and activate the information to other information.

In relation to the effect of priming model, this study found that priming model have positive effect on respondents' words comprehension which means that priming model can facilitate and speed up processing of words comprehension.

Comparing the capability of respondent 1 (low proficiency) and respondent 2 (high proficiency), it was found that although they have different level of proficiency; both respondents could comprehend target words easily through the exposure in priming model.

## **7. CONCLUSION**

Therefore, it can be concluded that priming model is an effective and applicable model of words comprehension models. In other words, priming model can help learners to recognize and comprehend words easily in implicit and subconscious way of learning or acquiring. Moreover, this study concludes that human brains do develop in learning and acquiring language because they can connect information, thought, and concepts as well as activate it to the other related information.

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