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# The Effect of Using Metacognitive Monitoring Strategy on Developing Reading Comprehension in English Language among Tenth Grade Students in North Eastern Badiah Directorate of Education

**Cover Page Footnote**

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## **The Effect of Using Metacognitive Monitoring Strategy on Developing Reading Comprehension in English Language among Tenth Grade Students in North Eastern Badiah Directorate of Education**

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### **Abstract:**

This study aimed at exploring the effect of using metacognitive monitoring strategy on developing reading comprehension in English language among tenth grade students in North Eastern Badiah directorate of education. The study used the quasi experimental design. The sample of the study consisted of 123 male and female students who were purposefully chosen from the tenth grade students at Alkaum Alahmer comprehensive secondary school for girls, Alkaum Alahmer comprehensive secondary school for boys, Um Aljemaal comprehensive secondary school for girls and Um Aljemaal comprehensive secondary school for boys. The experimental and control groups were assigned randomly. The groups of the study were found equivalent upon analyzing students' scores on reading comprehension test using 2-way ANCOVA. The experimental groups were instructed using metacognitive monitoring program whereas, students of the control group were taught in the conventional way. A jury of judges was invited to comment on the reading test and the instructional program to establish their validity. At the end of the program, the researcher administered the reading comprehension test. Means and standard deviation for students' scores on the reading comprehension test were calculated. Then 2- way ANCOVA was calculated to examine the effect of the strategy. The findings of the study revealed that there were statistically significant differences at ( $\alpha = 0.05$ ) between students' total achievement of the experimental groups and the control groups in the reading comprehension in favor of the experimental group and that there was no interaction between the use of metacognitive monitoring strategy and gender on tenth grade students' reading comprehension. In the light of the findings, the researcher suggested some recommendations to The Ministry of Education and TEFL educators.

**Key Words:** metacognition, metacognitive monitoring, comprehension monitoring, reading comprehension.

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## أثر استخدام إستراتيجية الرقابة ما وراء المعرفية على الاستيعاب القرائي في اللغة الانجليزية لطلبة الصف العاشر الأساسي في مديرية تربية البادية الشمالية الشرقية

### ملخص:

هدفت هذه الدراسة إلى كشف أثر استخدام إستراتيجية الرقابة ما وراء المعرفية على تطوير الاستيعاب القرائي في اللغة الانجليزية لطلبة الصف العاشر الأساسي في مديرية تربية البادية الشمالية الشرقية. استخدم الباحث التصميم شبه التجريبي . تكونت عينة الدراسة من 123 طالب وطالبة حيث تم اختيارهم بطريقة قصديه من أربعة مدارس هي مدرسة الكوم الأحمر الثانوية الشاملة للبنات ، مدرسة الكوم الأحمر الثانوية الشاملة للبنين ، مدرسة أم الجمال الثانوية الشاملة للبنات ومدرسة أم الجمال الثانوية الشاملة للبنين وتم توزيع المدارس على المجموعات بشكل عشوائي.

قام الباحث بإعداد برنامج تدريبي قائم على الرقابة ما وراء المعرفية لتدريس المجموعات التجريبية بينما تم تدريس المجموعات الضابطة بالطريقة الاعتيادية . في نهاية التجربة تم تطبيق اختبار الاستيعاب القرائي الذي أعده الباحث وتم التأكد من صدقه بعرضه على مجموعة من المحكمين. ومن أجل الإجابة عن أسئلة الدراسة تم حساب المتوسطات الحسابية والانحرافات المعيارية لعلامات المجموعات ثم استخدم الباحث تحليل التباين الثنائي لدراسة أثر استخدام إستراتيجية الرقابة ما وراء المعرفية والجنس والتفاعل بينهما على الاستيعاب القرائي للطلبة وقد أظهرت النتائج وجود أثر لإستراتيجية الرقابة على الاستيعاب القرائي لصالح المجموعة التجريبية وأظهرت كذلك عدم وجود أثر للجنس وللتفاعل بين الإستراتيجية والجنس على الاستيعاب القرائي للطلبة . وفي ضوء نتائج الدراسة قُدمت بعض التوصيات التربوية لوزارة التربية والتعليم ومعلمي اللغة الانجليزية .

**الكلمات المفتاحية:** ما وراء المعرفة ، الرقابة ما وراء المعرفية ، رقابة الاستيعاب ، الاستيعاب القرائي.

## **1. Introduction:**

English language has become more dominant around the world. People all over the world have given English instruction great importance, and there is an increasing interest in language learning and strategies of teaching language. Teachers and students can benefit from the "growing body of research that describes how learning strategies can help students improve their acquisition of language skills" (Hussein, 2007, p.1). Teachers and students can find references that list many learning strategies with explanation of applying them to all language skills.

Metacognition is considered a main component of teaching and learning. Manning and Payne (1996) claimed that quality of teaching is determined by different factors. One of these important factors is the regulation of metacognitive strategies. Other researchers reported that the implementation of metacognitive strategies help learners to perform unique processes such as thinking about thinking and decision making. (Liebler, 2000; Foster, 2000).

The term metacognition was originally coined by John Flavell in the late 1970s to mean "thinking about thinking ". (Flavell, 1979, p.906; Ratibi, 2013). " Metacognition is awareness of one's own thinking , awareness of the content of one's conceptions, an active monitoring of one's cognitive processes, an attempt to regulate one's cognitive processes in relationship to further learning, and an application of a set of heuristics as an effective device for helping people organize their methods of attack on problems in general ".(Hennessey,1999,p.3)

Metacognition has two components: Knowledge about cognition and monitoring or regulation of cognition (Cubukcu, 2008). Knowledge about cognition includes knowledge about one self as a learner and the factors that may affect cognition, knowledge about strategy and the types of strategies likely to be useful, and knowledge about why and when to use strategies. Regulation of cognition is the monitoring of learner's cognition which has two components: The first one is evaluation of progress toward a cognitive goal and the efficacy of monitoring strategies. The second one is regulation of learning activities by using corrective strategies (Khonamri, 2011)

In language classrooms, teachers can help students to improve their language abilities by modeling, explaining the needed language strategies, and giving their students the chance to apply, practice, and use such strategies. They can also encourage students to practice metacognitive strategies in planning, monitoring, and evaluating learning processes. This is

necessary in developing self-regulated learning. Wenden (1998) claimed that learners are expected to construct their own understanding of knowledge and they should be encouraged by their teachers to be self-regulated learners. Few students receive instruction about regulating their learning in school, and few students have opportunities to regulate this process. Self-regulated learning is so important since it is an active process whereby learners state their goals for their learning and do their best to monitor, regulate, and control their cognition guided by their goals. (Pintrich, 2000)

Metacognitive monitoring or comprehension monitoring is an important strategy which involves evaluation, planning and regulation of learner's on going comprehension processes. Evaluation activity allows the learner to evaluate his understanding of the text and discover any comprehension failure. If there is any comprehension failure, the learner plan the learning activity by selecting strategy relevant to the comprehension problem. He also regulate the learning activity by applying the needed fix-up strategies to fix up the comprehension problem. Learners can use different fix-up strategies to deal with comprehension failures. These strategies are re-reading, asking for help, using dictionary, reading an additional text, making inferences, and reading ahead to make sense of the text. This strategy is considered as an important aspect of metacognition which encourage students to be aware of whether comprehension is occurring and be able to apply suitable strategies to correct comprehension (Zipke, 2007). It also helps learners by making "accurate metacognitive judgments regarding progress and make modifications based on those judgments" (Hoffman, 2010, p.46) Baker (1979) mentioned that "learners who monitor their comprehension know when they understand, when they don't understand, and when they partially understand ". In addition, learners know how to make sure that their understanding is adequate for their purpose or not. The National Reading Panel (2000) reviewed 204 studies with children and they recommended six strategies. Comprehension monitoring or (metacognitive monitoring) was one of these important strategies.

Reading comprehension is a fundamental skill in learning English. It is an active process by which reader construct meaning and it is a key for future success. Klinger (2007:2) defines reading comprehension as "The process of constructing meaning by coordinating a number of complex processes that includes word meaning, word and world knowledge , and

fluency "According to Smith & Robinson (1980:5) reading comprehension is defined as "understanding and, evaluating , and using of information gained through an interaction between the reader and the author ". The National Reading Panel (2000) defined reading comprehension as "intentional thinking during which meaning is constructed through interactions between text and reader. The content of meaning is influenced by the text and by the reader's prior knowledge and experience that are brought to bear on it. "

By supporting children to read at every age, we can help to ensure that children are equipped with the skills to succeed in life. It demands that the reader gets involved to understand unfamiliar words, and the major subject matters in the text and understand the writer's intention (VandenBroeck, 1994). Good readers set their own goals for reading, evaluate their progress toward their goals, monitor their understanding of the text, and modify the strategies they employ based on that understanding.

As noted above, reading comprehension is a demanding skill that learners need. EFL students still have difficulties in reading comprehension, and in applying metacognitive strategies. The researcher supposes that in order to overcome students' reading problems and improve their comprehension, teachers are in need to adopt explicit instruction of metacognitive monitoring strategies and encourage their students to use them independently during reading. The study comes to address the importance of using metacognitive monitoring (comprehension monitoring) strategy on developing reading comprehension among tenth grade students in Jordan.

## **2. Statement of the Problem:**

"Learning English in Jordan is still problematic and challenging despite the enormous amount of effort to improve the situation" (Khaled, 2013, p.270). Jordanian students rarely admire English as school subject and they don't try to read critically.

The researcher has become aware of this problem while teaching in government schools. Although the Jordanian English textbook is based upon the communicative approach which lays much emphasis on the learner's role in mastering English language, most English language teachers in Jordan use traditional approaches in teaching reading comprehension without encouraging their students to adopt and utilize crucial strategies such as metacognitive monitoring strategies where they can use them to assess and repair comprehension difficulties. Metacognitive strategies activates one's

thinking and leads to improvement in learning performances. (Anderson, 2002).

Wenden (1998) indicated that learners equipped with metacognitive abilities have the following advantages over those who are not aware of the role of metacognition in learning English language:

- They are strategic learners.
- Their rate of progress in learning, the quality and speed of their cognitive engagement is faster.
- They are more confident in their learning abilities.
- They provide accurate assessment of being successful learners.

The present study investigated the effect of using metacognitive monitoring strategy on developing reading comprehension among tenth grade students in North Eastern Badia directorate of education. There is a crucial need to explore the effect of using metacognitive monitoring (comprehension monitoring) which Jordanian teachers need in order to develop their students' reading comprehension as a tool to enhance their creative thinking skills. Metacognitive monitoring strategy is very important for the regulation of reading. It is needed to detect a lack of comprehension in order to be corrected. It helps learners by making them aware whether comprehension is occurring and the application of certain strategies to correct comprehension.

There is also an important need to find the way to encourage Jordanian students to have the opportunity to read in various situations and be aware of metacognitive strategy they use to construct meaning.

### **3. Questions of the study:**

This study seeks to answer the following research questions:

1. What is the effect of using metacognitive monitoring strategy on the reading comprehension of tenth grade students in North Eastern Badia directorate of education?
2. Is there an interaction between the use of metacognitive monitoring strategy and gender on tenth grade students' reading comprehension?

### **4. Hypotheses of the study:**

1. There are no statistically significant differences at ( $\alpha = 0.05$ ) between students' total achievement of the experimental and the control groups in the reading comprehension that may be ascribed to the use of metacognitive monitoring strategy.



2. There is no interaction between the use of metacognitive monitoring strategy and gender on tenth grade students' reading comprehension.

### **5. Purpose of the study:**

This study is intended to investigate the effect of using metacognitive monitoring strategy on developing reading comprehension in English language among tenth grade students in North Eastern Badia directorate of education.

### **6. Significance of the Study:**

This study is significant in that it opens the door for active use of metacognitive monitoring to develop reading comprehension of Jordanian students.

The current study on the effect of using metacognitive monitoring strategy on developing reading comprehension among tenth grade students in North Eastern Badia directorate of education is quiet significant since it is the only study which examines the effect of metacognitive monitoring strategy and its application in reading classes in the directorate.

The researcher hopes to highlight the value of using metacognitive monitoring in reading comprehension. Moreover, my study is triggered by the demand for the application of modern research in education which emphasizes the important role of learner and his individual capabilities. Furthermore, Students need to be taught how to monitor their comprehension by explicit instruction with modeling and guided practice.

Finally, the findings of this study may be of great value for learners through equipping them with effective application of metacognitive monitoring strategy in the process of learning reading comprehension skill.

### **7. Operational Definitions of Terms:**

**Metacognitive monitoring strategy** is a recommended strategy that allows learners to observe their thoughts and behaviors. It allows learners to observe their progress toward desired goals. It also helps learners by making accurate metacognitive judgments regarding progress and make modifications based on those judgments. This strategy can be taught to help students better comprehend reading (Hoffman, 2010).The effect of this strategy on reading comprehension will be measured by using a reading test prepared by the researcher.

**Reading comprehension** is an active process through which meaning is constructed. It refers to students' ability to get meaning from text. It often demands that the reader gets involved to understand the meaning of words,

and recognize the major subject matters in the text and conceive the writers' intention .(Vanden Broeck,1994).The researcher will measure students' achievement in reading comprehension by a reading test constructed for this purpose.

**Tenth grade students** are Jordanian tenth grade students at their last year of basic stage who learn in government schools and study Action pack 10.

### **8. Limitations of the study:**

- 1- This study was applied on tenth grade students in four public schools at North- Eastern Badia directorate of education .The participating schools were selected purposefully based on prior relationships with principals and cooperative teachers
- 2- The study was conducted during the first semester of the academic year 2016/2017.
- 3- The treatment of the experimental group was based on teaching module one, two and three of Action Pack 10 which consists of four units limited to reading comprehension.
- 4- The instruments used for collecting data.
- 5- Length of instruction time. More instruction time would have resulted in better effects.

### **9. Review of related studies:**

Paris & Turner (1991) examined the effect of comprehension monitoring and shed some light on the metacognitive strategies used by both good and poor readers. The study aimed to examine the differences between types of reading strategies used by readers in terms of selection of reading strategy, comprehension monitoring, activating prior knowledge, summarizing and analyzing .The study revealed that reading strategies used by proficient readers in reading classes differ from those used by poor readers.

Alshaihani (2002) carried out a study to investigate the effect of using metacognitive strategies in reading classes on the achievement of reading comprehension of first secondary class female students in public school in Muscat, Sultanate of Oman. The sample of the study consisted of 140 first secondary female students. They were distributed into two groups. The control group who were taught reading through using metacognitive strategies. The analysis of data collected showed that there were statistically

significant differences in the total achievement of reading comprehension between the two groups in favor of the experimental group.

Yang (2002) conducted a study to re assess both proficient and less proficient reader's comprehension monitoring .The finding of the study indicated that proficient readers displayed more competency in monitoring their on – going thinking process since they tended to monitor their reading process all the time .The proficient readers also employed higher level of comprehension monitoring . Teacher intervention enhanced the less-proficient reader's development of comprehension monitoring by providing student s with language knowledge as a resource for comprehension monitoring.

Abdel Hafez (2006) carried out a study to investigate the effect of a suggested training program in some metacognitive language learning strategies on developing listening and reading comprehension of first year EFL students. The sample of the study consisted of 80 first years EFL majors at the faculty of education, Minia University. They were divided into two groups: one as experimental group and the other as control group. Each group consists of 40 students. The study adopted a pre- post design. The experiment group received training in some metacognitive language learning strategies in listening and reading comprehension tasks; while the control group received no training in metacognitive strategies. Two test of reading and listening comprehension were used to measure the effects of the suggested training program. The results of the study revealed that the experimental group out performed the control group on the reading and listening tests , and training in metacognitive language learning strategies developed EFL learners' listening and reading skills .

Hussein (2007) explored the effect of an instructional programme based on using metacognitive strategies on the reading comprehension and writing performance of the secondary stage students in Jordan. The study used the quasi- experimental design. Sample of the study consisted of 120 male and female students equally divided into control and experimental groups. Students of the experimental group were instructed using the metacognitive strategies – based program, where as students of the control group were taught in the conventional way. The analysis of the test scores revealed that the experimental groups did better and there was no interaction between the instructional program based on using metacognitive strategies and gender on the reading and writing of the secondary stage students.

AbdElSamie (2008) carried out a study to examine the effect of comprehension monitoring strategy training on EFL low achievers' reading efficiency, recall, and perceived self-efficacy. The participants of the study were 48 EFL low achieving English majors enrolled in the fourth level at Riyadh Teachers college K.S.A during the second term of the academic year(2006-2007). The participants were randomly assigned to experimental and control group; each one of the previous groups consisted of 24 students. Both groups received the same reading practice. The experimental group received training in comprehension monitoring strategies. The study lasted for 12 weeks. The reading comprehension of study sample, recall, and self-efficacy were pre and post tested using two forms of reading comprehension test. A recall protocol and a foreign language reading self-efficacy scale were also administered by the researcher. Findings of the study revealed that experimental group out performed the control group in reading comprehension and recall which indicate the significant effect of comprehension monitoring.

Stevenson and Han(2008) conducted a study of comprehension monitoring Chinese EFL students in (L1) and (FL) reading. 126 students participated in the study. They completed a task of error detection in two reading texts in each language. Four students participated in interviews. ANOVA was used to analyze reading scores. Quantitative data were analyzed using content analysis. The results of the study revealed that participants performed better in metacognitive monitoring in L1 reading than in FL reading, and metacognitive monitoring does play important role in FL reading.

Hoffman (2010) conducted a study to examine the impact of teaching both graphic organizers and metacognitive monitoring strategies on the comprehension of 5<sup>th</sup> grade students reading expository science text. Participants of the study were 121 fifth-grade students from public schools in North Carolina. In this study the effect of teaching both graphic organizer and metacognitive monitoring strategies was compared with instruction in either graphic organizers or metacognitive monitoring strategies over the course of intervention which lasted for six weeks. The results of the study showed that students in the metacognitive monitoring and those in graphic organizer + metacognitive monitoring conditions showed increased reading comprehension scores.

In a study conducted by Crabtree, Morgan & Konrad (2010) which aimed to study the effect of self-monitoring of story elements on the

reading comprehension of high school seniors with learning disabilities . The researcher used a multiple baseline to study the effect of the strategy on the reading comprehension of three high school seniors with learning disabilities . The students are required to read a story and stop reading at three places in the text . Students were asked to answer five questions on story elements( characters, setting) .Reading comprehension was measured by a reading comprehension quiz of 10 items and recalling correct story facts. The results of the study indicated a relationship between self-monitoring and reading comprehension .

Khonamri,F& Kojidi,E.(2011) conducted a study to investigate the relationship between metacognitive awareness of reading strategies and comprehension monitoring of language learners in English as a foreign language context . The participants were first year university students . They completed a questionnaire to indicate the strategies that students use when they do reading tasks . The participants were divided into six groups based on their awareness of the strategies and their reading proficiency . To examine the comprehension monitoring ; think- aloud protocol, error detection and retrospective questions were used .The result of the study indicated the combined relation of metacognitive awareness of reading strategies and reading ability on learner's comprehension monitoring.

Takallou(2011) investigated the effect of metacognitive strategy instruction on EFL learner's reading comprehension and metacognitive awareness . The researcher indicated that teacher's crucial aim is to raise their students' awareness of learning strategies and help them utilize these strategies . One type of these learning strategies is metacognitive strategies which include planning ,self-monitoring , and self –evaluation . The present study examined the effect of metacognitive (planning, self- monitoring) strategy instruction on EFL learners' reading comprehension and their metacognitive awareness . Two tests and strategy inventory for language learning (SILL) were administered to 93 male and female EFL learners in four phases . At the first phase , TOFEL exam was given to all students . At the second phase , SILL was administered to experimental and control groups . At the third phase , experimental groups received five sessions of instruction on metacognitive strategies ( planning and self-monitoring) based on the Cognitive Academic Language Learning Approach (CALLA). At the fourth phase , the reading comprehension test and SILL questionnaire were administered to all groups .Results of the study indicated that the experimental groups which received instruction on planning and monitoring

out performed the control group on the reading comprehension test . In addition , the result showed that awareness of experimental groups to metacognitive strategies increased after instruction .

Adimora,Nwokenna&Ogbwnya(2014) investigated the effect of comprehension monitoring strategy on achievement of low- achieving students in reading comprehension . They used a quasi- experimental pre- post test design . The sample of the study is 127 low- achieving senior secondary school class 11 . Two instruments were used for the study . Finding of the study revealed that exposing male and female low- achieving students in the skills associated with comprehension monitoring strategy has an effect on their reading comprehension . They also recommended that students should be exposed to strategy instruction by explaining and demonstrating the strategy that can enable students to understand and solve problems .

Mohsein&Ahour(2014) conducted a study to investigate the effect of metacognitive strategy( planning, self- monitoring) instruction on reading comprehension of Iranian EFL learners. The participants were 30 male and female Iranian EFL learners in advanced level in a language institute in Zanjan. Two reading comprehension tests were administered to the participants . The first one as a pre- test and the other as post-test . Participants received five sessions of instruction on metacognitive strategies, one on planning and the other on self- monitoring strategy based on the Cognitive Academic Language Learning Approach (CALLA). After completion of the instruction, a reading comprehension test as a post-test was administered to the groups. Analysis of data revealed that participants in two groups outperformed other group in post-test of reading comprehension. It is implied that the instruction of metacognitive strategies( planning and self-monitoring) can improve students' reading comprehension.

Carretti,Caldorola,Tencati&Cornoldi(2014) examined the feasibility of improving reading comprehension in school children by comparing the efficacy of two training programs , both involving metacognition. One of these programs is based on listening comprehension , the other is on reading comprehension . The sample of the study is 159 pupils in the fourth and fifth grade . The training programs were implemented by school teachers . The results of the study revealed that both the training programs were effective in improving the students achievement, but training in reading

comprehension showed greater gains than the program of listening comprehension .

In light of related studies' review , conclusions can be drawn :

1. The use of metacognitive monitoring (comprehension monitoring) in teaching foreign language skills has proved to be effective .
2. few studies addressed gender differences , so it would be worthy to study the effect of metacognitive monitoring due to the gender.
3. There is little research on comprehension monitoring in FL reading .
4. This study is needed to build upon what we already know about using metacognitive monitoring especially by Jordanian students.

## **10. Methods and procedures**

This section discusses the methods and procedures of the study . It includes the subjects of the study , the instruments of collecting data and their validity and reliability , the description of the instrumental metacognitive monitoring program and its validity and reliability , variables of the study , the procedures of the study and the study design and statistical analysis.

### **10.1 Subjects of the study**

The subjects of the study consisted of all female and male tenth grade students in the public schools of North Eastern Badia Directorate of Education during the first semester of the academic year 2016/2017. The subjects of the study consisted of (1439) males and females students ( 696) male students and (743) female students. The sample of the study was purposeful one consisting of 123 tenth grade students ( 60 males and 63 females) at Alkaum Alahmer comprehensive secondary school for girls, Alkaum Alahmer comprehensive secondary school for boys ,Um Aljemaal comprehensive secondary school for girls and Um Aljemaal comprehensive secondary school for boys. These four schools were chosen for three reasons : First, these schools are big and comprehensive. Second, they have a good reputation. Third, the good relationship between the researcher and teachers of these schools who volunteered to conduct the study. Students were randomly assigned to experimental and control groups. The experimental group consists of 30 boys and 33 girls ; whereas control group consisted of 30 boys and 30 girls. Table (1) shows the distribution of the sample of the study by gender and type of the group.

**Table (1) Distribution of the sample of the study by gender and type of the groups**

	<b>Experimental</b>	<b>Control</b>	<b>Total</b>
Male	30	30	60
Female	33	30	63
Total	63	60	123

### 10.2 Equivalence of the study groups

To establish the equivalence of the groups, the reading comprehension test was applied on the study groups. The researcher computed the means and standard deviations for the students' scores on the reading comprehension pre-test as shown in table (2)

**Table (2) Means and Standard Deviations for The students' Scores on the Reading Comprehension pre-test According to their Group and Gender**

<b>Group</b>	<b>Gender</b>	<b>N.</b>	<b>Means</b>	<b>Std. Dev.</b>
<b>Control</b>	Male	30	17.46	5.91
	Female	30	17.93	5.49
	Total	60	17.70	5.66
<b>Experimental</b>	Male	30	18.33	7.20
	Female	33	20.84	6.16
	Total	63	19.650	6.744
<b>Total</b>	Male	60	17.9000	6.550
	Female	63	19.460	5.991
	Total	123	18.699	6.293

Table 2 shows that there are observed differences among the means of students' scores on the reading comprehension pre-test according to their group and gender. To test the significance of the differences, a Two-way ANCOVA test was used as seen in table (3)

**Table (3) Two-way ANCOVA test results for the students' scores on the Reading Comprehension pre-test according to their Group and Gender**

<b>Source</b>	<b>SS</b>	<b>Df</b>	<b>Ms</b>	<b>F</b>	<b>Sig.</b>
<b>Group</b>	109.761	1	109.761	2.832	.0950
<b>Gender</b>	68.235	1	68.235	1.761	.1870
<b>Group*Gender</b>	32.204	1	32.204	.8310	.3640
<b>Error</b>	4612.242	119	38.758		
<b>Total</b>	47840.000	123			

\*Significant at ( $\alpha = 0.05$ )

Table 3 shows that there are no significant differences at ( $\alpha = 0.05$ ). Between students' scores of experimental and control groups on the pre-reading test that may be ascribed to the group, gender or interaction between



group and gender which means that the groups are equal before conducting the study.

### **10.3 Instruments of the study**

The researcher used the following instrument to collect data:

#### **The Reading Comprehension Test**

The instrument of the study was the reading comprehension test designed by the researcher . The aim of the test was to measure students' level of comprehension after completing the metacognitive monitoring instruction . The test is a reading passage with twenty multiple choice questions with four choices ( a, b, c or d ). The questions are divided into two parts : Direct questions the answers of them were based on explicit information in the passage , and in direct questions , the answers of them were based on implicit information in the passage. The total scoring was forty. The testing time allowed was one hour.

#### **Validity of the Reading Comprehension Test**

To establish the validity of the reading comprehension test , a jury of judges from departments of English and departments of curricula and instruction at Jordanian universities, supervisors and experienced English teachers were invited to comment on the test to ensure its validity . Their comments were taken into consideration , so the test was modified on that basis.

#### **Reliability of the Reading Comprehension Test**

To establish the reliability of the reading test , It was tried out on a pilot group of (26) students who were excluded from the participants of the study .The researcher used Kuder –Richardson-20 formula to find its internal consistency . The reliability of the test was (0.78). This indicates that the test items are equivalent . The difficulty co-efficient was calculated for all questions of the test and it was between (0.38) and (0.76) The discrimination co-efficient was also calculated and it was between (0.35) and (0.82).

The instructional material was chosen by the researcher from the tenth grade English textbook. The researcher adopted metacognitive monitoring strategy instruction and redesigned the six reading and oral texts. A jury of judges from the departments of English and departments of curricula and instruction at Jordanian universities, supervisors and experienced English

teachers were invited to comment on the instructional program to ensure its validity.

#### **10.4 Variables of the Study**

1. Independent variables
  - a. The strategy of teaching reading which has two levels; the metacognitive monitoring strategy and the conventional strategy
  - b. Gender
2. The dependent variable is students' achievement in reading comprehension .

#### **10.5 Study Design and Statistical Analysis**

The study utilized the quasi- experimental design because the main goal of the study was to investigate the effect of using metacognitive monitoring strategy on developing reading comprehension among tenth grade students in North Eastern badia directorate of education .

To answer the first and second questions, means and standard deviations were computed for the experimental and control groups on the reading comprehension . A two- way ANCOVA was used to test the effect of using metacognitive monitoring strategy , gender and the interaction between them on students' reading comprehension .

#### **10.6 Study Procedures**

The following procedures were carried out throughout the study :

1. The researcher got a letter from the University of Jordan , addressed to Ministry of education seeking permission and cooperation to conduct the study in North Eastern Badia Directorate schools .
2. Four schools were purposefully chosen for the implementation of the study .students were randomly assigned to experimental and control groups.
3. Metacognitive monitoring instruction was based on Action Pack (10) . The researcher prepared sessions of instruction about using metacognitive monitoring strategy on reading and listening comprehension during the first semester of the academic year 2016/2017.
4. Getting the approval of schools' principals for the implementation of the study
5. Principals of these schools were given clear idea about the study .
6. The cooperative teachers were also given clear idea about the study , the instructional program and the time schedule for implementation of the study.

7. Four meetings were held to train cooperative teachers in applying the instructional program prepared by the researcher .
8. Pre-testing the experimental and control groups to measure their equivalence before applying the program based on metacognitive monitoring strategy .
9. Starting the experiment and visiting the cooperative teachers at least once a week to help them overcome and eliminate any difficulties during the experiment and to get feedback from them , principals and students
10. Post-testing the experimental and control groups to measure their reading comprehension after applying the program based on metacognitive monitoring strategy . The reading comprehension test was given on Sunday, September 13 th, 2016.
11. Data were collected and (ANCOVA) was used in the statistical analysis of the study.

### 11. Results of the study

The purpose of the study was to investigate the effect of using metacognitive monitoring strategy on developing reading comprehension in English language among tenth grade students in North Eastern badia directorate of education by answering the following questions :-

1. What is the effect of using metacognitive monitoring strategy on the reading comprehension of tenth grade students in North Eastern Badia directorate of education?
2. Is their an interaction between the use of metacognitive monitoring strategy and gender on tenth grade students' reading comprehension?

#### 11.1 Results Related to Students' Performance on the Reading Comprehension Test

**Descriptive Data:** The lowest mark obtained by the students was 6 while the highest mark was 38 . Table 4 presents the frequencies of students' scores on the reading comprehension test .

**Table (4)**

Categories	Total frequencies	Frequencies					
		Experimental Group			Control Group		
		Male	Female	Male& Female	Male	Female	Male& female
1-5	0	0	0	0	0	0	0
6-10	4	0	0	0	2	2	4
11-15	15	2	0	2	8	5	13

Categories	Total frequencies	Frequencies					
		Experimental Group			Control Group		
		Male	Female	Male& Female	Male	Female	Male& female
16-20	37	5	2	7	16	14	30
21-25	19	5	3	8	4	7	11
26-30	23	7	14	21	0	2	2
31-35	16	5	11	16	0	0	0
36-40	9	6	3	9	0	0	0
Total	123	30	33	63	30	30	60

The table shows that the number of students in both the experimental and control groups who achieved less than 20 was 56 with the percentage of 46% and who attained more than 20 were 67 with the percentage of 54% . Students who achieved less than 20 in the experimental group were 9 with the percentage of 14% while students who achieved more than 20 were 54 with the percentage of 86% . Students who achieved less than 20 in the control group were 47 with the percentage of 78% while students who achieved more than 20 were 13 with the percentage of 22%. Male students who achieved less than 20 were 33 with the percentage of 55% and who achieved more than 20 were 27 with the percentage of 45% . Number of female students who achieved less than 20 was 23 with the percentage of 37% and who achieved more than 20 were 40 with the percentage of 63%.

### Inferential statistics :

#### Results Related to the first Hypothesis

The first hypothesis says " There are no statistically significant differences at ( $\alpha = 0.05$ ) between students' total achievement of the experimental and the control groups in the reading comprehension that may be ascribed to the use of metacognitive monitoring strategy.

To examine this hypothesis , means and standard deviations for the students' scores on the reading comprehension post-test were computed as shown in table (5) .

**Table (5) Means and Standard Deviations for The students' Scores on the Reading Comprehension post-test According to their Group**

Group	N.	Means	Std. Dev.	Mini.	Max.
Control	60	17.37	4.57	6	26
Experimental	63	28.29	6.36	12	38

Table 5 shows that there are observed differences between means of students' scores according to their group . To test the significance of these differences , Two-Way ANCOVA was used as shown in table (6)

**Table (6)Two-way ANCOVA test results for the students' scores on the Reading Comprehension post-test according to their Group**

Source	SS	Df	Ms	F	Sig.
Group	3618.855	1	3618.855	118.609	.000*
Gender	91.265	1	91.265	2.991	.086
Group*Gender	22.576	1	22.576	740.	.391
Error	3630.776	119	30.511		
Total	72248.000	123			

\*Significant at ( $\alpha = 0.05$ )

Table 6 shows that the f value of the group is 118.60 which is significant at ( $\alpha = 0.05$ ).This means that there are significant differences in the tenth graders' achievement in reading comprehension test between control and experimental groups due to using metacognitive monitoring strategy in favor of the experimental groups as indicated also in table (5) . Therefore , the first null hypothesis which states There are no statistically significant differences at ( $\alpha =0.05$ ) between students' total achievement of the experimental and the control groups in the post reading test that may be ascribed to the use of metacognitive monitoring strategy, was rejected and the alternative hypothesis which states There are statistically significant differences at ( $\alpha =0.05$ ) between students' total achievement of the experimental and the control groups in the reading comprehension in favor of the experimental group that used metacognitive monitoring strategy, was accepted .

### **Results Related to the Second Hypothesis**

The second hypothesis says " There is no interaction between the use of metacognitive monitoring strategy and gender on tenth grade students' reading comprehension.

To examine this hypothesis, means and standard deviations for the students' scores on the reading comprehension post-test according to their group and gender were computed as shown in table (7) .

**Table (7) Means and Standard Deviations for The students' Scores on the Reading Comprehension post-test According to their Group and Gender**

Group	Gender	N.	Means	Std. Dev.	Mini.	Max.
Control	Male	30	16.93	3.99	8	24
	Female	30	17.80	5.12	6	26
	Total	60	17.37	4.57	6	26
Experimental	Male	30	26.93	7.57	12	38
	Female	33	29.52	4.82	16	38
	Total	63	28.29	6.36	12	38
Total	Male	60	21.93	7.83	8	38
	Female	63	23.94	7.68	6	38
	Total	123	22.96	7.79	6	38

Table 8 shows that there are differences between means of students' scores according to their group and gender . To test the significance of these differences , Two-Way ANCOVA was used as shown in table (8)

**Table (8) Two-way ANCOVA test results for the students' scores on the Reading Comprehension post-test according to their Group and Gender**

Source	SS	Df	Ms	F	Sig.
Group	3618.855	1	3618.855	118.609	.000*
Gender	91.265	1	91.265	2.991	.086
Group*Gender	22.576	1	22.576	740.	.391
Error	3630.776	119	30.511		
Total	72248.000	123			

\*Significant at ( $\alpha = 0.05$ )

Table (8) shows that the f value for the gender is 2.991 and for group\*gender is 740. which is not significant at ( $\alpha = 0.05$ ). This means that there are no significant differences in the tenth graders' achievement in reading comprehension due to the gender or to the interactions between group and gender .Therefore, the second null hypothesis which states " There is no interaction between the use of metacognitive monitoring strategy and gender on tenth grade students' reading comprehension, was accepted.

## 12. Discussion and Recommendations

The purpose of the study was to investigate the effect of using metacognitive monitoring strategy on developing reading comprehension in English language among tenth grade students in North Eastern Badiah directorate of education .

The first section presents a discussion of results attained by implementing metacognitive monitoring strategy .The second section includes recommendations which are based on the results of implementing the strategy .

### **12.1 Discussion of the Results Related to the Reading Comprehension Test**

The first hypothesis says" There are no statistically significant differences at ( $\alpha =0.05$ ) between students' total achievement of the experimental and the control groups in the reading comprehension that may be ascribed to the use of metacognitive monitoring strategy.

The second hypothesis says" There is no interaction between the use of metacognitive monitoring strategy and gender on tenth grade students' reading comprehension.

The results related to the reading comprehension test indicated that there were significant differences between the mean scores of the experimental and control groups on the reading comprehension in favor of experimental group. The mean of students' scores in the experimental group on the reading test was (28.29) , while mean of students' scores in the control group was (17.37) as shown in table (5). Two-way ANCOVA was used to test the significance of the differences as shown in table (6).Also , the results of the study indicated that there was no interaction between using metacognitive monitoring and gender on the reading comprehension of tenth graders as shown in table (8) . This indicates that only using metacognitive monitoring strategy was behind the improvement in reading comprehension of the experimental group and gender has no contribution to the results of the study.

As a result , the first null hypothesis was rejected while the alternative one was accepted " There are statistically significant differences at ( $\alpha =0.05$ ) between students' total achievement of the experimental and the control groups in the reading comprehension in favor of the experimental group ".

The high mean scores of the experimental groups was due to the effect of using metacognitive monitoring instruction based on a well – prepared instructional program prepared by the researcher which proved to be more effective than the traditional method. This finding may be attributed to the following reasons: First, the metacognitive monitoring program that the students received might help them better understand the steps of monitoring passages and deal with comprehension problems. Second, teachers who participated in the study were given clear idea about the importance of the

program with sufficient feedback provided by the researcher. Third, student were taught some fix-up strategies to deal with any comprehension failures.

The findings of this study are in line with the findings reported by Abdel Hafez (2006), Abdel Samie(2008), Hoffman(2010), Crabtree, Morgan & Konrad (2010) Takallou(2011), Adimora, Nwokenna, &Ogbwnya(2014), Mohsein&Ahour(2014), Stevenson and Han(2008) That using metacognitive monitoring (comprehension monitoring) would improve students' reading comprehension.

The findings of the study partially supported the findings of the studies conducted by Hussein(2007), Alshaihani(2002) . However , the previous studies were different from this study because they aimed to study the effect of using metacognitive strategies(planning, monitoring , evaluating ) on reading comprehension .

Also, the findings of this study partially supported the findings of the study reported by Carrett, Caldorola, Tencati&Cornoldi(2014). However, Carrett,Caldorola & Cornoldi study was different from this study in that it aimed at examining the feasibility of improving reading comprehension by comparing the efficacy of two training programs both involving metacognition .

Also, the findings of this study partially supported the findings of the studies conducted by Paris&Turner(1991),Yang(2002) . However , Paris& Tuner's study was different from this study in that it aimed to examine reading strategies used by proficient and poor readers. While Yang's study aimed to reassess both proficient and less proficient reader's comprehension monitoring .

Also, the findings of this study partially supported the findings of the study reported by khonamri&Kojidi(2011). However, khonamri&Kojidi's study was different from this study in that it aimed at investigating the relationship between metacognitive awareness of reading strategies and comprehension monitoring .

## **12.2 Recommendations**

Based on the results of the study , some recommendations are proposed to Ministry of Education and TEFL teachers :

- Ministry of Education should include metacognitive strategies especially comprehension monitoring in English language curricula .



- Ministry of Education is recommended to introduce special programs for TEFL teachers on the use of metacognitive strategies especially comprehension monitoring .
- TEFL teachers are recommended to train their students to use metacognitive monitoring during reading .
- Metacognitive learning and teaching should receive more attention as an important topic for future studies .

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