Mind Mapping From Cognitive Perspectives

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Abstract: Vocabulary is considered to be the basis in the learning of a foreign or second language. A vast amount of scholars and linguists believe that vocabulary plays a principal role in learning a second language. As stated by Cameron (2001) "building up a useful vocabulary is central to the learning of a foreign language at primary level." Taking as a root of vocabulary memorizing, students repeat words (Ellis & Beaton, 1993). But the process of learning vocabulary through repeating is not an interesting and rather challenging task for learners despite the level they possess (Li, Yang & Chen, 2010). Most teachers tend to use the traditional way of learning vocabulary like repetition or giving definitions to new words which is not the most effective way. These problems are often discussed between researchers and Tony Buzan - the inventor of Mind Maps proposed to implement his visual aid system in the absorbing process. Basing on his hypothesis in this case study the mind mapping technique was reviewed, examined, clarified suitable mind mapping techniques, and recommended the chosen technique to learners in vocabulary learning from cognitive perspectives.

INTRODUCTION

Tony Buzan is the originator of Mind Mapping and he has applied this technique in many different spheres. Buzan has taught learners all over the world and find this technique a rather fun and fruitful system in delivering information as well as revising.

According to Cognitivism theory, it bases on the ability to think, analyze, and process the new information. This theory claims to use visualization tools to enhance the understanding of the previous topics and add new information. As Buzan (1993) states that the key to reaching the information to our minds lays down through depicting or mind mapping them, I tried to help my student, who is pre-intermediate level, to overcome the barrier and add changes to teaching as well as memorizing process. Therefore, this mini-study is going to explore how mind mapping can increase vocabulary recalling and comprehension.

My research questions are the following:

1. Does the mind mapping technique increase the word list?

2. Does mind mapping have a significant impact on learners' vocabulary learning?

LITERATURE REVIEW

Instructors use various ways in improving learners' L2 vocabulary acquisition. Teachers may provide the following to the learners: give full definitions, organize storytelling or sing songs with lyrics. Having made a deep research and analyzing articles and books there has been found a constructive correlation between strategies that are used in vocabulary expansion and learning consequences, Gu (2010) and scholars have researched the prior one's link with its' nature. Several researchers like Ulf-Schuetze, Landauer and Bjork say that repetition is the key to remember vocabulary (Ellis & Beaton, 1993). However, students find that by recalling words this process becomes rather boring and not fruitful (Li, Yang & Chen, 2010). In mastering learners' vocabulary it is vital to use additional procedures like highlighting the keywords (Lawson & Hogben, 1998).

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In creating mind maps people use thinking and learning procedures that are related directly to cognition. Mind mapping is a visual tool in creating which one can use symbols, various colors, numbers, and generate ideas or revise preceding topics. Buzan (1976) states that in the procedure of creating mind maps, individual utilize both sides of the brain which advances retentivity. Moreover, Brinkmann (2003) admits the design of mind maps plays a significant role in keeping the information in memory for a long time. Indeed, Buzan (2000) claims that individually made mind maps ease the understanding of the theme. Buzan (1993) believes that mind mapping gives a general key to open the capability of the cerebrum. Generating data through using colors, symbols and visualizations is similar to the cerebrums' process. This technique can lead a person to significant achievements.

Some advantages of mind mapping are (Adodo, 2013):

1. A teacher can use this technique as brainstorming within the group or individually;

2. With the help of this technique summarizing becomes a piece of cake;

3. It can be used as a Synthesizing tool to gather information from multiple sources;

4. To view the theme from different perspectives;

5. One can easily learn, revise and take useful notes;

6. The study becomes pointed, not just learning by heart.

Besides, as technology has become a crucial part of our life, mind maps can be created as digitally and in written form nowadays. However, in the past people were forced to have limitations as keeping scanned mind maps because the technology was not improved to save it digitally.

The routine of learning words or taking notes can be advanced by creating a mind map that improves not creativity but also critical thinking (Şeyihoğlu & Kartal, 2010). There are many positive sides of using Buzan's mind map and Appendix VI shows some of them (Tee, Yunos, Mohamad, Othman, Yee & Mohamad, 2012):

1. The learner can briefly take notes from the book;

2. Buzan mind mapping is fun and the learner unintentionally wants to study;

3. Students use both cores of the brain while creating the mind map (Adodo, 2013);

4. Learners improve long-term memory;

5. Recalling words become more interesting and effective;

6. The word list can be added in the process of revision.

As indicated by Nation (2001): "learning jargon is a total cycle and that it must be purposely instructed, learned, and reused. This is basic for a few reasons: 1) students need to experience the words in an assortment of rich settings, frequently requiring up to sixteen experiences 2) students memorize the word list, when they have manipulated them in different ways, so variety is essential for vocabulary teaching, and 3) learners forget words within the first twenty-four hours after class, so it is important to follow up a vocabulary lesson with homework that recycles the words" (p. 4). Also, mind maps are thought to be helpful items in teaching according to some researchers (Budd, 2003; Fiktorius, 2013; Hofland, 2007; Murley, 2007). Tee et al. (2014) declare that in Google service "mind mapping" request comes over 112,000,000 web searches which are not a little number.

Aforementioned, it is evident that people find the mind mapping technique engaging to use during the vocabulary learning procedure.

PARTICIPANT PROFILE

Many scholars believe that learning a culture of the second language plays crucial role in getting higher results in learning the target language. As stated by Kramsch (2008) the main aim of learning new language lays not only on teaching grammar rules but also opening the language from another side by teaching culture of the second language. Therefore, it is vital to know how to teach the

language from different perspectives like involving the student and showing how to use particular sentences or phrases in cultural context.

The impact of our culture on the education is rather significant than on the learning of second language. It should be noted that girls and women are especially under this influence when it comes to getting higher education. The reason for this is that the influences of parents' decision on marital status of their daughter. It plays major role in deciding women's' fate in the early age as they usually sacrifice their education devoting themselves to the family.

Consequently, it becomes very hard to get higher education in any sphere whether it is architecture, lawyer, diplomat and interpreter. This cause educational gap between genders in our society.

For this case study, I have chosen 1 participant who is my student for the past 2 years; she studies at school, 9th grade. Even though she studies at Russian school, her native language is Uzbek, she speaks Russian more fluently than Uzbek due to the fact that in her family Uzbek language is spoken rarely. Initially, her purpose of learning the English language was due to her interest in English culture which pushed her to study this language in depth and soon to apply for Bachelor's degree abroad. Her hobby, as I noticed, is reading books in Russian and in English, in other words, she is a bookaholic. The favorable genre of her is detective and science-fiction books.

Her personality type is extrovert and this is the reason why she prefers speaking and expressing her ideas out loud which makes her an active learner. Nowadays her English proficiency level is intermediate. But when she first came to me, her knowledge was not sufficient to learn the language; therefore, we started from the very beginning.

Through time she became self-confident and able to understand the basics of the language. Being her instructor was always a pleasure and I tried to make her use different skills to be a well-developed learner. The only problem is that she does not recall words, for that reason the student of mine finds it as not an interesting process. For this reason, she is the best choice to take her as a participant in this case study. During the lessons, I understood that the learner tends to memorize words better when I ask her to visualize them, to write down different related meanings, or associate them with the story that she had read recently. However, in her case learning words in a traditional way does not give fruitful results. So, from this experiment, we can conclude that she possesses short-term memory and the traditional way of teaching the vocabulary is not suitable for her.

In this case study, I will try to break down the barrier in learning vocabulary by using the mind mapping technique.

RESEARCH DESIGN

To begin collecting the necessary data, the researcher asked permission from the participant and gave the consent letter to sign to carry out the research (Appendix V). The respondent was instructed on the aim of the study and her role there.

Three instruments were used to collect the data:

1. Pre-interview and test exercise
2. Post-interview

The pre-interview was a researcher-made interview consisting of 8 questions. Each of the questions was devoted to vocabulary learning strategies, methods, and one of the questions intended to clarify whether Student A had any knowledge about mind mapping. This interview continued for 3 minutes (Appendix I).

After the treatment, having analyzed the necessary data, the participant was given a mind map with definitions (Appendix II). This training was intended to examine the participant's memory and the impact of the mind mapping technique on it. According to the interview the Student A had never used this method to learn the words. Afterward, the participant was given an exercise with the theme "Food

and diet" (similar word bank like in the pre-test) (Appendix III), mind map to fix the words. She was guided with the rules on how to complete the provided task.

Lastly, there was an organized post-interview to get the attitude towards the tasks whether they worked or not as well as mind mapping techniques (Appendix VI). Both pre and post-interviews were held in English and all materials were provided in the Appendix.

DATA COLLECTION AND FINDINGS

The data collection part turned out to be the most interesting as well as Byzantine. Since the research's target was to analyze whether mind mapping helps to memorize vocabulary for a long period, I started my research as soon as possible. To collect the necessary data I utilized pre-test and post-tests and interviews. As I started the research, the participant was asked to fill the consent form which gave me the right to record data. During the interview, the participant was asked several questions related to the topic. As the student had never experienced being in such situations, in the first part she was a little bit embarrassed. However, as the interview continued the student did not pay attention that the speech was being recorded and acted more loosely.

The first question was about whether the student memorized words by writing it several times. As expected, she rejected this strategy. She described the way she tries to remember the words, for example, she recalls the words a few times. But this method turned out to be ineffective because she did not possess a long-term memory which is the normal case nowadays. After, she responded about difficulties in learning vocabulary. She found that simply learning vocabulary with definitions not associating them with related words is complicated and boring process for her as this method is out-dated. Moreover, she found idioms to be the most difficult part of the vocabulary acquisition procedure.

To the next question about learning vocabulary through using relevant images, the participant answered that she prefers this technique and tries to utilize it as much as she could. Also, she added that she would like to change the learning of the word list interactively.

The last question was about her attitude toward mind mapping vocabulary learning, she responded that she had never used this technique in her academic learning process and she was open to trying this technique. According to her answers, it was clear that the participant had short-term memory which caused in her learning process difficulties, and that her style of vocabulary learning was not fruitful, unfortunately. This was the reason why the student had to broaden horizons and have a try to change her style of learning the words.

Right after the pre-interview, the participant was provided with a definition word list. She used this method to learn the words. After she was asked to write the words and she managed to write only 7 out of 15. That meant that she knew barely half of the words which she used in daily life, she explained it as a lack of knowledge and not knowing the usage of those words.

Completing this part, the learner was provided with an exercise which contained various tasks to read and write. First, she had to read, get familiarized with new words followed by pictures and examples. 10 minutes were given for this task after the student was instructed to go through the next tasks.

The participant had to fill the tables, gaps with relevant words. For these tasks, she kept returning to the word list as she forgot them systematically. Having finished the second exercise, she did it without checking the word bank. Afterward, she was asked to fill the mind maps to fix words in the memory. Fortunately, she managed to fill almost all of the blank spaces. Filling them up, she wrote some notes in the brackets that came to her mind which meant that the participant understood the vocabulary and was able to remember and associate them with related meanings.

She said that while doing the exercise she understood most of the definitions because of the examples and then she able to create a mind map that helped her to enhance her word bank. Moreover, she said that using the mind map is not a difficult task but interesting and engaging and added that in the future lessons she would use only this technique to remember the words as well as their definitions.

It can be concluded, that the mind mapping technique can help to boost and fix the background knowledge as well as creates links and imagery which would be imprinted in one's long-term memory.

CONCLUSION

The essential item of learning the language is thought to be Vocabulary (Li, Yang & Chen, 2010). As with the help of vocabulary can function the skills like reading, listening, speaking and writing. Learning vocabulary plays a crucial role in one's life; however, it is not an easy process. Every student has an opportunity to achieve high goals in the learning process. No one can predict what problems one will face during this period. There are so many cases where instructors and learners found different strategies to ease the teaching and learning process.

However, everyone is individual and needs special materials, tools to overcome their barriers. It is common knowledge that knowing only the rules of the English language will not lead to being a success.

This case study was based on Cognitive theory through identifying student's difficulties with learning the vocabulary, memory identification, and using mind mapping techniques in second language acquisition. Moreover, this study shows that the mind mapping technique helps to enhance students learning the word bank and have the image in the mind of the words through associating them. It can be highlighted that compared to the pre-test the word list improved which indicates that the mind mapping technique works and can be applied as a tool to learn new words and revise the old ones.

Understanding how to give a clear definition or association is claimed to be a significant skill in vocabulary learning. The current mini-research states that mind mapping has a notable influence on the vocabulary list. The impressions of the participant were the following: mind mapping improved her confidence in learning the language and motivated her to use this technique in her further studies. Undoubtedly, this research helped the learner to increase the word list.

It should be noted that mind mapping helps to open the creative sides of a person and push him to improve his innovative skills. Also, mind maps do not seem like a task that should be done with instructions but it rather seems to be a game or leisure activity, however, it is a technique that leads only to success in different spheres of learning.

My hypothesis has been proven through this case study. I identified improvement in the learner's vocabulary list. In my opinion, if the student will continue in this format she will achieve higher goals. Findings and beliefs of cognitivism about short-term memory are correct because we are all human beings and have the right to forgetting some information. But the solution to this problem should be found as soon as possible. As teachers play a major role in student's language learning development, they should know how to lead students, how to give proper further instructions, and how to deliver this information in order students could catch it. If learners want to speak fluently, write astonishing essays, understand what he is reading he should know more words and their meaning. If students want to increase their speaking or writing they should know more vocabulary and its meaning.

Creating mind maps help students to learn new words and revise them in an interesting and enjoyable atmosphere. In the educational process, the role of cognitive theory plays a crucial role. Through analyzing this theory and applying it in the practice I'm convinced that knowing about the intellectual development of the learner is the most important part. I'm going to research this mind mapping theme in deep and develop my own way of creating cognitive strategies to break problems faced by teachers and learners in second language acquisition.

RECOMMENDATIONS FOR FUTURE RESEARCH

After vocabulary learning, each lesson teacher should give time and let students draw or create in online applications (such as mindmeister.com, xmind.net) mind maps to reinforce the effectiveness of this technique. Following this procedure, students should be asked to make up a story using the words that the learner practiced in creating a mind map. Every student after using these procedures will have expanded vocabulary as well as practical utilization of these words in speaking or writing.

To enhance and get further results from the mind mapping technique, the systematic practice should be done and controlled by the teacher unless a student can memorize how to implement this technique.

LIMITATIONS

This study has potential limitations that need to be studied in future researches. As mind mapping strategy is not used in the curriculum of classrooms, it was difficult to find relevant studies. Other than that, since the world is facing such a hard pandemic period, the number of participants was shortened to a minimum. However, the involvement of more participants as well as more data collection should have been managed. These limitations serve as further aspects to be researcher in the further studies.

SUGGESTIONS FOR FURTHER RESEARCH

In the future research can analyze the followings:

1. The impact of using mind mapping technique in learning idioms and phrases;
2. The influence of mind mapping on different genders in learning vocabulary

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