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Utilizing Mind Mapping Strategy to develop Primary Schoolers' EFL Reading Comprehension Skills

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Abstract

The current research aimed at developing the EFL Primary schoolers' reading comprehension skills using mind mapping strategy. The research adopted the quasi- experimental design. The sample of the research was sixty of the fourth year primary schoolers. They were selected from Moaz Ibn Jabal Primary School in the school year 2023-2024: (30 students for the control group and 30 students for the experimental group). The researcher designed checklist, pre-post Reading Comprehension Test and a Rubric. The experimental group was taught by the use of mind mapping strategy whereas the control group was taught by the use of regular way. The obtained data were analyzed using the Statistics Package for Social science (SPSS Ver 26). The study results revealed that there was a statistically significant difference between the mean scores of the experimental group in the pre-post

administration favoring the post administration. Moreover, it could be conducted that the mind mapping strategy was effective in developing Reading Comprehension skills.

Key words: Reading comprehension skills, Mind mapping strategy, EFL.

استخدام استراتيجية الخرائط الذهنية لتنمية مهارات الفهم القرائي باللغة الإ · بليزية كلغة أحنبية لدى تلاميذ المدارس الابتدائية

الملخص:

هدفت الدراسة الحالية الى تنمية مهارات الفهم القرائي باللغة الإنجليزية كلغة أجنبية لدى تلاميذ المدارس الابتدائية باستخدام استراتيجية الخرائط الذهنية. طبقت الدراسة الحالية علي عينة من تلاميذ الصف الرابع الابتدائي تم اختيارهم من مدرسة معاذ بن جبل الابتدائية المشتركة للعام الدراسي (٢٠٢٠ –٢٠٢٤): تتكون العينة من مجموعة من التلاميذ عددهم ستون تلميذا وتم تقسيمهم إلى مجموعتين (٣٠ تلميذا للمجموعة الضابطة درست وفقا للطريقة التقليدية و٣٠ تلميذا للمجموعة التجريبية درست وفقا لاستراتيجية الخرائط الذهنية).قامت الباحثة بتصميم اختبار لقياس مهارات الفهم القرائي باللغة الإنجليزية وتم تطبيقه على كلا من المجموعتين قبليا وبعديا للوصول الي مدي دلالة الفروق بين متوسطات الدرجات للمجموعتين الضابطة والتجريبية، مفتاح تصحيح لكلا من الاختبارين. تم تدريس المجموعة التجريبية باستخدام الستراتيجية الخرائط الذهنية بينما تم تدريس المجموعة الضابطة باستخدام الطريقة العادية. تم تحليل البيانات التي تم الحصول عليها باستخدام المجموعة الإحصائية للعلوم الاجتماعية الإصدار ٢٠٠ أوضحت نتائج الدراسة وجود فروق ذات دلالة إحصائية بين متوسطات درجات المجموعة التجريبية لصائح الاختبار البعدي عن أقرانهم من المجموعة متوسطات درجات المجموعة التجريبية لصائح الاختبار البعدي عن أقرانهم من المجموعة متوسطات درجات المجموعة التجريبية لصائح الاختبار البعدي عن أقرانهم من المجموعة متوسطات درجات المجموعة التجريبية لصائح الاختبار البعدي عن أقرانهم من المجموعة متوسطات درجات المجموعة التجريبية لصائح الاختبار البعدي عن أقرانهم من المجموعة التجريبية لصائح الاختبار البعدي عن أقرانهم من المجموعة التحريبية لصائح المختبار البعدي عن أقرانهم من المجموعة المتحري المحروية المتحرية المتح

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الضابطة. مما تبين من فاعلية استراتيجية الخرائط الذهنية في تنمية مهارات الفهم القرائي.

الكلمات المفتاحية: مهارات الفهم القرائي، الخرائط الذهنية، اللغة الأجنبية.

Introduction:

Reading comprehension is the process by which we understand the texts we read. It is the purpose of reading. It is also the prerequisite for meaningful learning from text. Reading comprehension is the application of a skill that evolved for other purposes (listening or oral comprehension) to a new form of input (text).

Reading is a complex cognitive process of decoding symbols in order to build or to derive meaning from the text. Reading, in this term, is a means of language acquisition, of communication, and of sharing information and ideas (Kaganang, 2019). Tompkins (2011) expressed that comprehension is a creative process that hinges on four skills called phonology, syntax, semantics, and pragmatics. According to Dennis (2008), reading comprehension is a complex process between identifying printed symbols and interpreting the meaning behind the symbols.

Reading comprehension is the interaction between the readers and the text in order to form a meaning from the text which is involved a complex process, word knowledge, and world knowledge (Ayu, Diem & Vianty, 2017). The goal of all reading instruction is ultimately targeted helping a reader comprehend text (Melsandi, 2018). Reading demands readers to interpret and negotiate both design element and graphic image to comprehend written language (Tuzahra, 2021). In comprehending a text, the

readers not only form a meaning from one sentence only but from the set of sentences that links and hold together in the different part of the text (Linda Septiyana&Anas Safitri,2021).

Ortlieb (2013) considered reading comprehension as the ultimate goal of the reading process. It was also seen as a mental skill that is connected with the learning process and as such directly affects the academic achievement and success in the different academic subjects. Kendeou, et al (2007:28) state that a general component in many definitions of comprehension is the interpretation of the information in the text, the use of prior knowledge to interpret this information and, ultimately, the construction of a coherent representation or picture in the reader's mind of what the text is about.

As comprehension involves the interaction of a wide range of cognitive skills and processes there are many occasions where difficulties arise that may lead to comprehension failure (Cain and Oakhill 2007). Ahmadi(2017) states that motivation is one of the important factors which impact greatly on language learning. One of the most important factors which receives the special focus in foreign language teaching is reading motivation. Reading motivation impacts all aspects of motivation and reading comprehension strategies in different conditions. According to Hairul, Ahmadi, and Pourhosein (2012), reading motivation is the large amount of motivation that students have to concentrate their positive or negative opinions about reading.

For many schoolers, recognizing and using the traditional ways of language teaching are frustrating and difficult aspects of their language learning experience since they are not able to achieve sufficient knowledge of language skills or subject matters.

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Hence, the researcher is going to find the optimal ways of teaching reading comprehension using a Mind Mapping Strategy.

Mind mapping that are graphic and visual presentation of materials, was first introduced by Buzan in the late 19th century .Buzan (2007: 103) defines that mind mapping is a creative thinking tool reflecting the brain's way to work. It enables brain to use all its image and association in pattern of radial and brain internally. It is the easiest way to place information which go out from the brain. Mindmapping is way to write creatively and effectively. It will map our ideas literally. Murley (2007: 175) states mind mapping as nonlinear visual outline of complex information that can aid creativity, organization, productivity, and memory.

Windura (2008: 16) states that Mind map is technical graphics that allow us to explore the full potential of our brain for thinking and learning. Edward (2009: 64) says that Mind map is the most effective and efficient way to enter, store, and remove the data from / to the brain. According to Lu et al. (2013), a mind map "emphasizes divergent thinking and focuses on the core concept or the crucial problem instead of on the process of knowledge acquisition (memorizing) and problem solving"(p. 236). As people with visual memory can remember more the visual images than the words and sentences, Buzan (2003), in a study, found that only three percent of one hundred people that heard the word "Apple", saw the word "A-P-P-L-E" spelled out in their minds, and the rest imagined a picture or photograph or drawing related to that word.

Siriphanic & Laohawiriyano (2010) point out that thoughtsmaps are effective in teaching and learning. They are helpful in terms of helping communicate information because complex

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concepts can be easily clarified into simple ones. Kaufman (2010) argues that mind mapping is a useful technique to use while reading, since the non-linear format allows you to view the entirety of your notes at a glance, then easily place new information in the appropriate branch or make connections between ideas.

Mind mapping is also an effective tool in helping low learners to improve their level of achievement (Holzman, 2004). It also improves cognitive processes and long-term memory of facts. Besides, it encourages using deeper levels of factual processes and better reorganizing the memory (Farrand, Hussain, & Hennessey, 2002). Siriphanic & Laohawiriyano (2010) point out that thoughtsmaps are effective in teaching and learning. They are helpful in terms of helping communicate information because complex concepts can be easily clarified into simple ones.

By mind mapping schoolers can develop their ability in memorizing, brainstorming, learning, as well as creativity (Ingemann, 2008). Mind maps graphically show ideas in a relational context, with the main topic at the centre of the map, major subtopic on branches radiating from the main topic, and subsubtopic around each subtopic, etc. A mind map is a visual representation of ideas and concepts. Its flexible links, capacity of using images, colors, and lots of other options facilitate different actions as brainstorming, analyzing, comprehending, etc.

The main goal of a mind mapping strategy in teaching is to help students to be independent in completing tasks. Hence, if students find an external reason strong enough to do the activity, they will make the activity more interesting by changing cognitive or behavioral strategies (Sansone & Thoman, 2005).

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In addition, the involvement of the generic structure of the text is also covered by bottom-up process. Bottom-up deals with the linguistic aspects such as words, phrase, grammatical cues and discourse marker (Brown, 2001: 299). Generally, mind mapping combines two processes of reading comprehension: top-down and bottom-up processes. In other words, it adopts the way brain organizes our knowledge and experiences. In simple words, mind map is a visualization of the brain works. graphically show ideas in a relational context, with the main topic at the Centre of the map, major subtopic on branches radiating from the main topic, and subsubtopic around each subtopic, etc.

Windura (2008: 16) states that Mind map is technical graphics that allow us to explore the full potential of our brain for thinking and learning. Edward (2009: 64) says that Mind map is the most effective and efficient way to enter, store, and

remove the data from / to the brain. This system works based on the natural working of our brains, so it can optimize all the potential and capacity of the human brain.

Buzan (2006), the creator of mind map claimed that mind map enables students to save time in reading, helps them remember content of what the read, balances students" left and right brain, and assists the students to learn the concept fully. In regard to time saving, with mind map, students just need to go to the points and ignore unnecessary information of the text and it needs less time than reading every single word from the first to the last line.

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Besides, it encourages using deeper levels of factual processes and better reorganizing the memory (Farrand, Hussain, & Hennessey, 2002).

Context of the problem:

The researcher informally interviewed some learners in the primary stage and found that they suffer from weakness of their reading comprehension skills in English and having reviewed some studies in the Egyptian context, she found that:

- 1. The learners do not have enough motivation to practice English in class.
- 2.Most of them are too shy and afraid of taking part in reading.
- 3. They have problems in reading comprehension skills.

Statement of the problem

The problem of the present research can be stated in the following statement: a great number of the fourth-year primary schoolers lack reading comprehension skills.

The nature of this stated problem urges teachers of English to utilize various methods to facilitate learning reading comprehension skills. The researcher proposed utilizing mind mapping strategy to develop the EFL Primary schoolers' reading comprehension skills.

Questions of the research

More precisely, the study addressed the following main question:

"How can mind mapping strategy help primary four schoolers develop some EFL reading comprehension skills?"

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In order to answer the main question above, the following subquestions could be raised:

- 1. What are the target EFL reading comprehension skills for the fourth year primary schoolers?
- 2. What are the features of mind mapping strategy that may develop level of fourth year primary schoolers 'in reading comprehension skills?
- 3. To what extent is mind mapping strategy effective in developing the fourth-year primary schoolers' reading comprehension skills?

Aims of the research

This research aims to:

Develop reading comprehension skills for EFL fourth year Primary schoolers.

Significance of the research

Results of the current study would hopefully help the following:

1.EFL Pupils:

It might help students be aware of the appropriate reading comprehension skills and overcome the difficulties they face during reading process. They could also be more motivated while reading process. Developing reading comprehension skills is expected to affect primary schoolers' skills in other language skills as they would become proficient in the use of language.

2.EFL Teachers:

Provide EFL teachers with a teachers' guide on how to teach through using a mind mapping strategy.

Provide EFL teachers with several ideas about how a mind mapping strategy can be applied in their classrooms to improve primary schoolers' reading comprehension skills.

3.EFL Curriculum designers:

It may help them to take into consideration the principles and propositions of a mind mapping strategy while designing reading tasks to be included in primary schoolers; textbooks.

4.EFL supervisors in:

-using this strategy to set training courses for EFL teachers.

5.EFL researchers in:

guiding other researchers to conduct further studies on developing EFL skills through using the strategy activities other than reading comprehension.

Delimitations of the research:

This research was delimited to following:-

- 1- A group of 4th year primary stage pupils at Moas Ibn Jabal School, Sharkia Governorate, Egypt.
- 2- Some reading comprehension skills suitable for fourth grade language primary schoolers which will be approved by the jury members.

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- 3- A limited duration for administering a mind mapping strategy during the academic year 2023\ 2024(8weeks, one session a week).
- 4- Some activities for promoting reading comprehension skills.

Definition of terms

Mind Mapping Strategy

According to Windura (2008: 16) mind mapping is technical graphics that allow us to explore the full potential of our brain for thinking and learning.

Operationally, mind mapping refers to taking notes, organizing and getting ideas easily from the simple figures.

Reading Comprehension

According to Kendeou, et al (2007:28) comprehension is the interpretation of the information in the text, the use of prior knowledge to interpret this information and, ultimately, the construction of a coherent representation or picture in the reader's mind of what the text is about .

Operationally, it can be defined as EFL fourth year primary schoolers' ability to read and extract meaning, understanding and creating mental image to what had been written in a text that enables the reader to interpret the overall text and make use of six reading comprehension skills. They are (Skimming for general ideas, scanning specific information, guessing the meaning of a word from context, making inferences and drawing conclusion, prediction, sequencing events).

Method and procedures

Research design

The researcher adopted Research design

The researcher adopted the quasi-experimental design of two groups. Participants of the study were assigned as experimental and the control groups. Before and after the experiment, both group were administered the pre-post test of reading comprehension skills.

Participants:

Participants includes 60 four year primary learners, in the second semester of the academic year (2023-2024) from Moaz Ibn Jabal primary school. They were assigned equally into groups, exprimental (30) learners and control (30) learners. It was assumed that the participants formed a homogenous group as they were drawn intenionally. So they were expected to have a lot in common and woud not differ much regarding the quality of experience or their ages.

Instruments

- 1. A reading comprehension skills questionaire prepared by the researcher.
- 2. A pre- post reading comprehension test prepared by the researcher.
- 3. A Reading Comprehension Test rubric.

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Validating the research hypotheses

The first hypothesesis

It was hypothesized that there is a statically difference between the mean scores of the experimental and controle groups on the post administration of the reading comprehension skills test results, in favour of the experimental group ones. The results have been presented in table (1)

Table 1:
Both groups post EFL reading comprehension skills test results

Skill	Group	N	M	D.f	t-value	Sig
Literal skills	Control	30	4.0000		0.494	0.623
	Experimental	xperimental 30 4.2000			0.494	0.023
Inferential skills	Control	30	30 2.2000		0.000	1.00
	Experimental	30	2.2000	58	0.000	1.00
Overall Reading Comprehension skills test	Control	30	6.2000			0.785
	Experimental	30	6.4000		0.247	

Table (1) indicates that the experimental group results were higher than the control group in the EFL over reading comprehension skills ones and sub-skills, where t-values were, (0.247) for overall reading comprehension skills, (0.494) for literal skills, (0.000) for inferential skills, all were significant at 0.01 level. Therefore, this hypothesis was confirmed.

The second hypothesesis

It was hypothesized that there is a statically difference between the mean scores of the experimental and controle groups on the preposted results of the overall EFL reading comprehension skills test results and its sub-skills, in favour of the post-test ones. This is shown in table (2)

The pre-post reading comprehension skills test result of the experimental group

Skill	Test	N	M	S.D	D.f	t-value	Sig
Literal skills	Pre	30	4.2000	1.68973		11.615	0.000
	Post	30	10.9000	2.66975			
Inferential skills	Pre	30	2.2000	1.56249	58	14.432	0.000
	Post	30	8.9000	2.00603			0.000
Overall Reading Comprehension skills test	Pre	30	6.4000	2.81131		0.000	
	Post	30	19.8	4.35811		14.152	

Table (2) indicates that the means of scores of the experimental group were higher in the post test results than those of the pre-ones in the EFL reading comprehension skills and its sub-skills, where t-values were, (14.152) for overall EFL reading comprehension skills, (11.615) for literal skills, (14.432) for inferential skills; all were significant at 0, 01 level. Therefore, this hypothesis was confirmed.

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The third hypothesis

It was hypothesized that using the mind mapping strategy has a positive large effect on the experimental group learnerss' EFL reading comprehension skills. Results are shown in table (3).

Skill	Test	N	М	S.D	t- value	Eta square	Effect size
Literal skills	Pre	30	4.2000	1.68973	11.615	1.49	large
	Post	30	10.9000	2.66975		1.49	
Inferential skills	Pre	30	2.2000	1.56249	14.432	1.86	large
	Post	30	8.9000	2.00603			
Overall Reading Comprehension skills test	Pre	30	6.4000	2.81131	1.83	1.83	
	Post	30	19.8	4.35811		large	

Significant at (0.01)

Table (3) indicates that the effect size of the experimental group in the post were higher in the post test results were higher than those of the pre-ones in the EFL overall reading comprehension skills, where the effect size were (1.83) for overall reading comprehension skills test, where the effect size were (1.49) for the literal skills, (1.86) for the inferential skills, all these values were significant at 0.01 level. Therefore this hypothesis was confirmed.

The results of the study:

- 1. The experimental group outperformed the control group in the results of the post administration of the EFL reading comprehension skills test.
- 2- The post administration outperformed the pre one in the results of the EFL reading comprehension skills test results.
 - 3-Using Mind Mapping Strategy had a large effect size on the experimental participants' overall main skills of EFL reading comprehension skills test results.

Conclusion

This research aimed to investigate the effectiveness of using mind mapping strategy for developing some reading comprehension skills among fourth-primary schoolers. A new breakthrough in the curriculum has made it necessary to take care of all language skills, especially reading comprehension skills. Every teacher must be interested in developing these skills to help them achieve the objectives of the curriculum, achieve the desired results and maximize the use of these curricula to benefit the learner in community and with other communities if needed.

Despite the importance of EFL reading comprehension skills, there has been little research into how to develop them, particularly through mind mapping strategy. Therefore, this research is interested in developing EFL reading comprehension skills by using mind mapping strategy.

A pilot study was conducted for investigating the level of the learners' EFL reading comprehension skills. The researcher administrated an EFL reading comprehension test to 60 learners

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from Moas Ibn Jabal Primaryary School, Alshrkia Governorate. The results of the pilot study revealed that the learners' level of reading comprehension skills needed to be improved. Therefore, the current research aimed to investigate the effectiveness of mind mapping strategy in developing some EFL reading comprehension skills.

Results of the research showed that after the experiment, learners of the research have improved their performance in the post-test. In addition, t-test value of the study participants indicated that the results of post-test were better than the results of pre- test. It is clear that using mind mapping strategy is more effective than using the regular way.

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