

## THE ROLE OF ASSOCIATIONS IN VOCABULARY ACQUISITION: A PSYCHOLINGUISTIC STUDY OF INDIAN ESL LEARNERS

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**Abstract.** Learning English as a second language is an area of study which demands persistent research, probing and application of the findings. In India, English language is a part of everyday life, and the exposure to English vocabulary comes through a multitude of sources which include media, game applications and social networking among others. In many instances, even complicated and less frequent words are made familiar by these sources. However, the learners of ESL struggle for a good choice of words when they are in a situation to use the language. This has led the researcher to question how the process of vocabulary acquisition happens and how the acquired words are organised and stored. The current research is a psycholinguistic analysis of the way words are organised and associated with each other in the mental lexicon of the learners. The researcher attempts to study the role and impact of associations in vocabulary acquisition through an experimental study. The participants of the study are 120 Indian ESL learners enrolled for an undergraduate programme. They were tested with two methods of teaching vocabulary, namely the word definition method and semantic cluster method. The outcome of the study is discussed in the research paper.

**Keywords:** *vocabulary acquisition; psycholinguistics; mental lexicon; associations; semantic networks.*

**Кавітга, В., Каннан Падмасані. Роль асоціацій в опануванні лексики: психолінгвістичне дослідження індійських студентів, які вивчають англійську як другу мову.**

**Анотація.** Вивчення англійської мови як другої мови є сферою дослідження, яка вимагає наполегливості, перевірки й прикладне застосування одержаних результатів. В Індії англійська мова є частиною повсякденного життя, тому частина англійської лексики має безліч джерел, які включають у себе засоби масової інформації, ігрові додатки та соціальні мережі. У багатьох випадках навіть складні та менш поширені слова стають загальновідомими завдяки вищезгаданим джерелам. Проте студенти, які вивчають англійську як другу мову стикаються з проблемою вибору правильної лексики під час конкретної мовленнєвої ситуації. Це зумовило мету цієї статті – з'ясувати, яким чином відбувається процес відбору лексики і як набуті слова організуються та засвоюються. Це дослідження присвячене психолінгвістичному аналізу, а саме: як слова організовані й пов'язані одне з одним в ментальному лексиконі студентів. Автори роблять спробу вивчити роль і вплив асоціацій на формування словникового запасу шляхом експерименту. Учасниками дослідження були 120 індійських студентів бакалаврату, які вивчають

англійську як другу мову. Студентів тестували за допомогою двох методів викладання лексики, а саме методу визначення слова і методу семантичного кластера. Результати дослідження подано в цій науковій праці.

*Ключові слова:* опанування лексики, психолінгвістика, ментальний лексикон, асоціації, семантичні мережі.

## 1. Introduction

Vocabulary learning is an integral part of language learning. Singleton (1999), in a book on Mental Lexicon, says, "...the major challenge of learning and using a language – whether as L1 or L2- lies not in the area of broad syntactic principles but in the nitty-gritty of the lexicon". It still remains a challenge in language learning, especially when it comes to second language vocabulary acquisition. The process becomes even more layered and complicated in adult learners of a second language. The experience of having already learnt a language is both a help and hindrance for learning a second language as an adult. Added to this is increased self-awareness, fear of being mocked, and other psychological barriers.

In India, where the language has been given the status of second language, teaching and learning of English is a process that is continuously researched upon and improvised to meet the needs and changes of time. In the present day scenario, the L2 learners of English in India come across and assimilate English vocabulary from multitude of sources other than the classroom training. This makes vocabulary acquisition a more complicated phenomenon. The learners are exposed to English vocabulary in different forms through new technology, science, social media, mass media, international sports, and so on.

The spread of English in India is so deep that the language has undergone the 'process of nativisation' (Saghal, 1991) and has assimilated characteristic features of the land, culture and different religions. The extensive functions and deep rooting of English has given rise to many varieties and genres of spoken and written English for expressing different social, cultural and religious situations. In fact, British English has become a minority in comparison with Indian English (Crystal, 1988). On the contrary, in a language classroom, it can be observed that the students struggle even to compose a letter or articulate their problems properly. In some areas like day to day communication and expressing their feelings they seriously lack good choice of words. But surprisingly, they are familiar with a handsome number of words, inspite of their less frequent usage in day to day conversations. They are familiar with words and concepts like 'colosseum', 'barbarian', 'grenade', 'aerobatics', 'genie', 'regiment', 'pixel' and a number of other words learnt through mobile technology and games. They are able to understand the concepts and contents in social networks.

This paradoxical language situation gives rise to a few questions,

- How is vocabulary acquired and stored?
- How can the acquired words be stored and recollected efficiently?

The search for answers to these questions leads us to the study of the cognitive processes behind the vocabulary acquisition. The theories of psycholinguistics render a profound insight into the language learning process.

## **2. Literature review**

The perspective of Psycholinguistics for vocabulary acquisition and the psycholinguistic theories that explain the acquisition and storage process have contributed a lot to the understanding of the vocabulary acquisition process. According to Schmitt (2010), “Psycholinguistics is the study of the cognitive process that supports the acquisition and use of language”. Psycholinguists explain vocabulary in terms of Mental Lexicon, a metaphor that gives the closest possible picture of the structure of human vocabulary. In the Mental Lexicon, according to the psycholinguists and their findings, the words are stored in networks and not in the form of lists like in a dictionary. These networks are made of associations connecting the words by their phonological similarities, orthographic similarities and different types of semantic connections. Aitchison(1987) visualises the network of words as ‘giant multi-dimensional cobweb’. Carter (1992) reinforces the idea by saying that “... words do not exist in isolation: their meanings are defined through sense relations they have with other words.” These networks keep changing their structure and size with a person’s changing vocabulary knowledge. The associations the words make with each other characterise the storage and usage of the word. At initial stages of exposure in a child, the association between words are mainly based on their phonological similarities (Aitchison, 1987). As they grow, they associate the words by their semantic affinities. However, in Second language learners, there is a more common type of association found and classified as ‘encyclopaedic associations’ (Fitzpatrick, 2006;Meara, 2009). They are the types of associations in which the learner connects a word to one particular experience in which they encounter the word. The word knowledge is limited to the particular context and the richness of meaning remains unexplored. A native-like proficiency is achieved when a word is associated and networked with more number of words with close semantic affinities like synonymy. Researches have proved that with increasing proficiency level, learners shift towards these types of associations. The learners move from making phonological associations to semantic associations (Aitchison, 1987), reaching a higher level of proficiency when they associate a word with stronger semantic counterparts like synonyms and coordinates (Ervin, 1961; Aitchison, 1987; Schmitt, 2000; Meara, 2009).

This understanding of the association of words in the lexical networks has given rise to a wealth of research aimed at understanding the nature of the networks and exploiting the knowledge for improving the vocabulary teaching methods. The very common Word Association Test with its long history has been one useful technique to get a closer insight into the Mental Lexicon and the lexical networks (Schmitt, 2000).In the beginning stages, the associations were studied through Word Association tests by psychologists to understand the general behavior (e.g., Galton, 1879; Jung, 1910, cited in Meara, 2009) and to study behavioral abnormalities (e.g.,

Sommer, 1901; Kent and Rosanoff, 1910, cited in Meara, 2009). Gradually the study of the associational behavior made its way into the study of L1 and L2 vocabulary acquisition process with the incessant research works of experts like Lambert, Klaus Riegel and Ervin.

The implications of the research on associations and semantic networks have been used for vocabulary teaching. Norbert Schmitt (2000) recommends ‘associating words with their coordinates’ and using ‘semantic maps’ as a memory technique in vocabulary teaching. He says that semantic grouping is “an important way to aiding recall and people seem to organise words into groups naturally without prompting” (p. 37). Paul Nation (2013) suggests that knowing a sensible number of associations for a word like synonyms, opposites or coordinates “helps understand the full meaning of the word and helps recall the word form or its meaning in its appropriate context” (p.136). He proposes that knowing a list of ‘associations’ as one of the aspects of ‘knowing’ a word (p. 79).

The review of the studies that has been done so far suggests that strong semantic associations play a very important role in efficient learning, storage and recall of vocabulary. To test this assumption formed, an experimental study was conducted and the results were analysed.

### **3. Methods**

#### **3.1. Participants of the study**

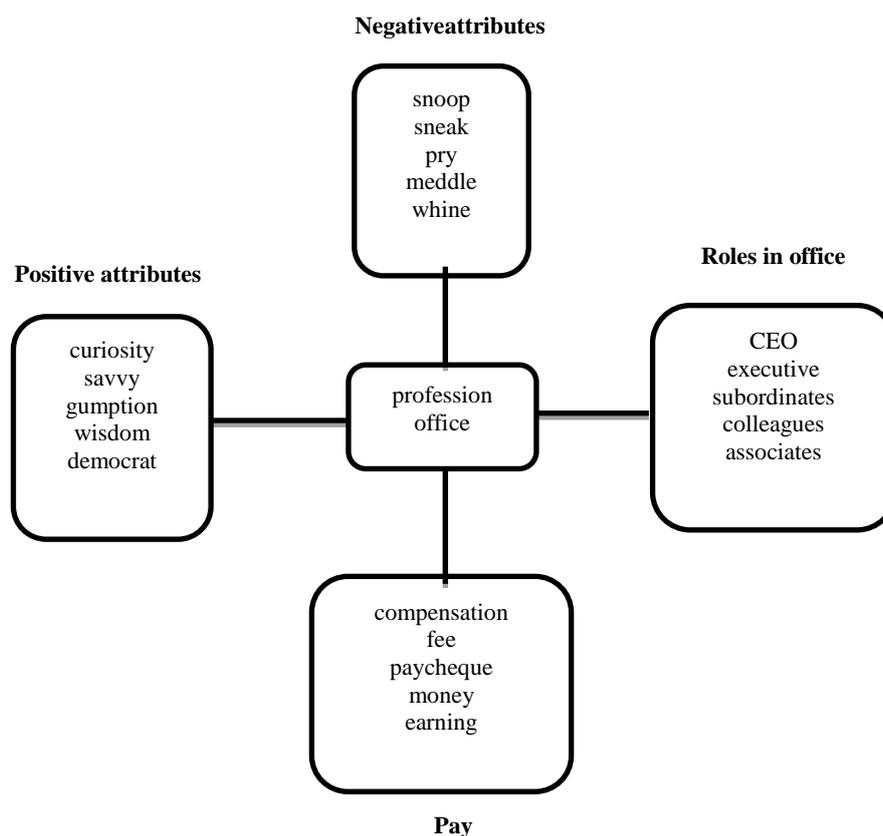
The participants of the study were 120 tertiary level learners enrolled in Bachelor’s Degree programme in commerce. The learners were divided into two sections by the institution, evenly distributing them in terms of proficiency level and gender to maintain evenness in the quality of the classes. The participants were believed to have the basic training in English since they had to mandatorily take up English as a subject in their Higher Secondary Schooling (HSC) and score a minimum of 40% to get admitted into the undergraduate degree programme. The researcher has taken up the two evenly distributed groups of learners as two groups of participants for the experimental study.

#### **3.2. Tools for the study**

The research material for the study was a list of 20 words chosen from a prose piece titled “To Know When to say ‘It’s None of Your Business’” written by Mark McCormack in the text “Textures in English” prescribed by the University of Madras. Since it can be safely assumed that the material in the text prescribed is relevant and suitable for learning, the prose piece in the text was chosen for study. The content of the prose work is based on the professional setup of a corporate office and the behaviour of the people working in the office.

For group 1 (henceforth called Word Definition (WD) Group), the words were explained in the context of the prose piece. After the completion of the prose, the words were extracted and explained again with their definitions. The participants were asked to write down the list of words with their definitions.

For group 2 (henceforth called Semantic Association (SA) Group), the selected words were explained in the context of the lesson. After the completion of the prose, the words were grouped based on their close semantic relationships and taught as four clusters (Figure 1). The list of 20 words were grouped under four categories namely, 'positive attributes', 'negative attributes', 'roles in office' and 'pay'. The similarities and differences between the words within the groups were also explained.



**Fig. 1.** *The semantic groups*

After three weeks, the learners of both the groups were asked to recollect as many words as possible from the prose. They were not given prior intimation about the task. The chosen words were identified, counted and compared for result analysis.

#### **4. The study**

The words recollected by each participant were analysed and the words they had recollected from the list were noted down and counted. A comparative table (Table 1) was made with the number of words that was recollected (in percentage) and the number of participants from each group. The results of the two groups were compared. The data collected from the samples were then statistically tested using ANOVA (Analysis of Variance) for the significance level of the difference between the groups.

Table 1

## Numerical results of the two groups

Words recollected	Word Definition Group (Number of participants)		Semantic Cluster Group (Number of participants)	
	Number	Percentage	Number	Percentage
85% and above	0	0	2	3.3
70% and above	0	0	08	13.3
55% and above	4	6.7	17	28.3
45% and above	11	18.3	28	46.7

Source: Computed from primary data.

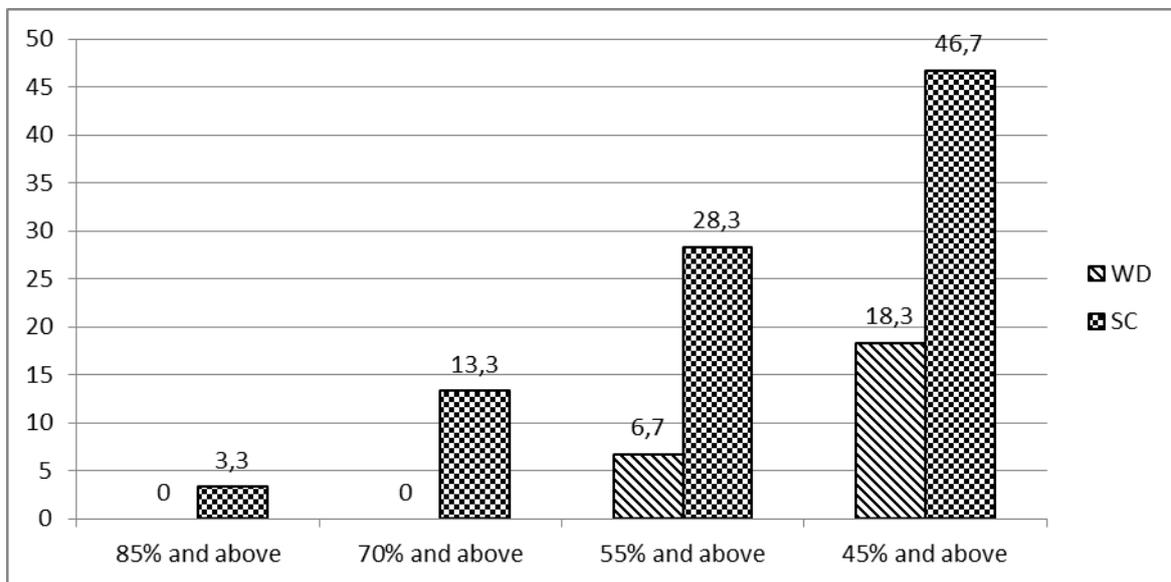


Fig. 2. Graphical representation of the results

The results (Table 1 and Figure 2) clearly indicate that the associations certainly have an impact over the learning process. There is a positive sign of better retention and recollection when the words learnt with semantically associated words. Even after the words were explained in context and with word definitions, only about 18 % of the participants were able to recollect more than 45% of the words. Whereas in the semantic grouping method, number of the participants who could recollect 45% and above is more than double (46.7%).

However, to verify if the difference is significant, a simple statistical test namely ANOVA test was applied to compare the total number of words recollected by each group. A null hypothesis was framed for the statistical analysis.

**Null Hypothesis ( $H_0$ ):** There is no significant difference between the recollection capacity of the Semantic Cluster Group and the Word Definition Group

Table 2

**The ANOVA Test**

Sum of Squares	df	Mean Square	F	Sig.
220.861	10	22.086	3.962	.001
551.722	49	11.260		
772.583	59			

Source: Computed from primary data.

\* Significant at five percent level ( $p$  value  $\leq 0.05$ )

As can be seen from the result of the test (Table 2), the calculated F value is (3.962) is higher than the table value of 5 % level of significance. This proves the null hypothesis rejected and it is concluded that there is a significant difference between the recollection capacity of the Semantic Cluster Group and the Word Association Group.

Apart from the numerical difference, there are a few other phenomena that can be observed from the study. The participants of the Semantic Cluster Group showed a tendency towards recollecting the words in clusters to which they were exposed. They exhausted one cluster moving on to the next one rather than recollecting in random.

The cluster that was made of roles in office was the most recollected. the words 'CEO', 'executive' and 'subordinates' were found to be the most recollected from this cluster. The word 'colleagues' was recollected by a few while 'associates' was hardly to be found recollected. Surprisingly, in spite of being less familiar and frequent, the words clustered under 'negative attributes' were found to be recollected without much effort. Most of the participants had effortlessly recalled the word 'snoop' and in a significant number of cases, it was immediately followed by 'sneak' and 'pry'. The least recollected were the words clustered under the category of 'positive attributes'.

Another interesting behaviour was observed in the participants of the 'Semantic Cluster Group'. While the words were exposed as clusters in the classroom, the participants had a natural tendency to analyse the internal differences between the words belonging to one cluster. For example, the word 'associates' intrigued them when it was placed along with words like 'colleagues' and 'subordinates'. Since the word 'associates' was used commonly in a different meaning (commonly as a verb), they wanted to find out how it came to be under this cluster.

## 5. Results and Discussion

The analysis of the study has helped understand the vocabulary acquisition process not merely through numbers, but through the kind of words that were easily retained and recalled. In addition, the participants' reaction and response to the different techniques reveal the cognitive process of vocabulary learning. As can be seen from the data collected and the numerical values extracted, the semantic

clustering of words has a positive impact on the retention and recollection of words. During recollection, the participants showed the tendency to exhaust words under one cluster before moving on to the next cluster. This shows that the words with semantic affinities were simultaneously activated. This simultaneous activation of words which are semantically associated gives a learner a good choice of words to choose from in a particular context, leading to the enrichment of the vocabulary.

The participants' inclination to analyse the words in each cluster by the way of compare and contrast was another positive sign of their involvement in the learning process. They could learn more on the meanings of the words by learning the subtle differences with the related words. They get motivated for self-learning. Also their interest for vocabulary develops since clusters are mostly taught with a graphic aid like mapping.

## 6. Conclusion

The study proves that the association of words indeed play a very significant role in vocabulary knowledge. The associations help create a meaningful, rich and dense networks for the words learnt. But, the words that are retained should be available for usage in different contexts. The scope of this study, however, is limited to the testing the impact of associations in the vocabulary acquisition and recollection process and not the testing of vocabulary knowledge. The findings of the research can be taken further by probing deep into the different types of associations, their influence on different word classes and their impact on the vocabulary input methods.

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