



عنوان البحث:
Using Multisensory Approach to Develop Primary Stage
Pupils' Reading Comprehension

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Using Multisensory Approach to Develop Primary Stage Pupils' Reading Comprehension

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ABSTRACT

The current study aimed at developing EFL third grade pupils' reading comprehension skills (literal –inferential – critical) via using the multisensory approach. A group of sixty-four third year primary pupils from Ezbet Abo Atts primary school participated in the study during the academic year 2021-2022. They were divided into two groups: an experimental group (No=32) and a control group (N= 32). The experimental group pupils were taught using the multisensory approach, while the control group pupils received regular instruction. The Instruments and materials of the study consisted of an EFL reading comprehension skills checklist, an EFL reading comprehension skills test and a teacher's guide. The participants were pre-post tested using the reading skills test. After treating data statistically, the findings revealed that using the multisensory approach was effective in developing EFL third grade pupils' reading comprehension skills. It is recommended that the multisensory approach be used in EFL classes in general and the reading class in particular.

Key words: Multisensory approach, EFL reading comprehension, Primary school pupils'.

الملخص

عنوان البحث: فعالية مدخل الحواس المتعددة في تنمية مهارات الفهم القرائي لدى تلاميذ المرحلة الابتدائية

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تناولت الدراسة الحالية تأثير استخدام **مدخل الحواس المتعددة في تنمية مهارات الفهم القرائي لدى تلاميذ المرحلة الابتدائية** في اللغة الإنجليزية كلغة أجنبية. بلغ عدد المشاركين في الدراسة ٦٤ تلميذاً ، تم اختيارهم عشوائياً من تلاميذ الصف الثالث الملتحقين بالمرحلة الابتدائية بمدرسة عزبة ابو عدس الابتدائية بإدارة منوف التعليمية بمحافظة المنوفية ، وذلك خلال الفصل الدراسي الأول للعام الدراسي ٢٠٢١-٢٠٢٢. تم تقسيم المشاركين إلى مجموعتين: التجريبية (٣٢) والضابطة (٣٢) ، واعتمدت الدراسة علي المنهج شبه التجريبي حيث حيث تلقت المجموعة التجريبية مهارات الفهم القرائي من خلال **مدخل الحواس المتعددة** بينما تلقت المجموعة الضابطة تعليمها بالطريقة التقليدية . تضمنت الأدوات قائمة مراجعة لمهارات الفهم القرائي باللغة الإنجليزية كلغة أجنبية واختبار مهارات القرائي. ولقد أظهرت النتائج الأثر الإيجابي لاستخدام **مدخل الحواس المتعددة في تنمية مهارات الفهم القرائي لدى تلاميذ المرحلة الابتدائية**. ومن ثم يبدو أن النتائج توفر أدلة كافية لدعم الفرضيات حيث كان التغيير الذي حدث في أداء مهارات الفهم القرائي للمجموعة التجريبية كما هو موضح طبقاً لنتائج الاختبار البعدي أعلى من التغيير الذي حدث في نتائج الاختبار القبلي. وبذلك أوضحت الدراسة أن استخدام **مدخل الحواس المتعددة** أثر بشكل إيجابي على مهارات الفهم القرائي لدى تلاميذ المرحلة الابتدائية.

1.1. Introduction

English, as a foreign language, is one of the most important means of communication among people around the world. EFL learners should possess highly communicative skills in order to use English well. Listening, speaking, reading and writing are language skills that individuals can use in everyday life. For the study purposes, these language skills are grouped into two types; oral (listening, speaking) and written (reading and writing). It is important to emphasize that written skills come after oral skills. Sometimes language skills are integrated and learnt holistically.

Reading is one of the most important skills, if not the most among language skills as it develops language and culture. When readers read, they recognize that the words or symbols associate with meaning until they make a complete idea,

and after that think about, or explain to others. It is a main source of getting knowledge and information. Chamot and Kupper (2010) mentioned that reading is the ability of readers to transfer written symbols to meaning and use them effectively and communicatively.

Reading is not something that happens automatically. One cannot wake up and find himself able to read. He/ She cannot become a reader in the same way that one learns to walk. It is not axiom from the environment nor is it merely a matter of physical maturity. Learning to read requires practice and instruction, and this learning occurs across through a separate stage. Wolf. (2008) stated five stages of reading development. The first stage is the emergent pre-reader (typically between 6 months to 6 years old). The second stage is the novice reader (typically between 6 to 7 years old). The third stage is the decoding reader (typically between 7 to 9 years old). The fourth stage is the comprehension reading stage (typically between 9 to 16 years old). The fifth stage is the expert reader (typically from 16 years and older).

Throughout the literature of reading over decades, there are three main models of reading. These models explain the nature and the process of reading. These are: the bottom-up model, the top-down model, and the interactive model. (Alsamadani, 2008; Lie, 2010; Obeid, 2010). There are four components of reading representing phonemic awareness, reading accuracy, reading comprehension, and spelling.

Reading comprehension is the process that initiates very complicated activities regardless of text language, some aspects of reading comprehension might include the gradual building up of understanding as reading takes place. These include the confirmation of forecasts based on later data predicting, the meaning of words, making of connections between different parts of a text to support interpretation, support for comprehension by scanning and indicating the sentence structure, punctuation and extension of the skills. (Clarke, Truelove, Hulme & Snowling, 2013).

Reading comprehension is one of the basic skills in every language classroom and it is the core of the curriculum in foreign language learning for several reasons. It is functions as a means of increasing pupil's knowledge of the language being learnt (Behjat, 2011:239).It is one of the most commonly used language skills in everyday life as a witness by use of the internet (Medina, 2012). It gives a big contribution to learners to perform their communication skill better (Afida, 2008). It helps the pupil to find meaning in what is read (Mohamad, 1999). It helps pupils construct meaning by focusing on the relevant features of a text and to relate those features to their prior experiences (Medina, 2012). Many



language instructors, material designers and scholars were interested in investigating the effectiveness of a variety of strategies and methods that can be employed in EFL classes to facilitate the learners' mastery of language skills in the learning process.

There are various approaches and methods that can be used to develop reading comprehension. One of these approaches is the multisensory approach that can be used to help pupils overcome their reading comprehension problems. The term multisensory approach is used to refer to using the five senses in the classroom regularly. Multisensory can be used at any time during the teaching and learning of reading. It can be supportive to start a lesson and keep the learners active in learning. It activates learners at classes and can be used as a source of improving learning environment. The multisensory approach is a wonderful medium in enhancing teaching and learning, so using multisensory approach would certainly break boring learning environment.

The main goal of this approach is to teach pupils to read by using different senses. According to Davis (2011), pupils / students can learn better by remembering the letters if they see them, pronounce, and write the letters. Davis (2011) also added that Orton was the first one to bring the notion of blending sounds together to read a new word. There are different advantages involved in the multisensory approach such as the visual and the auditory methods. In fact, the visual method focuses on teaching the student to identify a specific letter from other letters and link them to their sound when they are shown the letters. In the auditory method, the pupil / student is trained to identify the auditory sounds and point to the letters when they hear the sounds.

There are also, touch activities which encourage the pupils / students to use their fingers and hands in writing the letter or drawing it in the air. Davis (2011) stated that the physical engagement of touching the grapheme encourages the pupils/student to stay focused. In this way, the student can imprint the shape of the grapheme in the mind which enhances the student's ability to remember the sound or the letter. So, Schneider and Evers (2009) recommended using the multisensory approach for teaching English literacy to English language learners.

Multisensory learning is good for teaching pupils/students to activate all their senses which are seeing, hearing, and thinking in a variety of situations. In multisensory learning, teachers attract students through visual, auditory, and olfactory stimuli, and then link the activity to relevant academic objectives. Thus, multisensory learning techniques enable learners to recall more than one meaning, so that they can interact with the material and retain or remember what they have learned for a longer time.



Multisensory learning techniques can make learning enjoyable as thinking takes place in the realm of the senses (Baines, 2008). In the same line of thought, multisensory techniques enable learners to get phonemes from the language. This is a better way than having to memorize thousands of words by sight. Moreover, daily practice of sounds and a lot of word decoding practice will help them to master the language. In addition, multisensory activities introduce a good sequence of sounds to avoid confusion so that, students will constantly have a successful reading experience.

Multisensory is defined as using visual, auditory and kinesthetic modalities, sometimes at the same time" (Obaid, 2013). This implies that the multi-sensory approach is the use of strategies involving human senses including visual (what we see), auditory (what we hear), kinesthetic and tactile (what we do or feel) to enhance learning. All these strategies can help to retain information in learners' brain for the long term in its real sense through seeing, hearing, touching and feeling. This approach encourages learners to learn from their experiences by using more than one sense.

According to Maheshwari (2016), the process of using these strategies occurs naturally and it starts even before birth. The infants usually learn about their surrounding through observing, listening including putting everything within reach into their mouths. When they grew up as toddlers, they tend to touch or grab everything they see around them, when they reached the preschoolers' age, they will ask about their surroundings even sometimes it seems like millions of questions. Based on this, it is seldom to teach them how to do these things since they are learning in a very natural way. This will enable the teachers to use the same strategy to proceed with the process in their classrooms

Using the multisensory approach to reduce reading comprehension problems can be helpful, because in this method children learn phonemes and letters together. The pupil / student learn the name of letters at first and then he /she learns their sounds. After this stage, the pupil / student pronounce the sound and pursue letters and write them based on what he /she is memorized. In short, multi-sensory instruction is referred to as teachers proceeding instruction through various senses to result in pupils' learning. Allowing the pupils / students to receive information through eyes, ears, mouth, or hands could have students more efficiently comprehend and memorize the learned knowledge. Accordingly, multi-sensory instruction allows students to receive the content of teaching materials through visual observation, ear listening, or kinesthetic touching to further enhance the learning outcomes and motivation. (Faryar & Rakhshan, 2010).

1.2. Context of the problem

From the researcher's experience as an English language teacher at the primary stage it was found that there was a lack of EFL reading comprehension skills among primary school pupils. It was noticed that many pupils do not have many of EFL reading comprehension skills. They read words –for- word mispronounce some words and have difficulty understanding what they read. Several studies (Youssif (2014); Ibrahim (2016); Al-shazli (2017); Abdeldayem (2016); El Khalyfa (2019); El- behery (2019). confirmed that there is a lack of reading comprehension skills among pupils. This might be due to the conventional methods some teachers use in teaching reading comprehension.

To document the problem, a pilot study was conducted by the researcher to find out the weaknesses of primary school pupils in EFL reading comprehension skills. The participants were 20 pupils other than those participating in the study. They were taken from Ezbet Abo Atts primary school for boys and girls. The test measured the pupils' ability to read with comprehension. The results of the pilot study confirmed the pupils' weakness as about 70/ of them lack reading comprehension skills.

1.3. Statement of the problem

The problem of the current study was represented in the weakness of 3rd primary school pupils in EFL reading comprehension skills. Many of them are unable to comprehend sounds or words, decode words and recognize words. They had some reading problems. Such weakness might be due to several reasons such as unsuitable teaching and learning methods and approaches used to enhance reading. That is why the current research attempted to investigate the multisensory approach and its effect on developing primary stage pupils' reading comprehension.

1.4. Questions of the study

To solve the problem, the current study attempt to answer the following main question:-

What is the effect of using multisensory approach on developing reading comprehension skills among primary school pupils?

Out of this main question, the following sub- questions are derived:

- 1- What are the reading comprehension skills that should be developed by 3rd primary pupils?
- 2- What is the effect of multisensory approach on the development of overall reading comprehension skills?
- 3- What is the effect of multisensory approach on the development of each reading comprehension skills?

1.5. Hypotheses of the study

1. There is a statistically significant difference at the (0.01) between the mean scores of the control and the experimental groups on overall EFL reading comprehension skills posttest in favor of the experimental group.
2. There is a statistically significant difference at the (0.01) between the mean scores of the control and the experimental groups on each of EFL reading comprehension skills in favor of the experimental group.

1.6. Aims of the study

The present study aimed to develop 3rd primary pupils' reading comprehension skills through the multisensory approach.

1.7. Significance of the study

The current study might be significant to:

1. Primary School pupils: as it helps them to develop some reading comprehension skills through the multisensory approach.
2. Teachers of English as a foreign language: as it provides them with a new approach in teaching reading comprehension skills, namely multisensory approach that enables them to develop their pupils' reading comprehension.
3. Curriculum designers: as it draws their attention to the multisensory approach and how to incorporate senses in general and multisensory approach in particular to develop EFL reading comprehension skills in addition to other language skills.

1.8. Participants of the study

A group of sixty-four third year primary pupils randomly selected from Ezbet Abo Atts primary school pupils, in the academic year 2021-2022. They were divided into two groups: an experimental group (No=32) and a control group (N=

32). The experimental group pupils were taught using multisensory approach, while the control group pupils received regular instruction.

1.9. Delimitations of the study

1. A group of sixty-four third year primary school pupils at Ezbet Abo Atts primary school for boys and girls.
2. Some EFL reading comprehension skills such as (Literal comprehension skills, Inferential comprehension skills, and Critical comprehension skills)
3. The first semester of the academic year (2021-2022).

1.10. Instruments and materials of the study

In order to fulfill the aim of the present study, the researcher prepared and used the following instruments:

1. An EFL reading comprehension skills checklist.
2. An EFL reading comprehension skills test.
3. A teacher's guide.

1.11. Definition of terms

1-EFL reading comprehension:

Brummit-Yale (2008) defined reading comprehension as understanding what one is reading. It is the result of a series of processes that operate during reading to create a mental representation of the situation described by the text, referred to as a situation model. Brummitte-Yale (2008) defined reading comprehension as the act of understanding what one is reading.

Reading comprehension is defined operationally as 3rd primary pupils' acts of thinking and constructing meaning in pre-reading, while reading and post-reading stages, and became able to skim, scan and guess the meaning of unfamiliar words

2 -Multisensory approach

- 1- Bradford (2008) mentioned that that using a multisensory approach in teaching means simply to use more than one sense in learning the new task, In other words, multisensory approach received its name because all the

new skills that can be learnt are presented to the students via sight, sounds, and kinesthetic means.

- 2- Sprenger(2008), multisensory approach to learning is the continual use of the five senses, including the use of body movement, to teach abstract concepts , making them concrete and accessible for memory , usage and transference. It refers to using several modalities at one time to strengthen neural pathways. The term is defined operationally as the approach that relies on the senses and using the multisensory activities and techniques to help 3rd primary pupils to develop their reading skills.

Review of Literature and Related studies

Research in reading English as a second or a foreign language has shown that reading is not the step- by- step process of building up letters into words or joining words to form sentences (Abdella, 2013). On the contrary, reading is a complex interaction between the reader and the text. On the other side the reader makes sense of the text using both-textual and non- textual factors. Reading is a psychological guessing game that depends on the interaction between thought and language.

Purposes of Reading

Reading has a variety of purposes such as: reading for studying, reading for comprehension and for pleasure. Reading for studying is also called reading for information. It refers to mastering what is being read and involves a few reading and taking notes to summarize what has been read, it is not what is read but the reader's enjoyment of what is read. One of the most important purposes of reading is to comprehend the text that is being read. If Comprehension does not take place, this will guide the pupils/students to decipher words and complex structures to understand the text.

The goal of the reading process

In the last few decades, reading gained considerable attention in English as a foreign language by both teachers and researchers due to its importance for pupils and professionals in several fields. That means one reason for reading is that understanding may not be total, but the best thing to understand what is said. This means that, reading is not the step by step process of building up letters into words, relating written words to their spoken, or joining words to form sentences. On the contrary, reading is a highly complex interaction between the reader and



the text, in which the reader makes sense of text by using both textual and non-textual clues. Huang & Hsu (2005) confirmed that any language learning will be involved in a lot of reading, so does English learning. Those who are good at English, all have to read extensively. So, those who read a lot can master English effectively that they confirm the importance of reading from the perspective of an English expert.

Nature of reading comprehension

Reading comprehension has various definitions for examples, Brummit-Yale (2008) defined reading comprehension as a result of this, understanding what one is reading. It is the result of a series of processes that operate during reading to create a mental representation of the situation described by the text, referred to as a situation model. The resulting mental representation includes the Information provided by the propositional content of the text that is integrated with the reader's knowledge to provide an evolving understanding of what reading is Brummit-Yale (2008) defined reading comprehension as the act of understanding what one is reading.

Comprehension is the basic goal of reading and the active process of constructing meaning from text. Reading comprehension is a complex interaction between the automatic and strategic cognitive processes that enables the reader to create a mental representation of the text (Vanden Broek, &Espin, 2012). Comprehension depends on the characteristics of the reader, such as basic reading skills, decoding, vocabulary and sensitivity to text structure.

Reading comprehension is referred to pupils' acts of thinking and constructing meaning in pre-reading, while reading and post-reading stages. It is one of the main language skills that require making inferences and understanding the details in written materials, and it is expected that it will be acquired by pupils at primary school. In fact, reading comprehension is placed at the heart of many school subjects as it plays a key role in the process of cognitive development (Bulut, 2017).

Reading comprehension is the process that initiates with very complicated activities regardless of text language. Some aspects of reading comprehension might include the gradual building up of understanding as reading takes place. The meaning of words is made easier. The making of connections between the different parts of a text aims to support interpretation, support for comprehension

by scanning and indicating the sentence structure, punctuation and extensions of the skills. (Clarke, Truelove, Hulme, & Snowling, 2013).

Santi and Reed (2015) indicated that there are many approaches to understanding and modeling reading comprehension these approaches focus more on describing component skills that help in text in comprehension and describe the process of comprehension or how comprehension of text unfolds over time to result in the construction of the situation model. So, these approaches represent different levels of investigation and explanation.

Importance of reading comprehension

Reading comprehension is one of one the basic skills in EFL classrooms. It is the core of the curriculum in the foreign language learning for several reasons (Medina, 2012; Behjat, 2011; Afida, 2008). These are as follows.

- 1). It is functions as a means of increasing pupil's knowledge of the language being learnt.
- 2). It is one of the most commonly used language skills in everyday life as a witness by use of the internet.
- 3). It gives a big contribution to learners to perform their communication skill better.
- 4). It helps the pupil to find meaning in what is read.
- 5). It helps pupils construct meaning by focusing on the relevant features of a text and to relate those features to their prior experiences.
- 6). It gives a big contribution to learners to perform their communication skill better.

Assessment of reading comprehension

Reading assessment can be done by asking pupils to read and answer some questions about what they have read. Formats include multiple choice, short answers and cloze or fill-in-bank questions. So, teachers can assess pupils' comprehension strategies through asking question while reading, writing summaries, creating outlines by following them up while they read or by asking them about the strategies that they use.



The role of the senses in the learning process

Pitts (2012) stated that pupils rely heavily on their senses to process information when learning. Using multisensory allows more cognitive connections and 20 associations to be made with a concept. This means it is more easily accessible to pupils/students as there are more ways the information can be triggered and retrieved from their cognitive learning center. So engaging all the senses will maximize the retention of information, each of the senses has a role and provide different information from different stimuli received. He explains the role of the senses in the teaching learning process as follows:

3 History of Multisensory Language Education

Using multisensory instruction dates back to the late 1930s. Orton's neurological research (Orton, 1937; Hornsby & Shear, 1980) on children who do their best to learn how to read led him to identify the condition 'strephosymbolia'; to appreciate the work of Helen Keller and Grace Fernald who were using kinesthetic methods and modalities to reinforce visual and auditory associations; and to build on this concept. Orton proposed the use of all sensory methods and modalities to improve 'weak memory patterns' in teaching reading (Johnson, 1967). Orton's pioneering concept led to the Orton-Gillingham program, put together by Anne Gillingham at the request of Orton himself. At this early stage, Orton understood the importance of multisensory techniques, the concept of metacognition in learning and to use these techniques when other processes are challenging to the reading situation.

The nature of multisensory learning

Multisensory learning is useful for teaching as it requires pupils to activate all their senses which are seeing, hearing, and thinking in a variety of situations. Because common senses indicate that students learn in different ways, and this means students learn more effectively when several senses are interconnected. In multisensory learning, teachers attract pupils'/students' through visual, auditory, and olfactory stimuli, and then link the activity to relevant academic objectives. Thus, multisensory learning techniques enable learners to recall more than one meaning so that they can interact with the material and retain or remember what they have learned for a longer time.

Multisensory learning techniques can make learning enjoyable as thinking takes place in the realm of the senses (Baines, 2008). In the same line of thought, multisensory techniques enable learners to get phonemes from the language. This is a better way than having to memorize thousands of words by sight. Moreover, daily practice of sounds and a lot of word decoding practice will help them to



master the language. In addition, multisensory activities introduce a good sequence of sounds to avoid confusion. So that students will constantly have a successful reading experience.

Multi-Sensory Approach and the learning process

According to Maheshwari (2016), the Multi-Sensory Approach occurs naturally and it starts even before birth. The infants usually learn about their surrounding through observing, listening including putting everything within reach. When they grew up as toddlers, they tend to touch or grab everything, and see around them. When they reach the preschoolers' age, they will ask about their surroundings even sometimes it seems like millions of questions. Based on this, it is important teach them how to do these things since they are learning in a very natural way. This will enable the teachers to use the same energy and strategy to proceed with the process in their classrooms.

When teachers use this approach to teach the learners, they will encourage them indirectly to collect information about a task. When they have gone through the learning experience by doing different kinds of activities, it will help them to gather the information and store it in their brain better as compared to using only the senses of hearing and seeing because it provide more ways to remember the input and more ways to recall it in their learning later. It also aids learners to relate the information to ideas they already know and understand by conducting different types of activities.

Implementation of multisensory approach in the classroom

It is true that learners may learn faster, easier and could retain information when taught using the strategies that match with their learning styles. Learners with learning disabilities also enjoy learning using the multisensory approach. Brophy (2007) argued for using the multisensory approach that helps pupils learn through various senses. A lot of teaching methods are done using either auditory or visual. He added that visual sense used in reading by looking at text images and reading the tasks from the board. The sense of hearing is used by listening to what the teacher says. Sometimes, the visual and the auditory processing of the learners with learning difficulties are weak and they have some difficulties. There is a logical solution to these difficulties, which is to use more of the pupils' senses; visual, auditory or kinesthetic and the use of touch. This helps the children's brain to develop memories.

The multisensory approach could be used to help pupils in learning. According to Gordon (2010), the multisensory approach is a good tool for

strengthening language teaching in three ways. The first way helps get information, the second way helps the learners process the information and the third way assists learners easily retrieve information already learned. Simply using a variety of senses opens up more pathways into the brain. In fact visual simulations have a lot of benefits in the classroom. Additionally, Ewy (2003) explained that visual stimulation is fundamental for learning because it is necessary for comprehension.

1) Results

4.1. Hypothesis one:

The first hypothesis states that "There will be a statistically significant difference at the 0.01 level between the mean scores of control and the experimental groups on the post measurement of the overall Reading Comprehension Test in favor the experimental group.

t-test to compare the mean scores of two groups was computed in the post administration of the overall reading comprehension test. The results were as shown in the following table (9):

Table (9): t- test differences between the control and experimental groups' mean scores in the post administration of the overall reading comprehension test.

Group	No	Mean	S. D	D. F	t-value	Sig	Level of sig.
Control	32	15.1	0.9	62	43.3	sig.	0.01
Experimental	32	27.4	1.3				

* The tabular value of t-test at the level of (0.01) and 62 D.F is (2.66).

In light of the results of table (9) it is clear that the calculated t-value of is 43.3, exceeding its tabular value of 2.66 at a degree of freedom 62 at a level of statistical significance (0.01). These results indicate that there is a statistically difference between the mean scores of the experimental and control groups in the post administration of the overall reading comprehension test in favor of the experimental group. This finding can be clarified using the following graphical representation:

Figure (6): The experimental and the control groups' mean scores on the post-administration of the overall reading comprehension test.

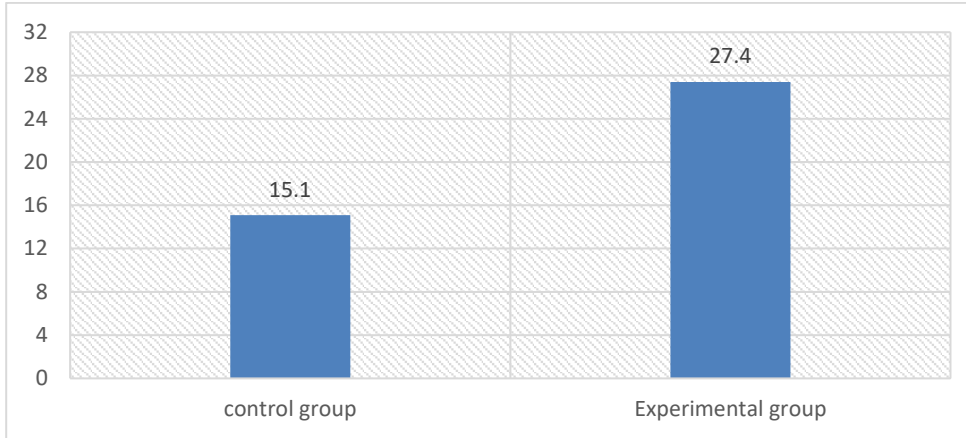


Figure (6) confirmed that there was a statistically significant difference at the ($\alpha \leq 0.01$) level between the mean scores of the experimental group that was taught using multisensory approach and the control group that received regular instruction in the post-administration of the overall reading comprehension test in favor of the experimental group.

In order to calculate the effect size of multisensory approach on developing reading comprehension for third year pupils, the statistical significance alone was not sufficient to determine the importance of the results. Thus, the practical significance and the educational importance of the results should be clarified by determining the value of the ETA square.

Table (10): The effect size of multisensory approach on developing overall reading comprehension.

Group	D. F	t-value	Sig.	η^2 value	Effect size
Control				value	Sig. Value Level
Experimental	62	43.3	0.01	0.96	Sig. 10.9 Large

Based on the previous results, it becomes clear that the value of the ETA squared for the results of the control and experimental groups in overall reading comprehension test exceeds the value indicating the educational importance of the statistical results which is estimated at (0.15). This indicates the positive effect of multisensory approach on developing reading comprehension.

4.2 Second hypothesis

The second hypothesis stated that "there will be a statistically significant difference at the 0.01 level between the mean scores of control and the

experimental groups on the post measurement of the reading comprehension skills. t-test was used to compare the mean scores of the two groups (experimental and control) in the post administration of the reading comprehension test. The results were shown in the following table (11)

Table (11): t- test differences between the control and experimental groups' mean scores in the post administration of the Reading Comprehension (1: Literal comprehension skills) Test.

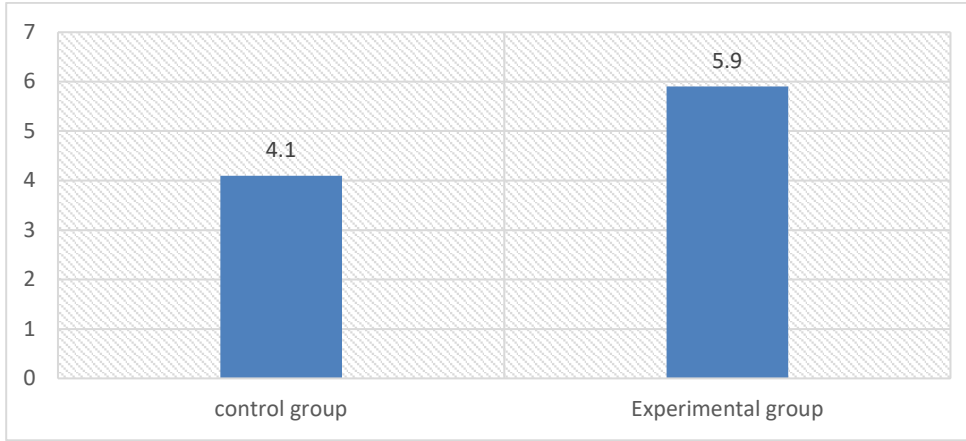
Group	No	Mean	S. D	D. F	t-value	Sig	Level of sig.
Control	32	4.1	0.7	62	7.68	sig.	0.01
Experimental	32	5.9	1.1				

* The tabular value of t-test at the level of (0.01) and 62 D.F is (2.66).

In light of the results of the previous table (11), it is clear that the calculated t-value of is 7.68, exceeding its tabular value of 2.66 at the degree of freedom 62 at a level of statistical significance (0.01). These results indicate that there is a significant difference between the mean scores of the experimental and control groups in the post administration of each reading comprehension test in favor of the experimental group. This finding can be clarified using the following graphical representation.

Table(11) confirmed that there was a statistically significant difference at ($\alpha \leq 0.01$) level between the mean scores of the experimental group that was taught using the multisensory approach and the control group that received regular instruction in the post-administration of the Reading Comprehension (1: Literal comprehension skills) Test in favor of the experimental group.

Figure (7): The experimental and control groups' mean scores on the post-administration of the reading comprehension (1: Literal comprehension skills) test.



In order to calculate the effect size of multisensory approach on reading comprehension (1: Literal comprehension skills) for third year pupils students, the statistical significance alone was not sufficient to determine the importance of the results. Thus, the practical significance and the educational importance of the results should be clarified by determining the value of the ETA squared and its significance and the value of the effect size and its significance. The results are illustrated in the following table.

Table (12): The effect size of multisensory approach on developing reading comprehension (1: Literal comprehension skills).

Group	D. F	t-value	Sig.	η^2 value	Effect size
Control				value	Sig. Value level
Experimental	62	7.68	0.01	0.49	Sig. 1.95 Large

Based on the previous results, it becomes clear that the value of ETA squared of the results of the control and experimental groups in reading comprehension (1: Literal comprehension skills) test exceeds the value indicating the educational importance of the statistical results. This indicates the large effect of multisensory approach on developing Reading Comprehension (1: Literal comprehension skills). Thus, teaching through multisensory approach to enhance reading comprehension (1: Literal comprehension skills) for third year pupils was effective.

- **Regarding the inferential comprehension of reading comprehension skills.**

t-test was computed to compare the mean scores of the experimental and control groups in the post administration of reading comprehension (2: Inferential comprehension skills test and determine the statistical significance of the difference between them. The results were shown in the following table (13).

Table (13): t- test differences between the control and experimental groups' mean scores in the post administration of the Reading Comprehension (2: Inferential comprehension skills) Test.

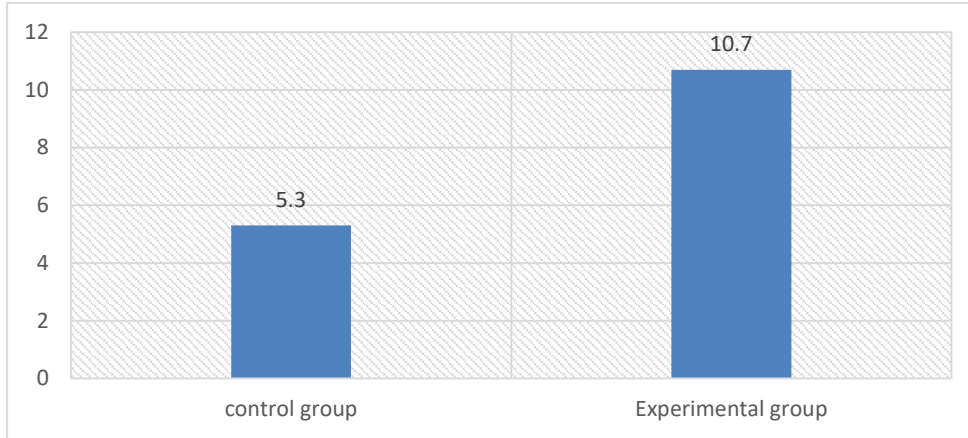
Group	No	Mean	S. D	D. F	t-value	Sig	Level of sig.
Control	32	5.3	1.0	62	17.47	sig.	0.01
Experimental	32	10.7	1.4				

* **The tabular value of t-test at the level of (0.01) and 62 D.F is (2.66).**

In light of the results of the previous table (13) it is clear that the calculated t-value of is 17.47, exceeding its tabular value of 2.66 at the degree of freedom 62 at a level of statistical significance (0.01). These results indicate that there is a statistical difference between the mean scores of the experimental and control groups in the post administration of the reading comprehension (2: Inferential comprehension skills) test in favor of the experimental group. This finding can be clarified using the following graphical representation.

Table (13) confirmed that there was a statistically significant difference at the ($\alpha \leq 0.01$) level between the mean scores of the research participants of the experimental group that was taught using the multisensory approach and the control group that received regular instruction in the post-administration of the Reading Comprehension (2: Inferential comprehension skills) test in favor of the experimental group.

Figure (8): The graphical representation of the control and experiment groups mean scores on the post-administration of the reading comprehension (2: Inferential comprehension skills) Test.



In order to calculate the effect size of multisensory approach on developing reading comprehension (2: Inferential comprehension skills) for third year pupils, the statistical significance alone was not sufficient to determine the importance of the results. Thus, the practical significance and the educational importance of the results could be clarified by determining the value of the ETA squared and its significance and the value of the effect size and its significance. The results are illustrated in the following table.

Table (14): The effect size of multisensory approach on developing Reading Comprehension (2: Inferential comprehension skills).

Group	D. F	t-value	Sig.	η^2 value	Effect size
Control				value	Sig. Value level
Experimental	62	17.47	0.01	0.83	Sig. 4.43 Large

Based on the previous results, it becomes clear that the value of ETA squared of the results of the control and experimental groups in reading comprehension (2: Inferential comprehension skills) effects the educational importance of the statistical results. This indicates the large effect of multisensory approach on developing Reading Comprehension (2: Inferential comprehension skills). Thus, teaching through multisensory approach to enhance reading comprehension (2: Inferential comprehension skills) for third year primary pupils was effective.

- As for critical reading comprehension (3: Critical comprehension skills):

t-test was computed to compare the mean scores of the experimental and control groups in the post administration of reading comprehension (3: Critical comprehension skills) test and determine the statistical significance of the difference between them. The results were shown in the following table (15):

Table (15): t- test differences between the control and the experimental groups' mean scores in the post administration of the reading comprehension (3: Critical comprehension skills) Test.

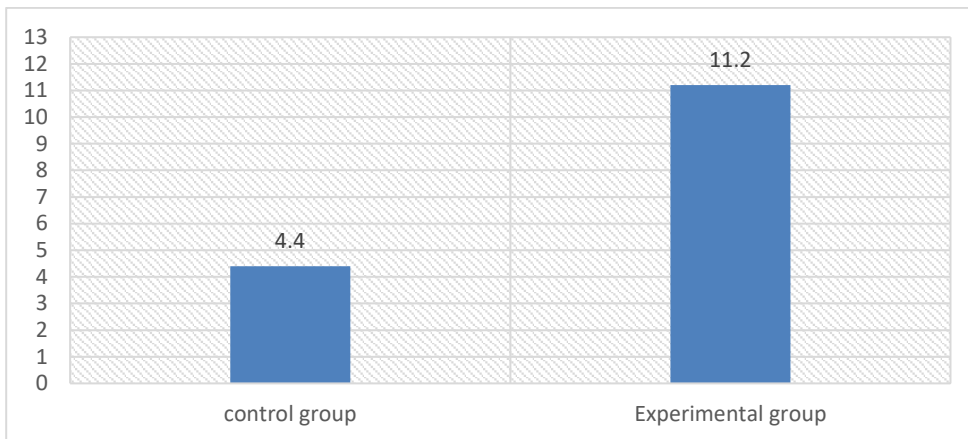
Group	No	Mean	S. D	D. F	t-value	Sig	Level of sig.
Control	32	4.4	0.5	62	27.18	sig.	0.01
Experimental	32	11.2	1.3				

* The tabular value of t-test at the level of (0.01) and 62 D.F is (2.66).

In light of the results of the previous table (15) it is clear that the calculated t-value of is 27.18, exceeding its tabular value of 2.66 at the degree of freedom 62 at a level of statistical significance (0.01). These results indicate that there is a real difference between the mean scores of the experimental and control groups in the post administration of the reading comprehension (3: Critical comprehension skills) test in favor of the experimental group. This finding can be clarified using the following graphical representation.

Table (15) confirmed that there was a statistically significant difference at the ($\alpha \leq 0.01$) level between the mean scores of the research participants of the experimental group that was taught using the multisensory approach and the control group that received regular instruction in the post-administration of the reading comprehension (3: Critical comprehension skills) Test in favor of the experimental group.

Figure (9): The graphical representation of the control and experimental groups' mean scores on the post-administration of the reading comprehension (3: Critical comprehension skills) test.



In order to calculate the effect size of multisensory approach on developing reading comprehension (3: Critical comprehension skills) for third year primary pupils, the statistical significance alone was not sufficient to determine the importance of the results. Thus, the practical significance and the educational importance of the results should be clarified by determining the value of the ETA squared and its significance and the value of the effect size. The results are illustrated in the following table.

Table (16): The effect size of multisensory approach on developing reading comprehension (3: Critical comprehension skills).

Group	D. F	t-value	Sig.	η^2 value	Sig.	Effect size Value	Effect size level
Control							
Experimental	62	27.18	0.01	0.92	Sig.	6.9	Large

Based on the previous results, it becomes clear that the value of ETA squared of the results of the control and experimental groups in the Reading Comprehension (3: Critical comprehension skills) test exceeds the value indicating the educational importance of the statistical results. This indicates the positive effect of the multisensory approach on developing Reading Comprehension (3: Critical comprehension skills).

Further, the effect size also reached (6.9), which is large. It indicates the practical and educational significance of the results. Thus, teaching through the



multisensory approach enhanced reading comprehension (3: Critical comprehension skills) for third year pupils.

Discussion of the results:

The results of both experimental and control groups on the reading comprehension post-test showed that the multisensory approach had a positive effect on developing the experimental group pupils' overall reading comprehension skills as well as each of the reading comprehension sub-skills of third year primary stage pupils. They revealed that there was a significant difference between the experimental and the control groups' mean scores in the post-test of the overall reading comprehension skills in favor of the experimental group. The pupils of the experimental group exhibited improvement in overall as well as in each of reading comprehension sub skills that included (1: Literal comprehension skills - 2: Inferential comprehension skills - 3: Critical comprehension). Such improvement and development are due to using of multisensory approach.

Using multisensory approach encouraged the pupils to read and carry out the tasks and activities provided for pupils to practice. The pupils were provided with plenty of opportunities that enhanced interaction among them. In addition, multisensory approach created a good environment that helped pupils improve their EFL reading comprehension. Multisensory approach created a –more-student- centered environment reading class where pupils practice reading individually and in groups. Co-operative learning helped them work together and benefit from each other. They could confer and discuss their reading comprehension together.

Encouragement and positive feedback on the part of the researcher helped the pupils read without any fear. They asked each other and revised each other's work. The teacher tolerated their minor mistakes and was supportive all the time. This helped pupils become interested and engaged. Using the senses and paying more attention to the various learning styles e.g. visual, auditory and kinesthetic helped the pupils learn better through pictures, listening and discussion. The teacher provided several activities that appeal to the pupils' senses and interests. The researcher used formative assessment represented in exercises and questions at the end of each session. She also used summative assessment represented skills posttest.

The results of the present study are consistent with previous research finding. These include Gharaibeh and Dukmak(2021), Srivastava (2019) and Mora(2018). They confirmed that the multisensory approach helped improve the

pupils' literal comprehension skills. The results are also in agreement with Parra (2021), Romero (2020) and Sarudin(2019) that proved the positive effect of the multisensory approach on developing the pupils' reading skills. Furthermore, the results are also in line with Eroğlu(2021), Fitzgerald (2021), and Benrezkallah and Bouhania (2020) that confirmed the effectiveness of the multisensory approach in developing primary pupils' critical reading skills.

Recommendations

In accordance with the findings and conclusions of the current study, the following recommendations were presented:

- 1- EFL teachers should increase the students' role in reading classes and minimize their own role.
- 2- EFL reading comprehension skills should be given more attention in our EFL classes. More time and efforts should be exerted to develop the main skill and its sub-skills.
- 3- Pupils should be aware of the different reading comprehension skills that have to be mastered.
- 4- The multisensory approach is recommended to be implemented in teaching EFL reading comprehension skills to primary stage pupils.
- 5- Providing a good atmosphere helps pupils to learn and improve their achievement.
- 6- EFL teachers should motivate and stimulate pupils at the various stages to communicate to succeed at school and outside school.
- 7- As the reading comprehension skill is so important, it should receive the appropriate attention it deserves. So more focus should be given to it in different educational stages.
- 8- More teachers who teach at the primary stage should be encouraged to use the multisensory approach regularly.
- 9- Teacher should be provided with specific training programs to use the multisensory approach to teach English language skills.
- 10- There should be technical support strategies for teachers who regularly use the multisensory approach and activities so that they can feel genuinely supported.
- 11- More consideration should be taken to enhance students' the pupils' awareness of the reading comprehension skills through implicit instruction in the early stage of education explicit instruction from the early classes.

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