

Review Article

Mind Mapping: An Effective Technique for EFL Students' Language Skills Improvement

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Abstract

To be successful in language learning and teaching as well as to advance language skills, one needs to utilize valuable and impactful language learning and teaching strategies. Language experts and pedagogues suggest variety of strategies which are essential for language skills improvement; one of these strategies is mind mapping. Since mind mapping activates both hemis of brain, it helps EFL learners to recall what they have learned. In addition, it can be used as an alternative medium for EFL teachers to deliver language contents. It plays greater role as well for the development of language skills. However, EFL students and teachers are not seen employing it during language classes. Hence, the objective of this article was to review and summarize the role of mind mapping so as to improve English language skills, particularly vocabulary, grammar and speaking skills. Secondary data from 20 published articles on the role of mind mapping on EFL students' language skill improvement were examined to get a better understanding on the issue. Narrative review was carried out. As the findings of the published articles indicated, mind mapping ignited students' language learning which consequently led for the enhancement of their language skills. Therefore, it is recommended for EFL students and EFL teachers to use mind mapping while learning and teaching EFL.

Keywords

Brain's Hemispheres, EFL Learning, Mind Mapping, Picturesque Diagram

1. Introduction

Language learning is the process which learners get and develop the target language skills and knowledge by using appropriate and helpful strategies [33]. Since language learning is a conscious way of bringing change regarding to the language, it requires EFL teachers and EFL learners' active use of appropriate materials and persistent investment of time. Even though Ur, P. attested personal practice as the most fundamental basis for language learning, language skills and knowledge improvement, deploying successful and impactful language teaching and learning strategies is believed to be decisive [42].

Learning English as a foreign language (EFL) has become compulsory in many countries since it is the tool that helps access knowledge and information in this globalized and technology dominated world. However, EFL teaching and learning is challenging, for students have limited access for it and are not motivated [19]. There are also other factors which affect EFL learning. Such as: fear of making mistakes, hesitating to involve in English clubs, nervousness and lack of investing time and money. Moreover, using inappropriate language teaching and learning strategies is the greatest obstacle for language learning, and it has undeniable impedi-

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ment for the development of one's language proficiency [38]. The most frequently used kind of language teaching and learning strategy by EFL teachers and students is linear listing. It is the practice of writing language contents on the board without using instructional media including images, lines, colours, symbols and mind mapping. This strategy (linearity) does not involve both sides of learners' brain instead only the left side [10], and this trend makes the right hemisphere of the brain to rest without functioning. Consequently, it leads language learners to get bored and uninterested in developing their proficiency.

Hence, teachers and learners have to be alert enough in using these strategies because unmediated language input is incomprehensible to EFL learners and results annulled language learning [42]. Therefore, teachers need to be effective in their language presentation, and students have to be active enough to support their language learning as well. According to Krashen, S., two techniques are significant to simplify and aid comprehension: using simple and less complex vocabularies and providing background information in the help of pictures [23].

Mind map is a picture and a picturesque graphic diagram which presents contents visually by incorporating colours, images, symbols and spatial arrangements of branches [35]. Moreover, according to Wu and Zheng, mind mapping is a visual tool which helps learners to organize, connect thoughts and ideas, and it is widely used in educations, businesses and personal development [45]. It has a huge important in learning English language [18] by providing a universal key to unlock the potential of the brain.

In addition, mind mapping stimulates learners' brain by appealing both the creative and logical side of the brain. According to Elkahlout, it utilizes both hemispheres of our brain to generate a full detailed image of the topic which accomplishes understanding [15]. Mind mapping uses visuals reminder: images, colours, lines, and sensory into a pattern from the ideas which are related which allows students to clarify their thoughts by categorizing and grouping into related ideas. Buzan as cited in [44], explained that mind mapping can additionally use the potential of the brain by articulating diverse thoughts in an imagery and different way, and increases productivity.

Furthermore, Wu and Zheng stated that mind mapping has roles in teaching, and it promotes creativity, learning ability and enhancing memory [45]. Futrell as cited in [44] mind mapping increase pupils' education speed and accuracy, and it also aids as an instruction strategy to endorse the expansion of teaching practice.

Likewise, mind mapping is an effective tool that aids schoolchildren to associate new information to their current knowledge [14]. In addition, the more students use mind mapping during learning the more easily they recover what they have learned (Buzan & Buzan as cited in [14]. On the other hand, mind mapping develop learners' multiple intelligences as well. Lupu, N. wrote that teachers can develop and

nurture students' verbal, logical, visual, and intrapersonal intelligences through mind mapping [27]. The technique engages children in fun, stimulating activities that will have multiple benefits for their personal development. It is believed that there are several students with different learning styles in schools. This technique enhances students' learning processes by combining their learning styles with dominant intelligences [46]. Since mind maps employ various skills; one or another form of multiple intelligences is fulfilled [34].

1.1. Vocabulary Teaching

Numerous definitions of vocabulary are given by different language experts. However, according to Ur, P., vocabulary is any single word, phrase, lexical chunk, idiomatical expression, phrasal verb or collocation which carries meaning and belongs to any language [43]. It is this tool which speakers and writers utilize in order to communicate and question ideas or thoughts. Therefore, vocabulary learning and development has a huge role for learners to communicate and have successful oral and written communications with others.

According to Wilkins as stated in [2] those who do not have enough cluster of vocabulary can convey nothing during communication, and even unable to communicate comprehensibly. Hence, EFL learners to be good at verbal communication, it is believed that they need to use effective vocabulary learning techniques. In addition, their EFL teachers need to acquire and employ effective vocabulary delivery techniques which would help learners to internalise these vocabularies [26]. Some of the classroom techniques to teach vocabularies, according to Nattinger as stated in [32], are word morphology, mnemonic devices, total physical response, and loci. According to the writer loci techniques are mnemonic devices which are helpful for learners to internalise vocabularies through association. Through this technique, students associate words or new vocabularies with visual images, rooms or any accessible tools which support them to recall during authentic social communications. Akar, N. also suggests that visual images including mind map, physical objects and pictures are crucially supportive for our memory to remember things easily [2]. In addition, Allen, V. indicates that since visual aids show scenes or situations, and students see while learning the target vocabulary, they would easily associate the lessons and recall the vocabulary simply [4].

1.2. Grammar Teaching

Larsen-Freeman, D. states grammar as an area of knowledge which is accurate with one right answer, order of words within sentences, and arbitrary rules of a language [25]. In addition, Folse, K. defines that grammar is the foundation of a language which holds building blocks (vocabularies) within the language together [16]. Hence, knowledge of grammar enables learners to use linguistic patterns and

structures accurately, meaningfully and appropriately.

These days, there are adequate grammar teaching and learning techniques and approaches which EFL learners use to get armed in grammar. One of the approaches is the connectionist approach. According to Mystkowska-Wiertelak and Pawlak, connectionism which originally known as parallel distributed processing (PDP) is the approach which makes learners learn and understand ideas or thoughts through association [29]. Moreover, the approach intensely supports learners' brain to connect morphological, phonological, semantic, and syntactical units with any other outside objects, pictures or images. Therefore, in order to support learners learn grammar through connections and to reduce challenges (which EFL learners face while learning grammar), mind mapping and mind map would be possibly suitable and could be used by teachers and students.

Mind map is a picture and according to Celce-Murcia and Hilles pictures and images are versatile and effective resources and tools for presentation of grammar contents: yes/no questions [11]. Therefore, these tools and materials could be utilized in various grammar lessons to enhance language learning practices.

1.3. Speaking Skill Teaching

Speaking skill is of the two of productive skills which speakers use during face to face, teleconference, telephone communications. The skill employs words or symbols to communicate thoughts or opinions with audiences. Thus, many EFL learners consider the mastery of speaking skills in English is the priority, and think that their language learning depends on the basis of how well they speak during communication [17]. Besides, these authors pinpoint that teachers, students and materials are the three key factors for positive and fruitful speaking skill development. So, EFL teachers need to do more to use effective materials and techniques so as to help their students to develop the skill. According to Buzan as stated in [21] although plenty of techniques are there to facilitate speaking skills teaching and learning, one of them is mind mapping. The technique is a visual diagram which aids learners to generate and organize ideas that can be used during oral communications. Since the technique illustrates the relationship of words, phrases or clauses diagrammatically, students can easily remember and utilize those words, phrases, and clauses during speaking.

Hence, EFL learning requires learners to be acquainted with enough cluster of vocabulary that they can use in their oral and written communication efficiently. Furthermore, they need good linguistic competence to communicate accurately and effectively. Moreover, speaking skill is crucial for their successful language learning since it lays the basement for reading and writing skills. Therefore, the overall objective of this review article was to examine the role of mind mapping for EFL students' English language skills improvement. Specifically it was aimed to:

1. examine the contribution of mind mapping for EFL students' vocabulary mastery.
2. assess the role of mind mapping for EFL students' grammar skill improvement.
3. assess the impact of mind mapping for EFL students' speaking skill improvement.

2. Methods and Materials

To carry out the review process manageably with proper framework, it was obligatory to choose one of the kinds of review articles. To do so, narrative kind of review article was chosen. According to Sukhera, narrative review article is the type of literature review which collects and synthesises the findings and conclusions of papers which are done on similar research thematic areas [39]. It helps reviewers to describe and summarize the current status of the selected topic and provide insights about the topic concisely. Moreover, [12] stated that narrative review is essential to address numerous questions in more subjective manner.

Thus, 20 published articles on the roles of mind mapping for the improvement of EFL vocabulary mastery (9), grammar skill (7) and speaking skills (4) were chosen by the reviewers as sources of data.

3. Discussion

3.1. Theme 1: Mind Map and Mind Mapping for Vocabulary Mastery

The first study which was done on the role of mind mapping for vocabulary mastery was conducted by [37]. The study was quasi experimental in design, and mainly used grade seven students as samples. The researcher used questionnaire and tests to gather data from the participants. 120 words related questions were prepared, and administered as pre-test. As the findings of the study indicate, 27 students out of 35 scored below 60 in their pre-test, and the average score of the students on pre-test was 50; however, after the students had gained vocabulary treatment by using mind mapping technique, they showed relatively better progress in their mastery of vocabulary. In their post-test, there were no students who scored less than 60. Around 33 students scored greater than 60, and the average score of the students was 82. From the study, we have understood that students' vocabulary mastery in post-test was higher than in the pre-test. Moreover, the researcher collected data from the students through questionnaire, and 70% of the students replied that they easily understood vocabulary contents which were delivered through mind mapping. Finally, the study concluded that mind mapping is a one alternative which is significantly decisive for the delivery of vocabulary contents for learners.

On the other hand, [22] conducted a study on the importance of mind mapping for mastery of Coronavirus relat-

ed vocabularies in China during the outbreak of the disease. The researcher used online students as samples, and concluded that mind mapping delivered substantial implications for vocabulary learning especially when people get bored and feel lonely. As it is shown by the researcher, mind mapping can possibly change the dull and monotone trait of contents into colourful, attractive and memorable diagram which will never be forgotten, and impacts students' vocabulary comprehension positively.

The other mind mapping and vocabulary related study was done by [41]. This quasi experimental study was conducted on 62 Iranian intermediate EFL male students. The researcher used tests as data gathering instruments which were held before and after the treatment was given. As the researcher find out, students who learned vocabularies through mind mapping outscore the other students who learned vocabularies through concept mapping. In addition, the researcher indicated in her finding that mind mapping strategy motivates learners to learn vocabularies interestingly. Hence, the researcher concluded that mind mapping in the process of delivering vocabularies can improve and boost male students' eagerness and participation during vocabulary learning because it removes verbal modalities during the process of vocabulary learning.

Furthermore, mind mapping and vocabulary connected study was conducted by [7]. They did a quasi-experimental research on 38 students on the use of mind mapping technique in increasing students' vocabulary list. The researchers used tests as data gathering instruments. In their pre-test, they found out that 20 out of 38 students had low band marks while the other 18 students get satisfactory band marks. Nevertheless, after the post-test, only 6 of 38 students get low band marks, but 12, 15, and 5 students got satisfactory, good and excellent band marks respectively. This illustrates that the students gained better score in post-test as compared to the score of pre-test because of mind mapping. In addition, the students were seen motivated and confident of listing vocabularies though mind mapping. Accordingly, the researchers concluded that mind mapping has essential impact on students' performance of vocabulary list, and suggest EFL teachers to employ mind mapping during their vocabulary teachings.

Additionally, Sahrawis' article which focused on the effectiveness of mind mapping for teaching vocabulary to the eighth grade students was reviewed to examine its findings [36]. The study was a pre-experimental study which involved 112 grade eight students as its population. Like any other studies which were reviewed above, tests were used as data gathering instruments. As the researcher finds out during pre-test phase, the average score of the students in pre-test is 46.28 which most students get low score. However, after the students took post-test, the average score of the students is 86.14, and it indicates that they scored more than the average in pre-test and proved that mind mapping is effective to improve students' vocabulary mastery. Moreover, as the study

finds out the deployment of mind mapping during vocabulary delivery helped students to understand the meanings of even unfamiliar words, and they were influenced by the process of teaching vocabularies through mind mapping technique.

The other study which was reviewed is entitled as "The Effect of Mind Mapping on Vocabulary Learning and Retention," and done by [20]. The study was conducted on 40 Iranian male first-grader high school students. The researchers used quasi-experimental design to properly test the independent variable. Besides, the researchers utilized pre and post-tests to collect data from the participants. As the score of the post-test show, the students in the experimental group who received the treatment through mind mapping outperformed the students in the control group in their post-test results. Additionally, the study found out that mind mapping helped the students to retain English vocabulary very strongly because of the visual appeal they got while learning the vocabs through mind mapping. Consequently, they concluded that the pictorial-verbal combination technique facilitated students to utilize both right and left hemispheres of their brain, aided learners to store the vocabularies in their long term memory, and also assisted the experimental group students to notice the semantic relationships between words. Additionally, the researchers presented the pedagogical advantages of mind mapping for teachers. The technique is noteworthy for language teachers to consider it as an alternative vocabulary teaching technique.

The other article which was reviewed was conducted by [3] focuses on the effect of mind mapping strategy on L2 vocabulary learning. The researcher did it in one of the universities found in Saudi Arabia. The study involved fifty female students from the English Language centre at Taibah University. Two tests were used as data gathering instruments to collect data from the students. As the t-test analysis on post-test proves, the experimental group students gained a significant improvement in their L2 vocabulary learning because of mind mapping strategy compared to control group students who learned L2 vocabulary without mind mapping. Moreover, during the six weeks treatment, the students in the experimental group gained significant development in vocabulary. Even though the researcher provided many findings, some of them are: mind mapping provides relevance for L2 learners to increase their vocabulary knowledge; the strategy helps the learners to increase their motivation of learning L2 vocabularies, and increases experimental group students' vocabulary learning by drawing their own mind maps during lessons.

The other article which the reviewers reviewed was Wu and Zheng's research which is entitled as "Using Mind Mapping for Vocabulary Teaching [45]." The study was done in one of vocational colleges in China. According to the paper, mind mapping strategy improves the efficiency of students' vocabulary memory especially long term memory. Moreover, students were benefitted from the strategy in expanding their

capacity of communicating by using the meanings of the words they were taught since mind mapping has a better effect on word meanings. Additionally, as the researcher indicated, mind mapping has a positive impact on improving English vocabulary autonomous learning because every student draws his/her own mind map. In addition, by using mind mapping during vocabulary learning, students could strengthen their logical vocabulary memory and this aids them to embody new words with old ones. On the other hand, the strategy supported learners to construct a memory network of vocabs which helped them to master vocabulary in a more complete and coherent way. In addition, mind mapping, reinforced students' cognition and thinking patterns and promote their vocabulary understanding and memorizing. Additionally, the effective combination of mind mapping and vocabulary learning can improve the traditional vocabulary teaching in higher vocational colleges of China.

The last research which was reviewed for the better understanding of mind mapping for the improvement of vocabulary improvement was conducted by [6]. The study is entitled as "Mind Maps Aid EFL Students' Vocabulary Building." and done in Amman, Jordan. According to the study, students who learned vocabulary through mind mapping gained more confidence in using the words after using mind maps. In addition, the strategy provided them an unusual way to recall new words during communication by replacing rote memorization. Furthermore, the technique helped creative students to create interesting and stimulating mind maps which can ease their problems in acquiring and restoring new words for a long time. Finally, the study concludes that learning through mind mapping helps students to study contemporary language at all times and inspires them to practice it in their daily lives.

In general, these studies revealed that mind mapping plays significant role in learners' mastery of vocabulary, comprehension, motivation, engagement and retention and recalling learnt words. Thus, mind mapping can be a good vocabulary teaching and learning strategy that EFL teachers and students should consider in their EFL classes.

3.2. Theme 2: Mind Map and Mind Mapping for Grammar Skill Improvement

Plenty of studies were done abroad about the role of mind mapping for grammar competence learning and improvement. The first study which was reviewed had been done by [31]. The researcher majorly focused on digital mind mapping (DMM) which weren't handmade on pieces of paper, but used mind mapping made on mobile or computer and shared through WhatsApp and Instagram. The researcher used a quantitative approach to carry out the study effectively, and analysed data which were collected through tests by using t-test. According to the result, the mean of students on their post-test (11.375) result was greater than the mean of students on their pre-test (7.625). In addition, based on the

finding, digital mind mapping has a potential to improve students' grammar competence, and students has developed their understanding of parts of speech. Moreover, DMM supported learners to categorise ideas and recognise the connection among ideas.

The other study which was reviewed had been done in Vietnam at Thai Nguyen University of Economics and Business Administration by [24]. The study involved 37 accounting students. The researchers applied both quantitative and qualitative approaches and experimental study. Questionnaire and tests were used as data gathering instruments. According to the results obtained through questionnaire, nearly all of the students who were asked to respond about mind mapping agreed that the technique was important for their grammar learning. Moreover, even though some of the participants raised a few concerns, majority of the students had positive attitude and perceptions towards the use of mind mapping in their grammar learning, and witnessed that the technique reinforced them to remember grammar, develop their grammar competence, and understand grammar particles. Since mind mapping provides freedom for students to create their own personal mind map, the students found it memorable, and interesting which let them do in group cooperatively and collaboratively. Additionally, it was witnessed that students performed well in grammar because of the application of mind mapping in their grammar lessons.

On the other hand, the reviewers considered reviewing the study which was conducted by [5] in Indonesia. The researchers used true-experimental design and chiefly focused on the effect of using mind mapping technique towards students' ability in using in causative verbs. They involved 53 grade eleven students who learned at Public Senior High School. The data were gathered through pre-test and post-test. After the experimental group students got the lesson through mind mapping frequently, they got better result than the control group students who were taught causative verbs through lecturing technique. From these findings, the researchers concluded that the technique has significant inspiration towards students' ability in using causative verbs.

Likewise, Wang, L. did a study on the application of mind map in English grammar teaching, and it was used for review [44]. The study used Nanchang Normal University which is found in China as its setting. After collecting and analysing data, the researcher found out that the technique is not only a grammar learning tool for students but also it is an alternative tool for EFL teachers for language teaching. Moreover, the researcher recommended that EFL teachers may use it for different purposes from preparing lesson plans to implementing lesson plans, and from enriching their teaching skills to perfect their teaching skills. Besides, the researcher pinpointed that since mind map uses lines and colours, EFL learners can be easily made think visually and can have deep understanding about the knowledge points through stereoscopic connection. Subsequently, as it is concluded in the study, the application of mind mapping in English grammar

can boost the students' initiative; promote the students' interest in learning, the efficiency of learning and the ability of grasping grammar knowledge.

Moreover, Chankasorn, Sunthornklam and Chamnanna-rong conducted an experimental study on "Development of Grammatical Knowledge: Using Mind Map or Inductive Instruction?" in Thailand [13]. The researchers used tests and satisfaction questionnaire to collect data from participants, and compared academic achievements of grammatical knowledge. The researchers taught grammar for experimental group students through mind map and control group students through inductive instruction without mind map. After that they did both descriptive statistics (mean scores and standard deviations), and inferential statistics (independent samples t-tests) were employed to analyse the quantitative data collected in the study. According to the data it was found out that the experimental group students who were taught grammar through mind mapping improved their grammatical knowledge more than the control group participants at the .01 significance level. As well, the experimental group participants were significantly more satisfied with the management of the instructional activities to develop grammatical knowledge than the control group participants at the .01 significance level.

Penultimately, the reviewers attempted to review an experimental study which was conducted by [8] in Jordan. Their study is entitled as "Do Mind Maps Really Catalyse EFL Grammar Learning?" The study chiefly focused on one of grammar particles which are English conjunctions. The researchers utilized merely post-test to collect from the participants, and the findings indicated that the students who were in the experimental group and taught the four kinds of conjunctions through mind mapping scored significantly higher than the students who were in the control group and taught the same conjunctions without mind mapping. At last, the researchers provided the pedagogical advantages of mind mapping for both EFL students and teachers, and suggested that the tool to gain ultimate attention from EFL learners and EFL teachers during grammar teaching and learning.

Finally, the last article which the reviewers observed was conducted by [30]. The study is entitled as "The Effect of Using Mind Mapping Technique on Non-English Major Students' Grammar Achievement." It used Dong Nai Technology University one of Vietnams' universities as its setting. The researcher utilized 70 freshmen and sophomores non-English major students who were enrolled in a grammar course as participants. Both pre-test and post-test were used to collect data from those participants so as to find out the effect of mind mapping and mind map on their grammar achievement. In the pre-test, the mean score of the experimental group students and the control group students were 55.7 and 57.9 respectively. Nevertheless, after the experimental group students were taught grammar through mind map, they were tested the second test and scored a mean post-test score of 70.5. However, the control group students

who learned grammar without mind map scored 61.2 of post-test mean score. Therefore, it can be understood that the utilization of mind mapping technique during grammar learning significantly developed students' grammar achievement because the mean post-test score of the experimental group ($M = 70.5$) was significantly higher than that of the control group ($M = 61.2$).

Generally, these studies remarked that mind mapping helped students develop their grammar competence. In addition, it played vital role in improving students' logical thinking skills, skills in categorizing ideas and making connections among ideas. It also fostered collaboration among learners and made their learning more interesting and memorable. Hence, mind mapping can be considered as an alternative grammar teaching and learning strategy in EFL contexts.

3.3. Theme 3: Mind Map and Mind Mapping for Speaking Skill Improvement

The first speaking related article which the reviewers attempted to review was Susilawati's, which is about the effect of using mind mapping technique towards improving grade two students' speaking ability [40]. The researcher used a quasi-experimental design in order to do the study manageably. Both pre-test and post-test were the means of data gathering instruments, and 40 students were involved in the study. After collecting the data through tests, the researcher used independent sample t-test to analyse. Hence, the result of the experimental group students indicated that 5.5 and 11.5 were the lowest and the highest scores respectively. On the other hand, 5 and 8.5 were the lowest and highest scores of the control group students who were taught speaking without using mind mapping. It shows that the students did not speak well in describing the picture. In the post-test, the experimental group students obtained 11.5 as the lowest score and 15.5 as the highest score. While the result of post-test in control class shows that the lowest score was 8.5 and the highest score was 11.5. This illustrates that there was improvement in students speaking ability. Accordingly, the researcher concluded that mind mapping increased students' grammar. Simultaneously they were able to speak English without too much pauses, and with little grammatical errors during and after treatment. In addition, they increased their fluency, and the technique enabled them to plan and deliver their speech confidently. In conclusion, the researcher indicates that mind mapping technique has significant effect on the students' speaking skill, pronunciation, grammar, fluency, and vocabulary.

The other research which the reviewers reviewed was about whether mind mapping technique could enhance students ability in speaking report text or not, and was conducted by [28]. The researcher used twenty eight students to participate in the study. Data were collected through pre-test, formative test and observation. Having said that mind mapping as a teaching instruc-

tional media made learning activities interest arousal and got easy for learners. Moreover, the researcher indicates that mind mapping made students eager to speak a report text, and improved students' speaking of a report.

In addition, Afriansyah, I. did an experimental study on the effectiveness of mind mapping technique to teach students' speaking ability, and it was considered for review [1]. The researcher used a one group pre-test and post-test design. Additionally, cluster random sampling was utilized to choose 36 students as samples from the total population. The treatment was given three times by using the mind mapping technique. As the result from the pre-test indicated, none of the sample scored a result which was categorized as either good or very good. Nevertheless, most of them were poor. According to the researcher, the lowest score in the pre-test was 5 while the highest score was 14 with the mean score of 8.9. However, after the students were taught speaking lessons through mind mapping technique, significant improvement was observed in the post-test. 3 students scored poor, 25 students gained fair, 4 students scored a result which was categorized as good and 1 student was categorized as very good. From the data which were obtained through post-test, the researcher concluded that the technique brought significant effect on students' ability. In addition, as the mean score of post-test indicated (13.3) it was higher than the mean score of pre-test (8.9). This showed that the implementation of mind mapping technique while teaching speaking ability can significantly improve students' speaking ability.

Bsharat, T. and Dweikat, K. did a qualitative study in Palestine on the perspectives of EFL teachers towards utilizing a mapping strategy for developing students' speaking skills [9]. The researchers used semi-structured interview and collected data from five teachers, and used thematic analysis to analyse the data. As the findings of the study demonstrated, the technique influenced students' speaking skill positively.

Generally, the studies showed that the strategy had positive impact on students speaking skill. It helped learners improve their pronunciation, accuracy, fluency and vocabulary. Moreover, it made students eager to speak and activities more interesting. Therefore, mind mapping can be considered as a strategy in teaching and learning EFL speaking.

4. Conclusion

In nutshell, the findings obtained from the reviewed articles imply that aiding vocabulary, grammar and speaking classes with the picturesque diagram technique - mind mapping greatly benefits EFL learners in order to improve their language skills. This alternative language teaching and learning strategy can significantly be presented as the most interesting and motivating language teaching media. In addition, the findings of the articles pave the way for indigenous scholars and language researchers to give ultimate attention for the technique. Finally, the reviewers recommend researchers and practitioners to do further studies about mind

mapping for the development of English language skills.

5. Limitation

In this review, we have reviewed published articles available online and the number of articles for each theme varies. In addition, no local studies have been reviewed because they are unavailable online as far as the reviewers' knowledge is concerned.

Abbreviations

EFL	English as a Foreign Language
DMM	Digital Mind Mapping
Hemis	Hemispheres

Author Contributions

Getaneh Berta: Investigation, Writing – original draft, Writing – review & editing

Aster Mulat: Data curation, Investigation, Validation, Writing – review & editing

Conflicts of Interest

The authors declare no conflicts of interest.

References

- [1] Afriansyah, I. (Anon). THE EFFECTIVENESS OF MIND MAPPING TECHNIQUE TO TEACH STUDENTS' SPEAKING ABILITY. *Journal of English Language Learning*, 1-7. <http://dx.doi.org/10.31949/jll.v3i.1397>
- [2] Akar, N. (2010). *Vocabulary: Bridging the Gap between Theory and Practice*. Ankara: EDM.
- [3] Alahmadi, N. (2020). The Effect of the Mind Mapping Strategy on the L2 Vocabulary Learning of Saudi Learners. *Education and Linguistics Research*, 54-65. <https://doi.org/10.5296/elr.v6i1.16425>
- [4] Allen, V. (1983). *Techniques in Teaching Vocabulary*. New York: Oxford University Press.
- [5] Almubarak, B. & Handayani, T. (2018). The Effect of Using Mind Mapping Technique towards Students' Ability in Using Causative Verbs. *Journal of Research & Method in Education*, 60-64. <https://doi.org/10.9790/7388-0802066064>
- [6] AlSaleem, B. (2019). Mind Maps Aid EFL Students' Vocabulary Building. *Asian Social Science*, 153-158. <https://doi.org/10.5539/ass.v15n7p153>
- [7] Aziz, A. & Yamat, H. (2016). THE USE OF MIND MAPPING TECHNIQUE IN INCREASING STUDENTS' VOCABULARY LIST. *Journal of Education and Social Sciences*, 105-112.

- [8] Bataineh, R. & Al-Majali, H. (2023). Do Mind Maps Really Catalyze EFL Grammar Learning? Conjunction as a Case. *International Journal of Language Education*, 633-642. <https://doi.org/10.26858/ijole.v7i4.36393>
- [9] Bsharat, T. & Dweikat, K. (2023). Influence of Mapping Strategy on Students' Speaking Skills from the English Language Teachers' Perspectives. *ISRG Journal of Arts, Humanities and Social Sciences*, 258-262. <https://isrgpublishers.com/isrgjahas>
- [10] Buzan, T. (1984). *Use Your Head*. London: Guild Publishing.
- [11] Celce-Murcia, M. & Hilles, S. (1988). *Techniques and Resources in Teaching Grammar*. Hong Kong: Oxford University Press.
- [12] Chaney, M. (2021). So You Want to Write a Narrative Review Article? *Journal of Cardiothoracic and Vascular Anesthesia*, 3046. <https://doi.org/10.1053/j.jvca.2021.06.017>
- [13] Chankasorn, A., Sunthornklam, P. & Chamnannarong, C. (2023). Development of Grammatical Knowledge: Using Mind Map or Inductive Instruction? *Research Papers in Education*, 132-139.
- [14] Cheng, S., Li, D., Lui, D. & Pua, C. (Anon). *Using Mind-mapping as a Tool to Teach English Vocabulary for the Elementary Students*. Anon: Anon.
- [15] Elkahlout, A. (2014). *The Effect of Using The Mind Mapping Technique on The Mastery of Grammar among Tenth Graders in Gaza Governorates*. Gaza: Al Azhar University.
- [16] Folse, K. (2009). *Keys to Teaching Grammar to English Language Learners*. United States of America: University of Michigan Press.
- [17] Goh, C. & Burns, A. (2012). *Teaching Speaking: A Holistic Approach*. United States of America: Cambridge University Press.
- [18] Harida, E. (2015). USING MIND MAPPING TECHNIQUE TO TEACH VOCABULARY. *English Education*, 02. <https://doi.org/10.24952/ee.v3i01.1279>
- [19] Hasanah, N. & Utami, P. T. (2019). Emerging challenges of teaching English in non-native English-speaking countries: Teachers' view. *English Language Teaching Education Journal*, 2(3), 112- 120.
- [20] Heidar, A. & Karimi, L. (2015). The Effect of Mind Mapping on Vocabulary Learning and Retention. *International Journal of Educational Investigations*, 54-70.
- [21] Hoa, P. & Trang, N. (2020). MIND MAPS IN EFL SPEAKING CLASSES. *VNU Journal of Foreign Studies*, 177. <https://doi.org/10.25073/2525-2445/vnufs.4637>
- [22] Jiang, Y. (2020). Application of the Mind Map in Learning English Vocabulary. *Open Access Library Journal*, 3-4. <https://doi.org/10.4236/oalib.1106484>
- [23] Krashen, S. (1989). *Language Acquisition and Language Education*. London: Prentice Hall International.
- [24] Lan, D. & Van, D. (2023). THE EFFECTIVENESS OF USING MINDMAP IN TEACHING ENGLISH GRAMMAR. *IJARW*, 1-5.
- [25] Larsen-Freeman, D. (anon). *Teaching Language: from Grammar to Grammmaring*. anon: Newbury House.
- [26] Linse, C. (2005). *Practical English Language Teaching: Young Learners*. New York: McGraw-Hill Companies.
- [27] Lupu, N. (2013, October 24). eLearning Industry. Retrieved May Tuesday, 2024, from 4 Fun and Creative Mind Maps to Develop Kids' Multiple Intelligences: <https://elearningindustry.com/4-fun-and-creative-mind-maps-to-develop-kids-multiple-intelligences>
- [28] Murni, F. (2017). USING MIND MAPPING ENHANCES STUDENTS' ABILITY IN SPEAKING REPORT TEXT. *Empowering Local Wisdom on Education for Global Issue* (pp. 183-192). Batusangkar: 2nd International Seminar on Education 2017.
- [29] Mystkowska-Wiertelak, A. & Pawlak, M. (2012). *Production-Oriented and Comprehension-Based Grammar Teaching in the Foreign Language Classroom*. Berlin: Springer.
- [30] Ngoc, N. (2023). The Effect of Using Mind Mapping Technique on Non-English Major Students' Grammar Achievement at Dong Nai Technology University. *Journal of English Language Teaching and Applied Linguistics*, 90-95. <https://doi.org/10.32996/jeltal>
- [31] Normawati, A. (2020). Digital Mind-Mapping to Improve Learners' Grammar Competence. *Education and Linguistics Knowledge*, 53-61. <https://doi.org/10.32503/edulink.v2i2.1189>
- [32] Nunan, D. (1991). *Language Teaching Methodology*. Sydney: Prentice Hall.
- [33] Nuriska, S. (2021). *Learning English as a Foreign Language*. Institut Teknologi Sepuluh Nopember (ITS) (p. 02). Indonesia: ResearchGate.
- [34] Reyes, S. & Cerda, P. (2011). *Mind Maps in Language Teaching*. Valdivia: Universidad Austral de Chile.
- [35] Rustler, F. (2012). *Mind Mapping for Dummies*. West Sussex: John Wiley & Sons.
- [36] Sahrawi. (2013). THE EFFECTIVENESS OF MIND MAPPING FOR TEACHING VOCABULARY TO THE EIGHTH GRADE STUDENTS OF SMP NEGERI 3 SUNGAI KAKAP IN ACADEMIC YEAR 2012/2013. *Jurnal Pendidikan Bahasa*, 236-245. <https://doi.org/10.31571/bahasa.v2i2.246>
- [37] Samhudi, S. (Anon). *The Use Of Mind Mapping Technique*. Anon: Anon.
- [38] Schleppegrell, M. (1988). *Language Learning Strategies*. Washington DC: Center for Applied Linguistics.
- [39] Sukhera, J. (2022, August 14). *National Library Medicine*. Retrieved April Monday, 2024, from Narrative Reviews: Flexible, Rigorous, and Practical: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC9380636/>

- [40] Susilawati, R. (Anon). THE EFFECT OF USING MIND MAPPING TECHNIQUE TOWARDS STUDENTS' SPEAKING SKILL AT THE SECOND GRADERS OF SMPN 30 MUARO JAMBI. Indonesia: University of Jambi.
- [41] Tarkashvand, Z. (2015). Male Learners' Vocabulary Achievements through Concep Mapping and Mind Mapping: Differences and Similarities. *Educational Research and Reviews*, 790-796. <https://doi.org/10.5897/ERR2015/2158>
- [42] Ur, P. (2009). *A Course in Language Teaching*. Cambridge: Cambridge University Press.
- [43] Ur, P. (2012). *Vocabulary Activities*. United Kingdom: Cambridge University Press.
- [44] Wang, L. (2019). Research on the Application of the Mind Map in English Grammar Teaching. *Theory and Practice in Language Studies*, 991-994.
- [45] Wu, W. & Zheng, W. (2023). Using Mind Mapping for English Vocabulary Teaching. *English Language Teaching*, 44. <https://doi.org/10.5539/elt.v16n5p42>
- [46] Yavich, R. & Rotnitsky, I. (2020). Multiple Intelligences and Success in School Studies. *International Journal of Higher Education*, 107. <https://doi.org/10.5430/ijhe.v9n6p107>

Research Fields

Getaneh Berta: English language teaching, English language learning, Reflective Teaching, Language Assessment, Language Test Preparation, Classroom Questioning in Language Teaching

Aster Mulat: English Language Teaching Techniques, English Language Learning Techniques, Classroom management, Assessment, Language Teaching Material Preparation, Researching