Creative Approach in Teaching CEFR Reading Comprehension Using Bubble Map and Tree Map Method

Shanthini Selvarajasingam[1], Subadrah Madhawa Nair[1&2], & Walton Wider[3]

[1] Faculty of Education and Liberal Studies, City University Malaysia, Petaling Jaya, Selangor, Malaysia

[2] Faculty of Education & Humanities, UNITAR International University, Kelana Jaya, Selangor, Malaysia

[3] Faculty of Business and Communications, INTI International University, Nilai, Negeri Sembilan, Malaysia

Correspondence: Walton Wider, Faculty of Business and Communications, INTI International University, Nilai, Negeri Sembilan, Malaysia. Email: walton.wider@newinti.edu.my

Abstract

In Malaysian secondary schools, the dynamic tool of teaching CEFR reading comprehension is to give students a greater exposure and increase their motivation in conducive learning environment. The topmost objective of this study is to investigate whether the use of Bubble Map and Tree Map method improves students' learning of open ended and cloze test questions in the CEFR reading comprehension framework. For this purpose, the researcher employed a quasi-experimental design with a sample of 105 Form One students (13 years old) from three different schools (school A, B and C) from Petaling Jaya, Selangor. Three groups of students were taken as intact groups to fulfill the requirement of this study. All the three groups were comprised with equal participants (35 students in each group). The Experimental Group 1 (EG1) from school A was taught using Bubble Map, Experimental Group 2 (EG2) from school B was taught using Tree Map and the Control Group (CG) from school C was taught using conventional method. In order to collect the data, the researcher administered pre-test and post-test (instruments for this study). First, the quantitative data was analyzed using MANCOVA test and Tukey HSD (SPSS program for Windows version 26). The findings from the MANCOVA test demonstrated that EG1 (using Bubble Map) significantly outperformed EG2 and CG in answering open ended comprehension questions and the cloze test questions. The results of Tukey HSD also indicated that EG2 (using Tree Map) performed significantly better than CG (using conventional method) in answering the open ended and the close test comprehension questions. This study has crucial pedagogical implication because it revealed that utilizing Bubble Map and Tree Map methods can enhance students CEFR reading comprehension. As such, teachers can use Bubble Map and Tree Map method as an alternative method to teach CEFR reading comprehension in the ESL classroom.

Keywords: i-Think mind maps, Bubble Map, Tree Map, Form One students, ESL comprehension, education policy

1. Introduction

1.1 Background of the Study

In this 21st century of millennium educational challenge, the world of academic related to reading had been discussed. Reading is a multifaceted process of knowledge that can be foster as an essential skill in the field of success among students in today's higher education system. In the line with this, Lim et. al. (2018), believed that one of the most important skills for learning and mastering a language is reading. Similarly, reading is likely the most important receptive skill since it is a powerful skill that helps readers gain knowledge, understanding and perspective (Tiing and Said, 2019). Some people refer reading as the window to the world of knowledge. To understand the reading text, reading comprehension takes place when a reader is able to read the text and helped them to make inferences as well as grasp the important information. Students must understand the reading text they are exposed to answer some of the questions in order to demonstrate their understanding of the text (Nurjanah, 2018). Similarly, Alowalid et. al. (2018) discerned that reading comprehension could be an ability of utilizing handful information of the text and understand the gist of the text precisely. In addition, it is essential to provide students with motivation on what they have read and support them by connecting the information towards more significant and glorious direction of learning reading comprehension.

The students' knowledge and understanding in language learning are needed desperately so that the quality standard of reading comprehension improves. Ameyaw and Anto (2018) pointed out that to develop strong reading skills, students should be fortified to instill the spirit of reading in a correct way from the optional level to the higher level. In order to rise the concern on the quality of CEFR reading comprehension in the teaching and learning process, teachers need to be directed into this world of education. Hence, Bubble Map and Tree Map methods are seen as a modern educational tool to build a greater mind among teachers and students to inculcate better quality of CEFR reading comprehension. Based on these grounds, the Malaysian Ministry of Education has worked together with the international standard to adopt the Common European Framework Reference for Language (CEFR) as a benchmark to target students' performance. Delfi (2018) stressed that utilizing mind mapping method can help students to organise, internalise and recall the material

they read more easily, which will improve their reading comprehension. Therefore, to address the concern about the standard of CEFR reading comprehension, Bubble Map and Tree Map methods is an innovative alternative method to strengthen students' ESL reading comprehension in Malaysia.

1.2 Problem Statement

There were a number of prominent factors which caused problems in CEFR reading comprehension in teaching reading comprehension using translation method (using Malay language). Translation has been overlooked as a needed skill to help students understand better in the teaching of reading comprehension (Boshrabadi, 2014). Some teachers use Malay language because they do not have a clue on what is the best method to deal with when come to teaching reading comprehension in ESL classroom. Rahemi et al. (2013) asserted that students' ability for interpretation of text is strongly influenced by their reading comprehension skills. Teachers believe that students comprehend better on reading text when they translate in Malay language. When the exposure of translation become greater, students have difficulty in grazing the grammar rules and sentence structure in English. Students are undoubtedly exposed to make clarification in their mother tongue, especially when explaining complex grammar rules that they are unable to comprehend in English (Al-Musawi, 2014). This will lead the whole text to be misinterpreted due to haywire of understanding the reading comprehension through translation.

Moreover, there is also an issue on teachers who are seriously having misconception of the implementation of CEFR which needed to be set right in the teaching comprehension (Zuraidah and Mardziah, 2019). There are some teachers in schools who are still in their own world of not knowing what precisely CEFR is. They were unsure of what they need to do and lack of knowledge on the new changes of teaching CEFR comprehension. They exhibited a poor degree of awareness about CEFR on the ground that the teachers have not gone through the satisfaction of training in creating CEFR-based classroom activities (Alih et. al., 2020). This is in light of facts that they were not given enough experience to grasp the new ideas of teaching in the real field. This is supported by Farehah and Salehhuddin (2018) finding that a large number of teachers had exceptionally restricted information, where they do not get sufficient exposure and low level of mindfulness about the CEFR comprehension. This led teachers to lose their interest and confidence in adopting the CEFR in the teaching process. When this happens, they tend to choose to do what they understand and carry on their teaching of CEFR comprehension.

Furthermore, teaching Higher Order Thinking Skills (HOTS) in CEFR reading comprehension process is also another problem. Siti (2016) reported that in Malaysian classrooms, the problem among teachers is being unable to incorporate higher order thinking into teaching and learning has persisted. In line with the discoveries of the study showed that teachers disincline and do not know how to teach HOTS questions in the teaching and learning of CEFR reading comprehension. Based on Tajularipin (2015), it is challenging to teach HOTS because teachers do not know how to employ and address students' thinking skills. This is because they are not sure on the methods to be applied in CEFR reading comprehension. As overall, teachers do not implement HOTS questions in their classroom teaching, especially on the type of HOTS reading questions and how to get students to think critically pertaining to the questions. Thus, they prefer Lower Order Thinking skills (LOTS) questions to teach reading comprehension. Teachers just prefer teaching lower-order thinking skills (LOTS) to Malaysian schools' students (Chun and Abdullah, 2019). To add on, Mistima et al., (2015) believed that the lower order thinking skill still dominates the teaching and learning process in Malaysia in ESL reading comprehension.

The use of Bubble Map dan Tree Map methods on the ESL reading comprehension in Malaysia is very limited. As such, the current study investigates the effects of utilizing Bubble Map and Tree Map methods in teaching CEFR reading comprehension among secondary school students.

1.3 Research Questions

The objective of this research is to investigate whether there is a significance difference in students' mean score in CEFR reading comprehension for open ended questions and close test between the Experimental Group 1 (taught using Bubble Map) compared with the Experimental Group 2 (taught using Tree Map) and the Control Group (taught using the Conventional method). This study is answering the following research questions.

RQ1   Is there a significance difference in students' mean scores in reading comprehension for open ended questions between the Experimental Group 1 (taught using Bubble Map) compared with the Experimental Group 2 (taught using Tree Map) and the Control Group (taught using Conventional method)?

RQ2   Is there a significance difference in students' mean scores in reading comprehension for cloze test between the Experimental Group 1 (taught using Bubble Map) compared with the Experimental Group 2 (taught using Tree Map) and the Control Group (taught using Conventional method)?

2. Review of Literature

CEFR reading comprehension is a crucial skill to develop reading through communication activities in order to create a fruitful reading lesson for secondary school students in Malaysia. Students need to grip the understanding of positive approach in CEFR reading comprehension, which allow meaningful learning to take place in their thinking process to reach the different aspect of learning. In order for this to happen, students need to analyze what they think with the reading content to answer the CEFR reading questions. This is supported by Kasim and Raisha (2017) who argued that understanding the text involves making connections between the text and the readers' prior knowledge in order to extract the information from the reading text.

I-Think mind map method is a powerful way to enhance students' CEFR reading comprehension because this method has some benefits in the 21st century of teaching and learning process. Fitri et. al. (2022) illustrates clearly that students were engaged to participate actively in the process of gaining reading comprehension by using mind maps. Similar, findings by Rankin and Brown (2015) cited in Nyagblormase et.al. (2021) indicated that the use of mind maps encourages meaningful learning that will help students to get engaged by interacting the reading text through the use of mind map. This method is a creative thinking tool for students to prepare themselves for the future generations in answering HOTS questions that will allow them to think beyond their ability for lifelong learning process. In addition, the students are encouraged to do reflection on their learning process, build the knowledge and use more critical thinking skill (Rosciano, 2015).

Hyerle (2000) believed that thinking maps are visual teaching aids that give students the ability to think critically, solve the problems and making wise decisions. Similarly, Tian and Hu (2018) acknowledged that mind mapping is a cognitive tool that can effectively direct the thinking process and increase the content of thoughts to provide visual outcomes. It is a brilliant way of exposing and captivating students' thinking skill into effective learning method of comprehending the reading text that are complex and grow creativity in their thoughts. Bubble Map is a type of i-Think mind map method that is utilized to extract information from the reading text. This map direct students to pay attention and focus on organizing their thoughts to answer the CEFR comprehension questions carefully especially the HOTS questions. Chadwick (2014) supported that Bubble Map is a helpful tool to gather information as well as distinguish between the facts and opinion based on the reading text. On the other hand, Tree Map also helps to boost the students' mind on the main ideas and supporting details by organizing the information gathered from the reading text. In line with this, Anakotta et al. (2020), the use of tree diagrams can make students more engaged in organizing their thoughts while they are learning. Therefore, both the methods can facilitate students to organize their thinking systematically and actively engage them in the process of answering the CEFR reading comprehension. Masyhud (2016) asserts that Bubble map and Tree map methods motivate students to develop a habit of thinking in their learning which allow them to implement their thoughts and ideas on the reading text.

By incorporating Bubble Map and Tree Map methods for strong and prominent visual, students are able to absorb the main ideas and supporting details easily of the reading text which lead students to have a better comprehension. Many studies indicated positive effects of utilizing i-Think mind map in reading comprehension. Yunanda (2018) who carried out a study on the use of mind mapping technique showed that the students' reading comprehension improved tremendously. This study was carried out among 35 students from 8th grade in Jember, Indonesia. The data was collected through comprehension tests, observation in the form of field notes, interviews and documentation. The study showed that that the use of mind mapping technique improved students in their reading comprehension. The mind mapping technique also motivated students in answering problem solving questions. The researcher also found that the students were more motivated and enjoyed the teaching and learning process of reading comprehension in the ESL classroom using mind mapping technique.

A further study was conducted by Aprilia (2019) in improving students' reading comprehension through mind mapping technique. The study was carried out on 2nd grade students of Senior High School in Indonesia using quantitative and qualitative approach. The researcher collected data using observation checklist, interviews, dairy notes and documentation. The findings showed that the implementation of mind mapping technique helped the students to be more comprehensive in answering the reading text. They showed high spirit of learning that led them to become more active in learning reading comprehension through the use of mind map technique. Plus, this technique has able to bridge the students to get information from the content of the text easily and answer the reading comprehension.

To support this study Tiing and Said (2019) was to examine the effects of using i-Think mind map in reading comprehension. The sample of the study was on Year 4 pupils (10 years old) of Iban and Melanau ethic group in Sarawak, Malaysia using quantitative approach. The data was collected through pupils' homework and semi-structured interviews. This study discovered that i-Think mind map method boost teachers to expand their teaching strategies of reading comprehension in order to develop the pupils thinking skill so that they were able to answer the reading questions. The study also found that pupils showed positive respond by collaborating the ideas in the reading text and organizing them to answer the questions.

Moreover, the study on the impact of using mind mapping to teach students reading comprehension (Saori, 2020). The study was conducted among 34 first year students of Senior High School. The researcher used quasi-experimental design. The data was obtained from the reading test, which distributed in the pre-test and post-test. The findings showed that students gain confidence in learning reading comprehension through the use of mind map. This method also encourages students to utilize their thinking skill, which led to higher order thinking to answer reading comprehension questions. The study clearly shows that the use of mind map has the capacity of opening up new ways of learning reading comprehension. This has developed students' creativity and promote better learning of reading comprehension among students.

Similar study on the use of mind map to facilitate students' reading comprehension was conducted by Rizkiah (2020). The sample of the study consisted of 32 students in Sidoarjo, Indonesia using qualitative design. The data was obtained by using observation filed note and close-ended questionnaire. The researchers found significant difference that there was positive response from students on the use of mind mapping method in learning reading comprehension. The study discovered that students enjoyed learning reading comprehension through the use of mind map method. The study also found that students were able to increase their critical thinking in expressing their ideas through the use of mind map in answering the reading questions.

Negara et. al. (2021) assessed the effectiveness of using mind mapping technique to improve students' reading comprehension. The sample of the study consisted of 30 first year students in Natar, Indonesia using quantitative approach. The data was obtained through reading tests (pre-test and post-test). The utilization of mind mapping has been successful in improving students' positive attitudes towards reading comprehension. The findings showed that the mind mapping method assisted students to trigger their creativity and increase their reading comprehension ability. To add on, they enjoyed the conducive environmental learning that helped them to comprehend the reading text well. This method has motivated students in answering reading comprehension questions by using mind mapping technique.

Similar research on the use of mind mapping technique to improve students' reading comprehension was conducted by Fitri et. al. (2022). The study was carried out among Year 8 students in Bojonegoro, Indonesia. The researchers collected data using observation, field notes, checklists, interviews, questionnaires and reading tests. This study demonstrated that by integrating mind mapping technique, assisted students to become faster readers, more skilled, and develop creative as well as critical thinking in their reading comprehension. In addition, the study also found that students began to participate actively in their learning process of reading comprehension. This method also gave students motivation and enthusiasm in comprehending the reading text through the use of mind map.

Lahab et. al. (2022) carried out a study on improving students' reading comprehension by using mind mapping technique. The sample of the study consisted of 35 students from 7th grade, at Itisam Wittaya Foundation School, Indonesia using quantitative method. The data was obtained through reading tests (pre-test and post-test), observation and documentation. This study discovered that mind mapping technique is useful in improving students' reading comprehension. The students were more confident in answering the reading task easily. This method automatically improves their creativity through reading comprehension. Additionally, the researchers also found that the students were able to remember and understand the important information through the use of mind mapping method in the reading comprehension.

Besides, the study by Sharif et. al (2023) was to explore the use of i-Think map method in teaching reading comprehension. The sample of the study was on 4 ESL teachers teaching Form 5 students from a public secondary school in Malaysia using qualitative method. The data was obtained through observation, semi-structured interviews and document analyses of their lesson plans. This study demonstrated that i-Think mind map method encourage students to be active learners and promote students to think out of the box. To add on, this method helped them to collaborate the main ideas and supporting details from the reading text easily especially when dealing with problem-solving questions.

Furthermore, Rahmaida and Agustina (2023) carried out a quasi-experimental design to determine the effectiveness of using mind mapping techniques in learning reading comprehension. This case-study was conducted among 32 students of grade 8, at Jombang, Indonesia. The data was collected through the reading tests (pre-test and post-test) and observation. The results revealed that the use of mind maps method has helped the students to be more enthusiastic in their reading comprehension. Moreover, they were able to identify and associate the main ideas of the reading text with the questions through the use of mind mapping technique easily. The students became active participant in their learning process of reading comprehension. This technique has assisted students to understand the new information and frequent used of reading comprehension in their everyday life.

Based on the literature review, teachers and students should be given an opportunity to inculcate creativity and critical thinking skills by utilizing Bubble Map and Tree Map methods in their ongoing teaching and learning process. Both the maps can help them to absorb their teaching and learning of CEFR reading comprehension in a better way. By collaborating Bubble Map and Tree Map methods, students would be able to stimulate good enthusiasm of learning CEFR reading comprehension. In this way, Bubble Map and Tree Map methods will be a good experience and highly effective tool for today's teaching and learning of CEFR reading comprehension. As such, in the present study, the researcher examines the outcome of utilizing Bubble Map, Tree Map and Conventional methods in teaching CEFR reading comprehension.

3. Methodology

The researcher employed a quasi-experimental design as the framework of this research to investigate whether utilizing Bubble Map and Tree Map methods is a topmost brilliant teaching method in CEFR reading comprehension among Form 1 students in Malaysia. The sample was 105 Form One students (13 years old) from three different schools (school A, B and C) from Petaling Jaya, Selangor. In this research, intact groups of students were used as a sample. All the three groups were comprised with equal participants (35 students each group). The Experimental Group 1 (EG1) from school A was taught using Bubble Map method, Experimental Group 2 (EG2) from school B was taught using Tree Map method and the Control Group (CG) from school C was taught using conventional method. The intervention in this research lasted for eight weeks. In order to track the teachers' teaching and students' leaning, the researcher did observation to examine the teachers' understanding in utilizing the methods in reading comprehension.

In collecting the data of CEFR reading comprehension, the researcher administered pre-test and post-test as instruments for this study. Both the test questions were developed in line with revise Bloom's Taxonomy. The reading comprehension test was divided into two parts, which Part 1 was on open ended questions and Part 2 was on close test. The students took the pre-test before the intervention and in the eighth week after the intervention a post-test was administered. Both the pre-test and the post-test were similar in content. The quantitative data was analyzed by using SPSS Program Windows version 26 (Revathi & John, 2019), then descriptive statistics and inferential statistics (MANCOVA test and Tukey HSD) was employed to answer the research questions. In order to eliminate the

differences between the Experimental Group 1, Experimental Group 2 and the Control Group prior to the intervention, the pre-test was used as a covariate.

4. Results and Discussion

The result and discussion are presented based on the research question:

RQ1 Is there a significance difference in students' mean scores in CEFR reading comprehension for open ended questions between the Experimental Group 1 (taught using Bubble Map) compared with the Experimental Group 2 (taught using Tree Map) and the Control Group (taught using Conventional method)?

The findings revealed that in the Pre-test the mean score for open ended questions in the CEFR reading comprehension of the Experimental Group 1 was almost the same (Mean = 5.00; SD = 1.86) as the mean score of the Experimental Group 2 (Mean = 5.49; SD = 2.05). While, the mean score of the Control Group was very low (Mean = 4.86; SD = 2.50) compared with the mean score of the Experimental Group 1 and 2. However, in the Post-test, the mean score of the Experimental Group 1 for open ended questions was higher (Mean = 9.51; SD = .658) than the mean score of the Experimental Group 2 (Mean = 9.40; SD = .775) and the Control Group (Mean = 4.43; SD = 1.31).

Table 4.1. The Results of MANCOVA Test on Students' Performance in their Reading Comprehension for Open ended

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	590.445[a]	3	196.815	212.563	.000
Intercept	959.279	1	959.279	1036.037	.000
Open Pre	.197	1	.197	.213	.645
GROUP	587.950	2	293.975	317.498	.000
Error	93.517	101	.926		
Total	7041.000	105			
Corrected Total	683.962	104			

Level of significance is at <0.05

The findings of the MANCOVA test in Table 4.1 demonstrated that there is a significant difference between the Experimental Group 1, Experimental Group 2 and Control Group in their mean score for open ended comprehension in the Post-test (F = 317.50, df = 2, p = .000). Hence, the Research Question 1 has been answered.

These results clearly support the findings by Yunanda (2018) which showed that utilizing of Bubble Map and Tree Map methods had significantly improved the mean score of students in answering open ended questions compared with the Control Group. These findings are also in line with findings by Aprilia (2019) that indicated the use of Bubble Map and Tree Map methods helped students to become more active in learning reading comprehension. Their high spirit of learning in using Bubble Map and Tree Map methods, encourage them to answer the reading questions. To support further, Negara et. al. (2021) demonstrated that i-Think mind map motivated students to trigger their creativity and increase their reading comprehension ability in answering the questions compared with the Control Group (using the conventional method).

Table 4.2. Multiple Comparisons for Open Ended in Post-test.

Tukey HSD

						95% Confidence Interval	
	(I) Group	(J) Group	Mean Difference (I-J)	Std. Error	Sig.	Lower Bound	Upper Bound
Open Ended Post-test	1.00	2.00	.114	.229	.872	-.431	.660
		3.00	5.09	.229	.000	4.54	5.63
	2.00	1.00	-.114	.229	.872	-.659	.431
		3.00	4.97	.229	.000	4.43	5.52
	3.00	1.00	-5.09	.229	.000	-5.63	-4.54
		2.00	-4.97	.229	.000	-5.52	-4.43

Level of significance is at p < 0.05
(1: Experimental Group 1; 2: Experimental Group 2; 3: Control Group).

The results of Tukey HSD test in Table 4.2 show that the Experimental Group 1 (using Bubble Map) did not perform significantly higher than the Experimental Group 2 (using Tree Map) in their reading comprehension for open ended questions (MD = .114; p = .872). However, the Experimental Group 1 performed significantly higher than the Control Group (using Conventional method) in the Post-test (MD = 5.09; p = .000). The Experimental Group 2 also performed significantly higher than the Control Group in answering open ended (MD = 4.97; p = .000).

These findings revealed that there is a significant difference in students' comprehension for open ended questions in the Post-test. The

Experimental Group 1 (using Bubble Map) and the Experimental Group 2 (using Tree Map) outperformed the Control Group (using Conventional method) in their reading comprehension for open ended questions.

These findings are parallel to the studies by Rizkiah (2020) who explicated that the use of Bubble Map and Tree Map methods gave students positive response in their learning that helped them to increase their critical thinking in expressing their ideas to answer the questions. Moreover, Tiing and Said (2019) demonstrated that Bubble Map and Tree Map methods promotes students to learn collaboratively that allow them to organize and recall the main ideas in the reading comprehension. The results also correspond to the findings by Saori (2020) who unfolded that students utilize Bubble Map and Tree Map methods to comprehend the reading text, which directed help them to answer higher order thinking reading questions.

RQ2   Is there a significance difference in students' mean score in reading comprehension for cloze test between the Experimental Group 1 (taught using Bubble Map) compared with the Experimental Group 2 (taught using Tree Map) and the Control Group (taught using Conventional method)?

The findings show that in the Pre-test, the mean score for the cloze test in reading comprehension of the Experimental Group 1 was lower (M = 3.11; SD = 2.03) compared with the mean score of the Experimental Group 2 (M = 3.97; SD = 1.98). The mean score for the Control Group in the Pre-test was the lowest (M = 3.63; SD = 2.00). However, in the Post-test, the mean score of the Experimental Group 1 for the close test was much higher (M = 8.17; SD = 1.18) with the mean score of the Experimental Group 2 (M = 6.86; SD = 1.78). The mean score of the Control Group was the lowest (M = 4.90; SD = 1.66).

Table 4.3. The Results of the MANCOVA Test on Students' Performance in their Cloze Test for Reading Comprehension

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	95.732[a]	3	31.911	13.902	.000
Intercept	609.845	1	609.845	265.673	.000
Close-Test Pre	5.701	1	5.701	2.484	.119
GROUP	95.439	2	47.720	20.789	.000
Error	174.456	76	2.295		
Total	4403.000	80			
Corrected Total	270.188	79			

Level of significance is at p<0.05

The results of the MANCOVA test in Table 4.3 indicated that there is a significant difference between the Experimental Group 1, Experimental Group 2 and Control Group in their mean score for cloze test for comprehension in the Post-test (F = 20.789, df = 2, p = .000). These findings clearly show that Bubble Map and Tree Map methods help the students in the area of cloze test compared with the Control Group. As such, the results answered the Research Question 2.

These findings are parallel with those findings by Fitri et. al. (2022) who stressed that Bubble Map and Tree Map methods assisted students become enthusiastic and more skilled in their learning process of answering reading comprehension questions. Similarly, findings by Alomari (2019) also indicated that Bubble Map and Tree Map methods stimulate students to focus and learn effectively in answering the comprehension questions. Current findings are also consistent with the opinion of Rizkiah, (2020) whose research affirmed the use of Bubble Map and Tree Map method assisted students to express their own ideas which increase their critical thinking skill from the reading text and in the long run they enjoyed the learning process.

Table 4.4. Multiple Comparisons for Close Test in Post-test

Tukey HSD

	(I)/ Group	(J) Group	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval Lower Bound	Upper Bound
Close Test Post-test	1.00	2.00	1.31	.366	.002	.440	2.19
		3.00	3.27	.548	.000	1.96	4.58
	2.00	1.00	-1.31	.366	.002	-2.19	-.440
		3.00	1.96	.548	.002	.646	3.27
	3.00	1.00	-3.27	.548	.000	-4.58	-1.96
		2.00	-1.96	.548	.002	-3.27	-.646

Level of significance is at p < 0.05

(1: Experimental Group 1; 2: Experimental Group 2; 3: Control Group).

The results of Tukey HSD test in Table 4.4 show that the Experimental Group 1 (using Bubble Map) did not perform significantly higher than the Experimental Group 2 (using Tree Map) in the area of cloze test in reading comprehension (MD = 1.31; p = .002). On the other hand, the Experimental Group 1 performed significantly higher than the Control Group (using Conventional method) in the Post-test (MD =3.27; p = .000). Similarly, the Experimental Group 2 also performed significantly higher than the Control Group (MD = 1.96; p = .002).

As such, these findings revealed that the Experimental Group 1 and the Experimental Group 2 had performed significantly better than the Control Group in their cloze test for reading comprehension.

These findings are parallel with Lahab et. al. (2022) who highlighted that their students were more confident in answering the reading comprehension questions through the use of Bubble Map and Tree Map method. Similarly, a study by Rahmaida and Agustina (2023) advocated those vivid illustrations of using Bubble Map and Tree Map method assisted students to became active participants in identifying and associate the main ideas of the reading text to answer the questions. In addition, the findings support studies done by Sharif et. al. (2023) which showed that Bubble Map and Tree Map method promote students to think creativity and enhance their problem-solving skill in dealing with challenging reading comprehension questions.

5. Conclusion

The utilization of Bubble Map and Tree Map method is a creative approach in enhancing students' ESL comprehension especially open ended and cloze test questions. Both the methods assisted students to find the main ideas and supporting details from the reading text in order to answer the comprehension questions systematically. This helped students to think beyond the reading text which promote them to develop positive mind set in answering the questions. This at the same time engaged students to be active participants in applying Bubble Map and Tree Map method in CEFR reading comprehension. The visual impact of using both the methods can be a strong and effective tool for teaching and improving students' performance of CEFR reading comprehension.

This study has crucial pedagogical implication because it can boost teachers' pedagogical skills in teaching CEFR reading comprehension. Moreover, this method (Bubble Map and Tree Map) helped teachers to use their creativity and innovation that can flip into a more enjoyable and fun learning environment in the teaching process of CEFR reading comprehension. In term of practical implications, the Ministry of Education and Teachers Training Division should train the teachers on how to apply the Bubble Map and Tree Map method in teaching CEFR reading comprehension. Additionally, to aid ESL students, book publishers could incorporate more reading comprehension tasks by utilizing Bubble Map and Tree Map method. Through the use of these maps, publishers can create high-quality comprehension exercises which are more engaging for students.

This research has some limitations that can be improvise in future. First of all, this study only focusses on ESL reading comprehension. As such, future studies can be applied to other skills like listening, speaking and writing. Second, this study only focuses on three type of methods which are Bubble Map, Tree Map and Conventional method in CEFR reading comprehension. However, future studies can focus on other methods from the i-Think mind map that can be applied in teaching CEFR reading comprehension, for example, Double Bubble Map, Flow 5T and Brace Map methods.

In conclusion, Bubble Map and Tree Map method is an excellent addition tool to assist students' CEFR reading comprehension. The students will be better equipped with greater knowledge and understanding of the reading comprehension when they are able to unfold their thoughts and ideas towards more effective learning. Teachers can instill more challenging activities using various type of questions especially HOTS questions in reading comprehension. On top of that, the Malaysian Ministry of Education should encourage teachers to use the Bubble Map and Tree Map method in teaching CEFR reading comprehension to Malaysian students. Thus, innovative teaching and learning process of CEFR reading comprehension can benefit both teachers and students through the use of Bubble Map and Tree Map method.

References

Alih, N. A. C., Yusoff, M. A. M., & Abdul, A. H. (2020). Teachers' Knowledge and Belief on The CEFR Implementation in Malaysian ESL Classroom. *International Journal of Multidisciplinary and Current Educational Research*, *2*(5), 126-134.

Al-Musawi, N. M. (2014). Strategic Use of Translation in Learning English as a Foreign Language (EFL) Among Bahrain University Students. *Comprehensive Psychology, 3*. https://doi.org/10.2466/10.03.it.3.4

Alomari, A. M. (2019). Using Mind Mapping Technique to Improve Reading Comprehension Ability of Fourth Grade Arabic Language Students in Jordan. *IOSR Journal of Humanities and Social Science, 24*(1), 53-58.

Alowalid, A., Mujiyanto, J., & Bharati, D. L. A. (2018). The Linguistic Factors That Affect Poor Reading Comprehension Among Libyan Students. *English Education Journal, 8*(2), 229-240.

Ameyaw, S. K., & Anto, S. K. (2018). Read or Perish: Reading Habits Among Students and Its Effect on Academic Performance: A Case Study of Eastbank Senior High School - Accra. *Library Philosophy and Practice (e-journal).* 1748. Retrieved from https://digitalcommons.unl.edu/libphilprac/1748

Aprilia, F. (2019) Improving Students' Reading Comprehension Through Mind Mapping Technique at the Second Grade of Senior High School. *(Unpublished Doctoral dissertation)*. Universitas Islam Negeri Sumatera Utara.

Boshrabadi, A. M. (2014). Pedagogical Utility of Translation in Teaching Reading Comprehension to Iranian Efl Learners. *International Journal of Language Learning and Applied Linguistics World. 5(2),* 381-395.

Chadwick, C. (2014). *Teaching Kids to Think Critically*. London: Rowman and Littlefield.

Chun, T. C., & Abdullah, M. N. L. Y. B. (2019). Malaysian Online Journal of Educational Management (Mojem) The Teaching of Higher Order Thinking Skills (Hots) In Malaysian Schools: *Policy and Practices. 7*(3), 1-18. https://doi.org/10.22452/mojem.vol7no3.1

Delfi, S. (2018). The Effect of Using Mind Mapping on Reading Comprehension of The First-year Students. *Mindmeister*

Farehah, N. M. U., & Sallehhudin, M. A. A. (2018). Implementation of CEFR in Malaysia: Teachers' Awareness and The Challenges. 3L: *The Southeast Asian Journal of English Language Studies. 24*(3), 168-183. https://doi.org/10.17576/3L-2018-2403-13

Fitri, N. A. A., Prastiwi, C. H. W., & Rahmawati, O. I. (2022). Using Mind Mapping Technique to Improve the Students' Reading Comprehension of Recount Text. *English Language and Literature International Conference (Ellic) Proceedings, 5*(0), 337-342.

Hyerle, D. (2000). *A Field Guide to Using Visual Tools*. ASCD: Association for Supervision and Curriculum Development.

Kasim, U., & Raisha, S. (2017). EFL Students' Reading Comprehension Problems: Linguistic and Non-Linguistic Complexities. *English Education Journal, 8*(3), 308-321.

Lahab, R., Fitriyah, S. M., & Sukmaantara, I. P. (2022). Improving The Seventh Grade Students' Reading Comprehension Achievement by Using Mind Mapping Technique at Itisam Wittaya Foundation School. *EFL Education Journal, 9*(2), 51-77.

Lim, C. K., Eng, L. S., Mohamed, A. R., & Ismail, S. A. M. M. (2018). Relooking at the ESL reading comprehension assessment for Malaysian primary schools. *English Language Teaching, 11*(7), 146-157. https://doi.org/10.5539/elt.v11n7p146

Masyhud, M. S. (2016). *Educational Research Methods*. Jember : Institute for Management Development and Education Professionals.

Mistima, S. M., Mazlini, A., Lee, M. F. N. A., Nidzam, C. A., & Marzita, P. (2015). Confirmatory Factor Analysis of Learning Environment Instrument Among High Performance School Students. *Creative Education, 6,* 640-646. https://doi.org/10.4236/ce.2015.66063

Negara, M. H. J., Suparman, U., & Nisa, K. (2021). *The Effectiveness of Using Mind Mapping Technique to Improve Students' Reading Comprehension in Narrative Text*. Indonesia: Lampung University. https://doi.org/10.23960/UJET.v10.i4.202112

Nur, A. H., & Ahmad, D. (2017). Improving Students' Reading Skill Through Interactive Approach at The First Grade of SMA N 1 Mare, Bone. *English, Teaching, Learning and Research Journal, 3*(1), 44-56. https://doi.org/10.24252/eternal.v31.2017.a5

Nurjanah, R. L. (2018). The Analysis on Students' Difficulties in Doing Reading Comprehension Final Test. *Journal of English Language Literature & Teaching, 2*(2), 253-264. Retrieved from https://doi.org/10.31002/metathesis.v2i2.958

Nyagblormase, G., Gyampoh, A., Hinson, J., Aidoo, B., & Yeboah, E. (2021). Effect of Mind Mapping as A Learning Tool on Online Learning of Chemistry. *Studies in Learning and Teaching, 2*(2), 47-58. http://doi.org/10.46627/silet.v2i2.75

Rahemi, E. F., Jufri, J., & Ardi, H. (2013). The Correlation Between Reading Comprehension and Translation Ability: A Correlational Study on Fourth Year Students at English Department of UNP. *Journal of English Language Teaching*, *1*(2), 178-186.

Rahmaida, R., & Agustina, R. (2023). The Effectiveness of Using Mind Mapping Technique to Teach Reading Comprehension. *Jurnal Ilmiah Wahana Pendidikan*, *9*(1), 359-366. https://doi.org/10.5281/zenodo.7542724

Revathi, S., & John, S. (2019). Learning preferences transformation in tertiary education. *International Journal of Recent Technology and Engineering (IJRTE), 8*(2S), 215-220.

Rizkiah, R. (2020). The Use of Mind Map to Facilitate the Students' Reading Comprehension in SMPIT Darul Fikri Sidoarjo. *(Unpublished Doctoral dissertation)*. Universitas Islam Negeri Sunan Ampel Surabaya.

Rizqon, M. K., Andreani, S., & Astuti, U. P. (2021). The Problems Faced by Senior High School Students in Reading Narrative Text. *JoLLA: Journal of Language, Literature, and Arts, 1*(11), 1508-1522. https://doi.org/10.17977/um064v1i112021p1508-1522

Rochman, M. (2017). The Importance of Teaching Reading: Emphasize for Reading Fluency or Accuracy in Improving Students' Reading Comprehension in EFL Context. *Ethical Lingua: Journal of Language Teaching and Literature, 4*(1), 11-29. https://doi.org/10.30605/ethicallingua.v4i1.345

Rosciano, A. (2015). The Effectiveness of Mind Mapping as An Active Learning Strategy Among Associate Degree Nursing Students. *In Teaching and Learning in Nursing, 10*(2), 93-99. https://doi.org/10.1016/j.teln.2015.01.003

Saori, S. (2020). The Use of Mind Mapping to Teach Reading Comprehension. *Journal of Languages and Language Teaching, 8*(2), 162-169. https://doi.org/10.33394/jollt.v%vi%i.2483

Sharif, S. R., Singh, C. K. S., Ong, E. T., Mulyadi, D., Ichsan, I. Z., Rahmayanti, H., & Kiong, T. T. (2023). The Use of i-Think Mapping in Teaching Reading Comprehension Among ESL Teachers. *Studies in English Language and Education, 10*(1), 78-95. https://doi.org/10.24815/siele.v10i1.24271

Siti, N. B. M. (2016). Teachers' Perception on The Integration of HOTS in Language Teaching. *International Journal of Technical Research and Applications, 15*(8), 561-575. Retrieved from https://www.researchgate.net/publication/325741449_Developing_a_Higher_Order_Thinking_Skills_Module_for_Weak_ESL_Learners#fullTextFileContent

Tajularipin, S., Sulaiman, S., & Ayub, A. F. M. (2015). Curriculum Change in English Language Curriculum Advocates Higher Order Thinking Skills and Standard-Based Assessments in Malaysian Primary Schools. *Mediterranean Journal of Social Sciences*, *6*(2),

494-500. https://doi.org/10.5901/mjss.2015.v6n2p494

Tian, Z. S., & Hu, M. (2018). The Application of Mind Mapping to College English Teaching. *Overseas English, 15*(2), 15-16.

Tiing, C. T. Y., & Said, N. E. M. (2019). The Effects of I-Think Maps on ESL Learners' Reading Comprehension in A Primary School Setting. *International Journal of Current Innovations in Advanced Research, 2*(6), 11-18.

Yunanda, L. R. (2018). Improving The Junior High School Students' Reading Comprehension by Using Mind Mapping Technique. *(Unpublished Doctoral dissertation)*. Jember: Universitas Jember.

Zuraidah, M. D., & Mardziah, H. A. (2019). The Reform of English language Education in Malaysia. Free Malaysia Today, 1. Retrieved from https://www.freemalaysiatoday.com/category/opinion/2019/05/22/the-reform-of-english-language-education-in-malaysia/