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The Eeffect of Metacognitive Strategy Training on Reading Comprehension among the Iraqi Female Students

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Abstract

The educational process and reading comprehension are both significantly influenced by metacognitive reading strategy awareness. Despite its significance, the ability to use metacognitive strategies in learning, teaching, and evaluation of the English language has long been disregarded. The importance of reading comprehension to academic performance exacerbates this lack of effective metacognitive reading strategy skills. The development of metacognitive reading strategy abilities is one way to address the issue of poor reading comprehension. In language learning and instruction, emphasis must be placed on the capacity to apply metacognitive reading strategies. The goal of the current research is to pinpoint the metacognitive strategy training variables that affect the reading comprehension of Iraqi female students. Additionally, it makes an effort to investigate how metacognitive strategy training affects the reading comprehension of Iraqi female students. This research has been conducted based on the quantitative approach through a quasi-experimental design to achieve the objectives. A total of 50 useable questionnaires were collected from Iraqi universities using purposive sampling technique. The quantitative data was analysed through SPSS 25 software. The findings showed that metacognitive Knowledge and use of strategies, are the important factors to enhance their reading comprehension performance, but not planning and management. The ultimate goal of educators is to enable students to be aware of these new technological tools for comprehension reading. This will also enable them to overcome the learning challenges of the 21st century and educators will have to play an important role in enhancing students' awareness of such strategies

Keywords: Metacognitive Strategy; Reading Comprehension; Performance; Iraqi Female Students

Background

Reading is a critical part that teachers and students must engage with on a regular basis in the classroom. The majority of information comes from written sources like books, journals, blogs, magazines, and even internet news (Abdul, 2020). Reading comprehension is critical in this situation. Students who do not have adequate reading comprehension would find it difficult to learn (Alzahrani, 2018). As a consequence, they cannot receive facts or insight if they do not read. The majority of the literature required for university students' studies is written in English (Chen, 2019). A high level of reading comprehension is expected in this situation. Students

would struggle to establish the hypothesis relevant to their research or other theoretical writings if this is not done.

As Nunan (2003) points out, learners can make better improvement and growth in all other fields of learning if their reading skills are improved. They are intertwined with the educational method, according to Collins (2020), that educational achievement necessitates effective reading. As Pearson and Hamm (2005) summarized, early research identified that reading comprehension involved multiple components that would appear depending on the formats used to present the material to be read and the manner in which the person was asked to indicate their understanding of the material that was read. Despite this historical emphasis, many modern approaches to reading comprehension are one dimensional, with little variation in the material the person reads and relatively narrow response formats (Fuchs, 2018).

Comprehension is a thinking, creative, and multifaceted process in which people engage with the text, so they need strategies to help them understand the text. Reading comprehension strategies indicate how readers understand a task, observe textual cues, make sense of what they read and what they do when they do not understand (Block, 1986). Taylor (2007) explains that comprehension reading strategies are the literacy strategies used by readers before, during and after their reading in order to enhance comprehension of the text. Because of the value of reading skills, English Department students are encouraged to learn a variety of reading skills, as they are required to teach at universities in Iraq, where reading is the subject of the English curriculum (Akyıldız, 2021; Tu, 2020). In view of the beneficial effect of reading strategies, reading comprehension strategies instruction has been used in this study.

Word decoding and general language knowledge, such as vocabulary, are commonly used to ascertain the capacity to understand texts (simple view of reading; Hoover & Gough, 1990; Verhoeven & Perfetti, 2008). Beyond these fundamental abilities, understanding of a text needs more general cognitive and metacognitive processes (Bogaerds-Hazenberg, 2021; Kim, 2021; Z. Zhang, 2020). Inference making is one of these abilities, and it's essential for building a scenario model, or mental model of the document (Støle, 2020). Since not all material is stated directly, inferences are used to connect sections of the text and to fill in gaps in the text (Sabatini, 2020; Torppa, 2020; Wang, 2020). According to past studies, when good comprehends have difficulty understanding a passage of a text, they use effective reading techniques to solve the issue. Poor comprehends, on the other hand, are more likely to use ineffective, simplistic tactics and have difficulty implementing reading techniques fluently (Samiei, 2021; Vančop, 2020). The relevance of reading techniques for text comprehension is also supported by a wide body of scientific proof. Several studies have shown a connection between reading comprehension and the knowledge and application of reading strategies (Bogaerds-Hazenberg, 2021; Samiei, 2021; Z. Zhang, 2020). Reading comprehension may also be improved through training reading strategies, according to systematic reviews (Talmor, 2020; S. Zhang, 2020). Most intervention studies in the 1980s and 1990s was based on validating the results of a certain reading strategy, such as summarising and interviewing, in regulated trials (Samiei, 2021). The results in these experiments were always minimal, which made sense given that reading comprehension relies on a variety of elements and techniques. As a result, more recent research (Cho, 2019; Furtado, 2019; Nishida, 2020; Sabatini, 2020; S. Z. Zhang, 2020) have looked at the impact of approaches under which the usage of various techniques was learned.

It appears that performance on reading comprehension is significantly dependent on general cognitive abilities (Hart et al., 2009). Many scholars have previously reviewed that Iraqi graduate students' struggles with the TOEFL (Boonen, van Wesel, Jolles, & van der Schoot, 2014; Delgado, Vargas, Ackerman, & Salmerón, 2018; Ranjbaran & Alavi, 2017), however, there is lack of research in and outside Iraq concerning Iraqi graduate students'

reading strategy use when reading English-language academic texts. It is noted that when an exam provides only one total score, it can serve the test's immediate summative purpose; however, it cannot be easily used to improve reading performance (Stiggins, Alter, & Chappius, 2004). There is a significant literature gap in the recent trend of literature; therefore, this study aims to investigate whether Metacognitive strategy training has any significant impact on the students' reading performances.Therefore, the main aim of this study are: To identify the factors of Metacognitive strategy training that have an impact on the reading comprehension of the Iraqi female students, to examine the effect of Metacognitive strategy training on reading comprehension of the Iraqi female studentsm and to investigate whether there is any significant difference in reading comprehension performance between the pre-and post-test metacognitive strategy training among Iraqi female students.

Literature Review

Reading comprehension is one of the most sophisticated cognitive processes that people use, making it challenging to teach, assess, and study. Many alternative theoretical models have been put out in recent decades as reading theorists have struggled to find a complete and meaningful way to represent reading comprehension (McNamara & Magliano, 2009; Perfetti & Stafura, 2014). These models differ from broad theoretical ones that show the connections and interactions between comprehension's constituent parts to those that represent particular comprehension processes. The Simple View of Reading (SVR) framework holds that word decoding and linguistic understanding are the results of reading comprehension (Gough & Tunmer, 1986). Research has demonstrated that individual variations in these two factors may explain reading comprehension across a wide range of languages, while the relative importance of the factors changes with time (Catts, 2018). Decoding is more closely related to reading comprehension than linguistic competence in the early stages of development, but after decoding is mastered, linguistic understanding becomes a stronger indicator of reading comprehension (e.g., Catts, Adlof, & Weismer, 2005).

The student's starting level of competency is related to individual variances in the pace of growth of reading ability. The most notable assumption was made by Stanovich (1986), who postulated that reading comprehension develops with time and that those with higher beginning levels tend to progress more quickly than those with lower starting levels. The relative Matthew effect is the name of this phenomenon (Stanovich 1986). An absolute Matthew effect implies that students with high reading ability continue to advance their reading skills, while students with low ability show declines in reading comprehension. This is consistent with the theoretical argument that there is a positive relationship between initial reading competence and later developmental progression (Rigney 2010). Developmental-lag models contend that the trajectory of reading comprehension is compensatory since it improves the student's reading performance, which suggests a distinct pattern of development. Making judgements on different elements of the text, such as its literary quality, the author's competence, the morality of the characters and their acts, etc., is known as critical or evaluative comprehension.Although several studies (Hermanudin, Suhartono, Suryadi, and Noermanzah, 2019; Rogde, Hagen, and Melby-Lervåg, 2019) researched and reported the reading comprehension strategies of various students, including Saudi Arabia college students (Khan, Ibrahim, Kassim and Khan, 2019) there is limited evidence that those studies included Iraqi university students.

Reading Comprehensions in Arab region

Researchers Ma'youf and Aburezeq (2022) want to find out how well varied instruction helps pupils in the United Arab Emirates' fourth grade improve their reading comprehension

abilities. The research sample included 49 students, both male and female, who were randomly assigned to two groups: an experimental group (23 students) and a control group (26 students). The findings showed that there were statistically significant differences in the scores of the two research groups on the post-test at the four levels (literal, logical, critical, and creative) and reading abilities in general, favoring the experimental group. Additionally, Bishara (2020) investigates the relationship between phonological and morphological awareness and reading comprehension among children receiving special education services and attending self-contained special education classrooms in ordinary Arab primary schools. These were the three theories: First, the greater a special education student's reading comprehension level is, the higher their degree of phonological awareness in Arabic. Similar to this, the greater a student's reading comprehension is in Arabic, the higher their degree of morphological awareness. Third, phonological and morphological awareness in children may have an additive impact on their reading comprehension skills. The results of this investigation supported all three hypotheses and have implications for our knowledge of the mechanisms governing phonological and morphological awareness. This might be useful in figuring out how to encourage literacy and reading comprehension in students in special education.

Majadly and Massarwa (2020) suggested that the reciprocal teaching (RT) approach helps students accomplish their goals and improves reading comprehension in Israel. In this research, it is shown how this tactic affects the Arab population and how it affects Arabic reading comprehension. Through the use of instructional units created in line with the strategic components of RT, a quasi-experimental technique was used to investigate this problem. The survey included 61 pupils from secondary public schools. Two sets of participants—an experimental group and a control group—were used. The findings revealed a substantial difference between the two groups' levels of self-monitoring, task-parameter planning, and strategy appraisal in terms of metacognitive reading comprehension. The pupils' abilities and level of text comprehension were clearly increased by the reciprocal teaching approach. The research also supported the idea that students' exposure to techniques and abilities that enable them to engage with texts depends on the amount of their metacognitive reading comprehension dimensions.

Another study conducted by Sover and Din (2018) examined the impact of using hilarious literary texts in Arabic language instruction on Grade 4 reading comprehension success among Arab students in Israel. There hasn't been any research done yet on how to include humor into the learning of Arabic as a first language. There are relatively few studies addressing the use of humor in learning Arabic as a second language (only three were found). As a result, there are no studies addressing the use of humor in education in the Israeli Arab sector. The experiment's results reveal that students who learnt understanding via amusing tales fared substantially better than students in the control groups. Additionally, the experimental courses were deemed to have a better learning atmosphere.

According to earlier research, short vowels in the text would help both novice and experienced Arab readers understand what they were reading, according to Seraye (2016). With a very tight controlling technique, however, different findings showed that word frequency was the only factor that had an impact on Arab adult proficient readers' reading process, and its impact was only restricted to the time burden of the reading process. The results showed that word frequency was the only controlled variable that had a marginally positive influence on their reading process in terms of reading time load and, to some extent, reading comprehension.

Flavells' Model of Metacognitive Components

There is a model of metacognitive aspects espoused by Flavell (1979) which has two

variables related to metacognition: knowledge and experience. He pointed out that metacognition can be divided into three components: first, metacognitive knowledge; second, metacognitive experiences and third, cognitive monitoring and use of strategy. Flavell reveals that meta-cognition refers to both people's awareness and control, not only of their cognitive processes but also of their desires and motivations. Teachers agree that metacognitive reading strategy can help students' reading comprehension and promote monitoring and regulation of one's own cognitive enterprises. The metacognitive strategy implementation such as self-awareness and self-evaluating is to improve independent readers who can control their own learning and learn, when and how to use those strategies while reading, Flavell (1981).

Hypotheses Development

Metacognitive knowledge and Reading Comprehension

Many definitions have been provided to the word "metacognition," and the majority of them highlight its primary role in promoting active and independent learning. Metacognition is "the knowledge and control children have over their own thinking and learning processes," according to Cross and Paris (1988, p. 131). The three mental activities of awareness, monitoring, and regulating are said to be inherent in metacognition in terms of reading comprehension, according to Haller, Child, and Walberg (1988). Additionally, Baker and Brown (1984) in Pearson (n.d.) assert that readers' metacognition includes their awareness of whether or not they can understand the text they read, their capacity to judge a reading task, and their understanding of when and how to apply a particular cognitive reading strategy depending on the difficulty of the text, the situational challenge, and the reader's own cognitive abilities. In reading, metacognitive methods aim to help readers become more aware of and in control of what they are reading, enhance their understanding, and assess if their efforts at comprehension have been effective. Schneider (1988) asserts that metacognitive information is persistent and articulable. It describes how a person learns about cognitive processes, including supervising, managing, and directing the cognitive processes. Consequently, the three changeable categories of metacognitive knowledge are person, task, and strategy (Flavell, 1979). When a task in a classroom environment compels students to consider how they will handle it, metacognitive knowledge about tasks is at work (Camalahan, 2006).

According to McMahon (2009), using metacognitive methods when learning has several benefits. In addition, he lists a number of disadvantages of using these tactics. He claims that self-monitoring, which is an iterative process of assessment throughout the learning process, is a benefit of metacognition tactics. Metacognitive techniques also foster superior learning and problem-solving abilities. Additionally, according to St. Clair (2020), metacognition enriches and improves the learning process. In agreement with these two professionals, Papaleontein-Louca (2008) asserts that using metacognitive techniques like self-awareness and self-monitoring may help students become autonomous learners who can take charge of their own education and build lifelong learning skills. In contrast, there are several claims made regarding these tactics' drawbacks. According to McMahon (2009), students who use metacognitive methods may have low self-esteem and trouble addressing problems. He continues by saying that these tactics might result in poor language and communication skills, poor reading comprehension, and trouble achieving success in society. Additionally, the results of students' reading abilities are still debatable, making this a crucial component of cognitive strategy training. Therefore, it can be hypothesised that:

H1: Metacognitive knowledge has significant impact on reading comprehension of the Iraqi female students

Use of Strategies and reading comprehension performance

The key component of cognitive monitoring is the relationship between metacognitive

information, metacognitive experiences, cognitive objectives, and cognitive techniques (Bentahar, 2012). If students can distinguish between distinct cognitive processes and keep track of them, it will be possible to determine whether they are high achievers or poor achievers (Cantrell, Almasi, Carter, Rintamaa & Madden, 2010). Low achievers often aren't even aware that their cognitive efforts went wrong, and it frequently occurs that readers of all ages and skill levels frequently have problems with inaccurate monitoring (Garner, 1988). So, the following hypothesis can be formulated:

H2: Use of Strategies has significant impact on reading comprehension of the Iraqi female students.

Planning and Management of Practices and reading comprehension performance

Several steps in metacognitive strategy are used in teaching reading comprehension. According to Zhang and Sheepo (2013), metacognitive strategies are divided into three categories: planning, monitoring, and evaluating. These steps are discussed below:

Planning learning techniques is a necessary skill for studying (Palinscar & Brown, 1984). Pre-reading, reading, and post-reading are the three components of reading. Pre-reading is when planning happens as a metacognitive technique. During the preparation process, students would think about the reading subject and any other elements that would help them build an early concept of the text's substance. As part of the planning approach, images, graphics, headers, and subheadings also play a significant role in assisting readers in making assumptions about the text's content (Benchmarkeducation, 2011). According to Thiede, Anderson, and Therriault (2003), one's ability to effectively assess understanding while reading has an impact on total reading comprehension. To gauge their degree of understanding or state of learning, the students in this method keep track of how well they are learning the content. For this monitoring aspect, the students can employ a number of strategies, such as making connections, making predictions, drawing inferences, using context clues, utilizing text features, identifying text structures, using graphic organizers to highlight specific types of text information, and writing comments or questions on self-stick notes or in the margins, according to Fogarty (1994).

H3: Planning and management of practices have significant impact on reading comprehension of the Iraqi female students.

Difference in Reading Comprehension Performance

Gender, according to Risman (2004), is an institutionalized social framework that people use to form their social and cultural narratives in environments that have distinctive characteristics. The gender subjects react to the many schemas that they have created cognitively to fit the social and cultural contexts of knowledge generated in infancy (Bem, 1983). It follows that it is apparent that students who have grown up in a shared cultural environment with certain narratives would perceive texts and express their reactions in various ways. Sewell's cultural paradigm from 1992 demonstrated how socially organized social and cultural situations are. They aid in the analysis and comprehension of embedded texts that are culturally different. According to Sewell, these schemas are generated intellectually and are objective. They had a common culture, which shaped their identities and goals as a consequence. Sewell used broad viewpoints rather than specific details to define the word "schema." In a broad sense of institutionalized, cognitively ordered viewpoints, the network of definitions and organized structure is useful for textual analysis (Ben, 1983). According to Risman (1998), a person's mind map that is governed by social norms in a setting is cognitively organized. Gustafsod (1998) stated that because of differences in social backgrounds, different genders experience and interpret social reality differently. The schema theory offers a thorough assessment of the respondents' feelings, ideas, and cognitive views. As a result, there are two

distinct conceptions of gender in relation to social reality: commitment to the home and job. The genders represented by these two schema models are 1) cognitive socially acquired notions, and 2) ideologies about contextual reality. Risman (1998) argued that institutional and cultural structures in which people are raised promote, strengthen, and inherit gender schemas. Devotion to one's family and job may influence a variety of dichotomies in one's views and decisions. This group of dichotomies has an impact on both feminine and masculine schemas when operating in various circumstances. Similarly, via commitment to the job, the cognitively formed schemas may impact their economic consumptions ideology and market competitive values, while devotion to the home may influence their family values like "motherhood." This model will show how various genders are categorized socially and culturally based on their parenting styles, societal obligations, emotional states, and egalitarian beliefs (Williams et al., 2013).

The experience of the gender is retained in their long-term memory, claims Nishida (2005). Then, as a result of these experiences, they are better able to remember and create structured schemas. As a result, the information included in each person's memory serves as a basis for drawing conclusions, synthesis, assessment, analysis, and the organization of conceptual paradigms. Life experiences and understanding of cultural context are so strongly related. When used properly, it also affects how well readers comprehend what they are reading. However, there will be limitations in understanding abilities if someone is unaware of cultural schemata (Nishida, 2005). The capacity of readers to comprehend texts written in a different cultural context may be assessed by looking at their structured knowledge bases and prior experience. They may also have acceptable schema practices that can keep track of their reading comprehension. So,

H4: There is significant difference in reading comprehension performance between the pre- and post-test metacognitive strategy training among Iraqi female students.

The study follows Flavell's model and proposes a conceptual framework in the followings. Based on the Flavells' Model of Metacognitive Components and the discussion of the recent literatures, the following model is proposed:

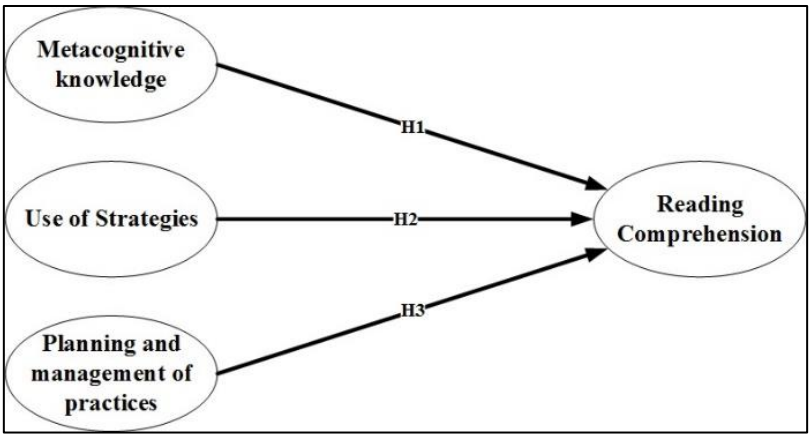

Figure 1: *Research Model*

Method

This research has been conducted based on the quantitative approach through a quasi-experimental design to achieve the objectives. The quantitative method uses a scientific approach to produce results, and it is deductive in nature. The setting of this research is Iraqi

universities. The population identified in this study are the students studying in the universities of Iraq. The total number of populations was 150000 students at universities, with only female participants. The participants consisted of the first to fourth-year students, fifty female students. All of them take two courses of Foundation English reading comprehension in the first and second semesters. This study's sample was chosen using the purposive sampling method, which provides an equal chance of being selected as a subject to address the research objectives. Since this study focuses on investigating the Iraqi female students' perceptions of their reading comprehension and establishing a cause-and-effect relationship between an independent and dependent variable, purposive sampling would be suitable for this study. Because a quasi-experiment does not rely on random assignment, it depends on the subject assigned to groups based on non-random criteria.

Instrument

The study participants were divided into two groups, one experimental and one control. At the beginning of the course, the experimental group was taught metacognitive strategies. At the end of the course, the experimental group was assessed using the specific comprehension subtest of the test of reading performance (TORP) (Padeliadu & Sideridis, 2000) to understand the effect of the metacognitive strategies. At the end of the course, the researcher compared their performance with the control group on a reading test given before and after the intervention. The study also employed a questionnaire was used. The items of the questionnaire were developed from related studies (Jones, Milton, Mostazir & Adlam, 2020; Kutluturk & Yumru, 2017 and Zhang, & Guo, 2020) and the contents were adapted to fit the context of Iraqi students. Each item was scored on a five-point scale with numerical values to indicate the level of their perceived abilities (1 = strongly disagree to 5= strongly agree). The quantitative data was analyzed through SPSS 25 software.

Findings

The questionnaire was distributed to the target sample group online, using survey Gmail and WhatsApp group. A total of 50 useable questionnaires were collected from Iraqi universities. There was no missing data. The main objective of descriptive analysis is to understand the profile of the respondent (See table 1).

Table 1: *Summary of Demographic Information*

Variables		Frequency	Percent
Age	Below 18	1	1
	19-20 years	16	32
	21-22 years	26	52
	23 and above	7	14
Field Of Education	1st Semester	13	26
	2nd Semester	09	18
	4th Semester	24	48
	Final Semester	4	8
Field of Study	Bachelor of Arts	20	40
	Bachelor in Business Administration	14	28
	Bachelor of Engineering and technology	9	18
	Others	7	14

Table 1 shows the majority of the respondents are from the age group 21-22 years, with 16 respondents (32%), followed by them, the age group 19-20 years are at the second highest position, and the rest of the age group are 23 years and above (14%) and below 18 years (1%).

Regarding the field of education, the majority of the participants were at their 4th semester (48%), and 1st Semester (26%); after them, third highest number of participants were from 2nd semester and only 4 participants (8%) were from final semesters. Moreover, 40% of the participants of this study are from Bachelor of Arts program, followed by the participants from Bachelor in Business Administration (28%); and the third highest participants (18%) were from the Bachelor of Engineering and technology program, and only the rest of the participants (14%) were from various programs.

Reliability Test

For this study, Table 2 displays the reliability coefficients results for each construct measured in the instrument using Cronbach Alpha for this research. The entire construct test provided a reliability result of more than 0.7 and within the acceptable range (Hair et al., 2010). It was concluded that the measures conducted for this assignment were consistent and exceeded the rule of thumb of 0.7, as discussed above.

Table 2. *Summary of the Cronbach's Alpha*

Variable/Construct	Alpha (n= 50)	Number of items
Overall	0.950	46
Metacognitive Knowledge	0.931	15
Use of Strategies	0.886	10
Planning and Management of Practices	0.898	11
Reading Comprehension Performance	0.917	10

Regression Analysis

The use of Multiple Regression has come to be not unusual place throughout a huge form of social, technological know-how disciplines such as implemented psychology and training, particularly looking for interplay outcomes and comparing moderating outcomes of variables in idea development (Aguinis, Petersen, & Pierce, 1999; Mason & Perreault Jr., 1991; Shieh, 2010). Applications of Multiple Regression in psychology frequently are used to check an idea of approximately causal effects at the final results degree (Jaccard et al., 2006). Multiple regression is appealing to researchers, given its flexibility (Hoyt et al., 2006). It may be used to check the speculation of linear institutions amongst variables, to observe institutions amongst pairs of variables whilst controlling for capability confounds, and to check complicated institutions amongst more than one variable (Hoyt et al., 2006). Multiple regression assumptions are described as number one studies issues like linearity, outlier independence, homoscedasticity, normality, and collinearity. According to the Field (2013, p. 68), the importance of the K-S takes a look at for huge pattern length can't be taken into consideration because the deviation of information from an everyday distribution. (See table 3).

Table 3: *K-S Test of Normality*

Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig	Statistic	Df	Sig.
Metacognitive Knowledge	0.12	50.00	0.06	0.94	50.00	0.02
Use of Strategies	0.18	50.00	0.00	0.91	50.00	0.00
Planning and Management of Practices	0.11	50.00	0.20	0.93	50.00	0.01
Reading Comprehension Performance	0.16	50.00	0.00	0.91	50.00	0.00

a. Lilliefors Significance Correction

Table 4: *Table of Coefficients*

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	0.356	0.374		0.950	0.347
Use of Strategies	0.242	0.084	0.265	2.878	0.006
Planning and Management of Practices	-0.025	0.085	-0.024	-0.291	0.772
Metacognitive Knowledge	0.720	0.104	0.694	6.896	0.000

a Dependent Variable: Reading Comprehension Performance; Note: p<.05 is significant

From the coefficients table 4.15, it is seen that the p-value (sig.) for Use of Strategies is 0.06, which is <0.05; means Use of Strategies is significantly impacting on Reading Comprehension Performance among the female university students. Moreover, Metacognitive Knowledge also has significant impact on Reading Comprehension Performance among the female university students. However, the relationship between that Planning and Management of Practices and Reading Comprehension Performance is not supported, as the p-value (sig.) is .772. Based on the data analysis gathered, Metacognitive strategy for reading comprehensions of the first to fourth-year fifty female students of Iraqi student is effective to improve students' reading comprehension on descriptive text. The researcher also found that the student's reading comprehension achievement on experimental class still need more investigation. It gives unsatisfied achievement to students reading comprehension. It can be seen on the minimum score of the post test that only reach 50. It was not suited the minimum criteria to passed the English lesson at university. It suggested for the next researcher who are excited to conduct the similar research to conduct the research on classroom action research method to improve students' reading comprehension on the Experimental class in this research.

Paired Samples Test

The study also aims to investigate whether there is any significant difference in reading comprehension performance between the pre-and post-test metacognitive strategy training among Iraqi female students. To examine the differences, a parametric test (Paired Samples Test) was performed (table 5), and found significant difference in reading comprehension performance between the intervention; pre-test of metacognitive strategy training (M= 37.62 (out of 50), SD=3.85) and post-test of metacognitive strategy training (M= 42.52, SD=2.14); t (50) = -7.7, p =0.000 (<0.05). There is significant difference in reading comprehension performance between the pre-and post-test metacognitive strategy training among Iraqi female students.

Table 5. *Paired Samples Test*

	Test	N	M	SD	Df	*t*	Sig.
Reading Comprehension Performance	Pre	50	37.62	3.85	49	-7.7	0.000
	Post	50	42.52	2.14			

Note: p-value <0.05; M=mean, SD= Standard Deviation

Discussion

This study aims specifically to determine factors of Metacognitive strategy training that have are important in reading comprehension of the Iraqi female students. The findings of this study show that use of strategies, and, metacognitive Knowledge are the most significant factors affecting reading comprehension of the Iraqi female students. Reading strategies are intentional and carefully planned actions, procedures, and techniques that readers use to assist them in understanding the text and monitoring, and managing their reading comprehension (Mokhtari & Sheorey, 2018). The literature on reading comprehension research provided several definitions for the term "reading strategy." Cohen (2016) defines reading strategies as mental processes that 12 readers select and use on purpose to grasp a text. Garner (2017) refers to reading strategies as "generally deliberate, planned activities undertaken by active learners, many times to remedy perceived cognitive failure". Another research done by Afflerbach, Pearson, and Paris (2018) has similar factors identified as "deliberate, goal-directed attempts to control and modify the reader's efforts to decode text, understand word, and construct meanings out of text". Investigation into learners' use of reading strategies is important for reading researchers because from the results of such research they can reveal and explain how readers interact with texts they read and how readers use reading strategies to comprehend texts (Carrell, 2019). Research into English language learners' reading strategies also helps researchers understand how these learners cope with the demands to read and study materials in their academic majors, within university contexts in particular (Malcolm, 2019), and how learners monitor their own reading which helps these learners decide whether comprehension is taking place, and, as a result, if they need to take further action for lack of comprehension (Alsheikh, 2014). In this study, I use a modified version of Mokhtari and Sheorey's (2020) Survey of Reading Strategies (SORS), to report Iraqi graduate students' use of reading comprehension strategies. Accordingly, for this study, the researcher uses their definition of reading strategies. The second research objective of this study is to examine the effect of Metacognitive strategy training on reading comprehension of the Iraqi female students. To address this objective, three hypotheses have been developed. Hypothesis 1: Metacognitive knowledge has significant impact on reading comprehension of the Iraqi female students; Hypothesis 2: Use of Strategies has significant impact on reading comprehension of the Iraqi female students and finally, hypothesis 3: Planning and management of practices have significant impact on reading comprehension of the Iraqi female students. The finding determines that Metacognitive knowledge and Use of Strategies have significant influence on reading comprehension performance among Iraqi university students, whereas Planning and management of practices have not found any significant influence on reading comprehension performance among Iraqi university. One of the significant objectives of this study is to examine the difference in reading comprehension performance between the pre-and post-test metacognitive strategy training among Iraqi female students. To address this objective of this study, a paired sample test test was performed. The findings also suggest that the metacognitive strategy training for reading comprehension among Iraqi female students has significantly impacted on their performance. This finding is consistent with other studies that were done under comparable conditions, such as Ilustre (2019) and Jafari & Shokrpour (2018). Similar results showed that, depending on the outcome, pupils tended to adopt problem-solving reading techniques. It was discovered that the usage of online English dictionaries by students was a crucial aid for their comprehension of the language. The pupils said that taking notes is also used to comprehend foreign terms (Piolat et al., 2015). The respondents also said that they used the global reading methods proposed by Mokhtari and Reichard (2013), which include reading aloud, deliberate reading, and speculating on or estimating the text's meaning. In addition to supporting reading skills, the respondents also reported that considering information in both

their home language and English and utilizing reference tools like an online dictionary were useful.

Implication of the Study

One of the immediate implications is that reading comprehension should be incorporated explicitly as an instructional practice and formative assessment in university ESL reading comprehension classrooms as it explicitly develops awareness among students of their goal setting, strategy planning, and strategy use. Moreover, reading comprehension should be treated in line with the cyclical model of SRL. It should not only be used at the end of learning to evaluate the performance, but also used at every stage of the learning: planning, execution, evaluation, and reflection. As reading comprehension is considered merely an alternative strategy, it has frequently been used only at the final stage of learning. However, this study has indicated that using reading comprehension throughout the semester yielded significant results in terms of reading performance. This current study has also provided evidence that reading comprehension performance should be used as an instructional method. Dignath, Buettner and Langfeldt (2008) asserted that classroom interventions that include planning, monitoring, and evaluation produce greater effects than those that focus on evaluation alone. reading comprehension is more extensive than just an alternative assessment tool because it makes learners reflect on their performance, nurtures learning skills and abilities as well as makes learners take charge of their own learning (Nawi,Redzuan,Ahmad&Nawi, 2015; Sluijsmans, Dochy & Moerkerke, 1998). The findings of the current study can be of great benefit to language educators, including teachers, instructional designers, L2 specialists, and material developers. The first pedagogical implication of this study is that teachers should help learners to become autonomous in learning writing by introducing instructional and assessment methods that promote autonomous learners. Hence, teachers should be trained to effectively incorporate self-assessment as an instructional practice with the objective of improving learners' writing performance and promoting SRL behaviours. Learners will become more supportive of instructional practices that position the teacher as the facilitator. This was evidently an issue in the research context, where learners looked to the teacher for everything pertaining to their learning. Therefore, understanding the benefit of an instructional method is essential for successful learning.

Conclusion and Recommendations

Reading comprehension is complex and multifaceted, making it difficult to improve. Stagnant scores of adolescents are likely due to multiple reasons including the ones outlined in this article. Improving adolescent reading comprehension will require a concerted effort from researchers, educators, and policymakers to forgo short-term gains on measures that tap low-level comprehension for long-term solutions that take years to develop. An early and sustained focus on developing background knowledge, vocabulary, inference, and comprehension monitoring skills is necessary to improve reading comprehension across grade levels. In addition to developing and disseminating effective research practices and programs, teacher preparation and professional development will need to be strengthened to improve reading comprehension instruction. One first step is for all states to require that teachers are knowledgeable about evidence-based literacy practices and have expertise in the content they plan to teach. Ensuring that all teachers meet these standards will require collaboration among policy makers, state and district leaders, teacher preparation programs, and accrediting agencies. The current study is conducted in Iraqi university female schools. The importance of this study is that it makes sense of reading comprehension and offer detailed information about the reading ability and students' performance in reading comprehension. So far, there are

inadequate studies conducted in Iraq about reading comprehension ability therefore it is hopeful that this study will shed light about Iraqi students' reading comprehension ability. The current study will facilitate the establishment of reading standards for students and subsequently provide a pathway to develop an English language curriculum framework for Iraq. Moreover, in the light of the results obtained, metacognitive strategies of student are found to be positively effective in developing students' reading comprehension. Thus, Iraqi Female students are really in need of for an effective and up-to-date effective reading. The study also is positively effective in developing the experimental group subjects' use of the reading comprehension strategies in the post-administration of the reading comprehension strategies survey. This may be ascribed to the newness of strategies taught as opposed to the boredom of traditional comprehension questions and exercises students are used to. It is recommended that training students in reading comprehension strategies should be an essential part of a reading comprehension course at university level.

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