Iraqi EFL University Students' Metacognitive Regulation and Speaking Performance: A Correlational Study

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ABSTRACT

Language is a means of thinking and transmitting culture from one generation to the next, as well as from one country to another. It is also a form of communication between people. Speaking is a major skill in communication. Speaking is a fundamental mode of interpersonal interaction in which humans send messages, exchange experiences, and connect with one another. Metacognitive regulation refers to the ability to plan, monitor, control, and adjust one's cognitive processes during learning tasks. This present study designs to investigate the correlation between metacognitive regulation and speaking performance among Iraqi EFL University students. A random sample of 360 students from several Iraqi universities (including Baghdad, Basra, and Mosul), colleges of education, and English departments was chosen throughout the academic year (2022-2023). Data is collected using two instruments: a questionnaire to examine metacognitive regulation and a speaking test is conducted to assess their performance in speaking English. A correlational analysis is employed to investigate the relationship between metacognitive regulation and speaking performance. The data suggest that Iraqi EFL university students have a good level of metacognitive regulation. Furthermore, the study found a positive correlation between metacognitive regulation and speaking performance, indicating that students recognise the importance of

monitoring their own comprehension and language production, effectively planning their tasks, and evaluating their performance in order to improve their skills. It demonstrates that students are actively engaging in metacognitive processes to enhance their learning outcomes.

Key Words: Speaking Performance; EFL , Metacognitive Regulation

التنظيم ما وراء المعرفي وأداء التحدث لدى طلاب جامعة اللغة الإنجليزية كلغة أجنبية في العراق: دراسة ارتباطية

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الملخص

اللغة هي وسيلة التفكير ونقل الثقافة من جيل إلى جيل ومن بلد إلى آخر. وهو أيضًا شكل من أشكال التواصل بين الناس. التحدث هو مهارة رئيسية في التواصل. يعد التحدث وسيلة أساسية للتفاعل بين الأشخاص حيث يرسل البشر الرسائل ويتبادلون الخبرات مع بعضهم البعض. كما ان التنظيم ما وراء المعرفي يشير الى القدرة على التخطيط والمراقبة والتقييم للعمليات المعرفية خلال تعلم المهام .لذلك ، تتناول الدراسة الحالية العلاقة بين التنظيم ما وراء المعرفي وأداء التحدث لدى طلاب الجامعة العراقيين دارسي اللغة الإنجليزية كلغة أجنبية. وقد تم في هذه الدراسة اختيار عينة عشوائية مكونة من ٣٦٠ طالباً من عدة جامعات عراقية (منها بغداد والبصرة والموصل) من كليات التربية – قسم اللغة الإنجليزية للعام الدراسي (٢٠٢٢-٢٠٢٣). من اجل تحقيق اهداف الدراسة ، تم جمع البيانات باستخدام أداتين: استبيان لقياس مستوى التنظيم ما وراء المعرفي وكذلك اختبار التحدث لتقييم مهارات الطلاب. تم استخدام التحليل الارتباطي لدراسة العلاقة بين التنظيم ما وراء المعرفي وأداء التحدث. وقد اظهرت النتائج أن طلاب الجامعات العراقية في مجال اللغة الإنجليزية كلغة أجنبية لديهم مستوى جيد من التنظيم ما وراء المعرفي. علاوة على ذلك، وجود علاقة إيجابية بين تنظيم ما وراء المعرفي وأداء التحدث، مما يشير إلى أن الطلاب يدركون أهمية مراقبة فهمهم وإنتاجهم اللغوي، والتخطيط الفعال لمهامهم، وتقييم أدائهم من أجل تحسين مهاراتهم. وهذا يبين أن الطلاب ينخرطون بشكل فعال في العمليات ما وراء المعرفية والتي تقوم على تعزيز مخرجات التعلم الخاصة بهم.

الكلمات المفتاحية: التنظيم ما وراء المعرفي ؛ أداء التحدث ؛ اللغة الانكليزية كلغة اجنبية

1. Introduction

English has gained prominence as the foremost global foreign language over the past thirty years. Speaking is seen to be the most popular skills for an individual to be considered competent in a foreign language. Speaking encompasses more than the mere construction of grammatically accurate phrases; it encompasses a wide range of aspects including mechanics, functions, pragmatics, and social interaction (Al-Bayati, 2015). Ulashovna (2020) state that speaking " is the ability to articulate words, phrases, and sentences in a spoken form" (p. 32). Furthermore, speaking is regarded as "a skill that has to be "practiced" "mastered" which requires vocabulary development, an understanding of grammar and sentence structures" (Baruah, 1991, p. 78). Additionally, it involves a dynamic interrelation between speakers and hearers that results in their simultaneous interaction of producing and processing spoken discourse under time constraints (Polat et al., 2020).

On the other hand, Metacognition can be regarded as a particular sort of cognition, or more accurately, a subset of cognition. Schraw & Dennison (1994) defines Metacognition as the ability to reflect upon, understand, and control one's own learning. As stated by Brown (1987, p. 30), metacognitive regulation (MR) " is a dimension of metacognition; the means by which we regulate our cognition". Also, Ozturk (2017) indicates that MR refers to students' knowledge about the implementation of strategies and the ability to monitor the effectiveness of their strategies. When students regulate, they are continually developing and monitoring their learning strategies based on their evolving self-knowledge.

1.1 The Problem and its Significance

In Iraq, teaching English as a foreign language constitutes an important process in the whole educational system. Metacognitive

regulation supports students in managing and optimizing their performance on language learning tasks. Students who possess metacognitive regulation skills can plan , monitor, and evaluate their language learning activities more efficiently. They can set specific goals, break tasks into manageable steps, and allocate their time and resources effectively. Therefore, both instructors and learners of foreign languages frequently encounter challenges and obstacles particularly throughout the process of learning and teaching productive skills. Thus, characteristics like metacognitive regulation have a significant role in the language learning process and overall performance of Iraqi EFL students. Attempts have been made to study how this variable is connected to the English speaking performance of these students.

After reviewing the literature, no study has explored the relationship between metacognitve regulation and performance in speaking skills among Iraqi EFL University students. The current study aims to fill this gap effectively.

1.2 Research Questions

This study attempts to answer the following questions

1. What are Iraqi EFL university students' level in metacognitive regulation and speaking performance?
2. Is there a correlation between Iraqi EFL university students' level in metacognitive regulation and speaking performance?

2. Literature Review

2.1 The concept of Metacognitive Regulation

Metacognition refers to the awareness and control individuals have over their own cognitive processes, including their thinking, learning, and problem-solving strategies. Flavell (1979), defines metacognitive regulation (MR) as referring to:

" **a set of activities that help learners control their learning, working on the basis of the metacognitive knowledge and referring**

to processes to ensure realization of learning goals. This management involves planning, monitoring, and manipulating the cognitive processes to obtain optimal learning outcomes" (p. 906).

Referring to Flavell (1979), the 'meta' means higher-order cognition. It encompasses two sections: metacognitive knowledge and metacognitive regulation. The meta (higher-order) is 'thinking about thinking' and which strategies are recruited as the learner is thinking about how well he understood the text (monitoring). If he did not get well, he may reread or use a dictionary (regulating).

Jafarzadeh (2016) indicates that Metacognitive regulation plays a crucial role in English language learning as it enables learners to take control of their own learning process, monitor their progress, and adjust their strategies as needed.

2.1.2 The Nature of Metacognitive Regulation in EFL

Educational experts are constantly pay attention in Metacognition, which are the study of human cognitive processes and the development of ways for strengthening and enhancing these abilities. Furthermore, education researchers and specialists are often interested in the sort of knowledge level of the learners. As a result, learners are required to think critically about what they hear or read, as well as to evaluate the connection between ides and being determined in the process (Okmawati, 2021).

Furthermore, Anita Wenden has become known for being the pioneer in applying Flavell's model of metacognition to the study of second/foreign language learning and teaching. She has extensively researched and published on this topic, with notable works including Wenden 1987a, 1998, as well as practical manuals such as Wenden 1987b, 1991. Regarding second/foreign language instruction, Wenden (1998) argues that metacognitive "refers to the enduring understanding

individuals possess about their own cognitive processes and those of others" (p. 516).

In other word, Students with good metacognition regulation are able to monitor and direct their own learning processes; they have the ability to master information and apply the learning strategies to solve problems more easily. According to Zhang (2017), students who have been equipped with metacognitive regulation strategies are aware of their learning and understand how and when to use the most appropriate strategies to complete a given task; they understand how to perform a certain activity in an efficient way. Students that use more metacognitive regulation strategies have higher levels of autonomy and self-motivation (Dawood, 2013).. They engage in more activities and attract more people for planning, organising, monitoring, and evaluation (Maxim, 2009; Zimmerman, 1986).

2.1.3 Components of metacognitive regulation

As mentioned by Baker (1989); Schraw & Dennisson (1994) ; Lai (2011); Mahdavi (2014) ; and Stephanou & Karamountzos (2020), metacognitive Regulation includes three main components for facilitating the process aspect: *Planning, Monitoring* (involve three sub-components: a) information management strategies, b) monitoring the comprehension, c) debugging strategies) *and Evaluating* . They are as follows:

1. Planning

As mentioned by Mahdavi (2014), *planning* encompasses the selection of appropriate strategies for learning language and the distribution of resources that are efficient in achieving goals. Schraw & Flowerday (2003, p. 1090) admit that "planning includes goal setting, activating prior knowledge and managing time allocation."

2. Monitoring

Monitoring is the act of consistently controlling and overseeing the implementation of strategies in order to accomplish a particular goal (Cera et al., 2013).More specifically, it encompasses activities of self-observation, focusing on monitoring one's cognition, motivation, attitude, task demands, time, and need for assistance (Zimmerman, 2002).

3. Evaluating

Evaluation "refers to appraising the products and regulatory processes of one's learning" (Schraw et al., 2006, p. 114). It is associated with the evaluation of outcomes achieved and the identification of the learner's reactions to these outcomes. Moreover, as Veenman et al. (2011, p. 8) state evaluation is "the process of assessing the progress achieved towards goals, which can then inform future planning, monitoring, and evaluation.

2.1.4 Benefits of Metacognitive Regulation in EFL

Some specific impacts of metacognitive regulation may include:

1. ***Improved academic performance***: Metacognitive regulation strategies have been shown to positively impact academic performance in language learning contexts. A study by Flavell et al. (2002) found that metacognitive skills were associated with higher academic performance in foreign language learning.

2. ***Improved Language Learning Strategies***: Metacognitive regulation allows learners to become more aware of their own learning strategies and make deliberate choices about which strategies to use (Krebt, 2023, Dawood, 2021). This awareness promotes the selection and application of effective language learning strategies, such as setting goals, organizing information, and self-evaluating progress (O'Malley & Chamot , 1990 ; Teng , 2019).

3. ***Increased Autonomy and Self-Direction***: Metacognitive regulation empowers learners to take control of their own learning. By monitoring

their comprehension and progress, learners can identify areas where they need additional support or resources, and actively seek out opportunities to practice and improve their English language skills (Oxford, 2011; Teng, 2017).

4. ***Increased engagement***: Metacognitive regulation strategies can contribute to increased engagement in language learning (Uliewe & Mousa, 2023). Zimmerman (1990) highlighted the role of metacognition in fostering self-regulation, which includes setting goals, self-monitoring, and self-reflection that can enhance engagement.

5. ***Enhanced problem-solving skills***: Metacognitive strategies are closely linked to problem-solving skills (Sutarto etal. , 2022). A study by Cohen and Aphek (1980) examined the relationship between metacognition and problem-solving abilities in language learning and found that metacognitive skills were positively correlated with problem-solving performance.

2.1.5 Challenges of Metacognitive Regulation in EFL

Metacognitive regulation in learning English as a foreign language can present some challenges as following:

1. ***Limited Metacognitive Awareness***: Many students may have a limited understanding of metacognition and its role in language learning. They might not be aware of the various metacognitive regulation strategies available or how to apply them effectively in their language learning process (Chamot & O'Malley, 1994; Benson, 2016).

2. ***Cultural and Linguistic Factors***: students from different cultural and linguistic backgrounds may face challenges in transferring metacognitive strategies from their native language to English. The cultural and linguistic differences in learning approaches and expectations can affect the application of metacognitive regulation in a foreign language context (Dawood & Ali, 2019; Haukås, 2018).

3. ***Lack of motivation***: Motivation is a key factor in language learning and metacognitive regulation. Research by Csizér & Dörnyei (2005) and Ushioda (2011) state Students may lack motivation to use metacognitive regulation strategies, particularly if they do not see immediate benefits or results.

4. ***Difficulty in Self-Reflection***: Engaging in self-reflection requires learners to objectively assess their own learning processes and identify areas for improvement (Wongdaeng, 2022). . However, learners may struggle with accurately evaluating their language skills or recognizing their own strengths and weaknesses (Vandergrift & Goh, 2012).

5. ***Time and Effort Constraints***: Engaging in metacognitive regulation requires time and effort, which learners may find challenging to allocate amidst other academic or personal commitments (Crescenzi, 2016). The process of planning, monitoring, and evaluating learning may be perceived as time-consuming, leading to potential resistance or neglect of metacognitive strategies (Brown, 1987; Rustiyani etal., 2023).

2.2 Speaking Performance

2.2.1 Definition of Speaking Skill

According to Chastain (1998), *speaking* is:

" **a productive skill that involves many components, such as grammar, vocabulary, strategy, sociolinguistics and discourse; for him speaking is more than simply making the right sounds, choosing the right words or getting the constructions correct" (p. 330).**

This process requires speakers to "make decisions about why, how and when to communicate depending on the cultural and social context in which the speaking act occurs" (Burns and Seidlhofer 2002, p. 106).

Besides, Sharma (2018) maintains that "it is a dynamic process that allows making a more constructive and effective communication" (p. 55). Whereas, Chaney (1998, p. 13), noted that speaking is "the

process of building and sharing meaning through the use of verbal or non-verbal symbols in a variety of contexts". Also, Nunan (2003) affirms that for the successful acquisition of the speaking skill in the target language, some subskills should be developed, such as expertise on stress, rhythm, intonation patterns; transactional and interpersonal skills; and an acceptable degree of fluency.

2.2.2 Components of Speaking Skills

When it comes to speaking, there are several components that contribute to effective oral communication. These components include:

a. Fluency and Accuracy

Li & Zhang (2023) discuss the nature and basic polarity of accuracy and fluency in language learning and distinction between them is essentially a methodological one more than psychological or linguistic. The term **accuracy** refer to a focus of the student on formal factors or issues of appropriacy, which will be evaluated for their observed characteristics. As for Wolfe-Quintero et al.(1998), accuracy is a degree of deviancy from a particular norm; deviations are usually characterized as errors.

In contrast to accuracy, which may pertain to oral and written FL/L2 performance, **fluency** is first and foremost a measure of spoken language, even though writing research also uses measures of fluency (Şahin Kızıl, 2023; Segalowitz, 2000, 2010). Also, fluency is ease, eloquence, and smoothness of speech or writing. It involves speaking without frequent pauses, hesitations, or disruptions. (Kormos & Dénes, 2004; Yu & Lowie, 2020). Fluency allows for more natural and engaging communication (Evans & Larsen-Freeman, 2020; Freed, 2000) . Fluency is regarded to be a natural language use, whether or not it results in native-speaker-like language comprehension or production (Koponen & Riggenbach, 2000; Michel, 2017).

b. Pronunciation

Pronunciation refers to the correct articulation of sounds, stress patterns, and intonation in spoken language (Carter et al., 1998). According to Rahmat (2020), pronunciation involves accurately producing individual sounds and blending them together to form words and sentences. Good pronunciation ensures that the speaker is easily understood by others and helps convey meaning effectively (Goh & Yusnita, 2006).

c. *Vocabulary*

Vocabulary encompasses the range of words and phrases a speaker knows and uses (Harmer, 2007). Without vocabulary, we cannot say something. The size and diversity of one's vocabulary influence the ability to express ideas accurately and precisely (Afna, 2018). A rich vocabulary allows speakers to select the most appropriate words to convey their intended meaning and to understand and participate in a variety of conversations (Oradee, 2012) .

d. Grammar

According to Fromkin (2000, p.7) defines grammar as follows:

A grammar includes everything one knows about the structure of one's language – its lexicon (the words or vocabulary in the mental dictionary), its morphology (the structure of words), its syntax (the structure of phrases and sentences and the constraints on well formedness of sentences), its semantics (the meaning of words and sentences) and its phonetics and phonology (the sounds and the sound system or patterns).

Using correct grammatical structures enables speakers to communicate ideas clearly and accurately (Kusumawardani & Mardiyani, 2018). Proficient speakers " are able to use grammar effectively to express relationships between ideas, convey meaning, and create coherent speech" (Harmer, 2007, p. 218).

e. Comprehension

As mentioned by Aswaliya (2015), Comprehension is 1) the act or fact of grasping the meaning, nature, or importance of; understanding; the knowledge that is acquired in this way, 2) Capacity to include and 3) Logic the sum of meaning and corresponding implications inherent in a term.

Comprehensibility denotes " the ability of understanding the speakers' intension and general meaning" (Lisnawati, 2021, p. 2046). That means that if a person can answer or express well and correctly, it shows that he/she comprehends or understand well (Derakhshan et al. ,2016).

2.1.3.2.3 Speaking Genres

The genre theory assumes that different speech events result in different types of texts, which are distinct in terms of their overall structure and kinds of grammatical items typically associated with them (Hughes & Reed, 2016 ; Boromisza-Habashi & Reinig, 2018). Carter and McCarthy (1997) classify speaking extracts in terms of genres as follows:

a. ***Narrative***: A series of everyday anecdotes told with active listener participation.

b. ***Identifying***: Extracts in which people talk about themselves, their biography, where they live, their jobs, their likes and dislikes.

c. ***Language-in-action***: Data recorded while people are doing things such as cooking, packing, moving furniture… etc.

d. ***Comment-elaboration***: People giving casual opinions and commenting on things, other people, events and so on.

e. ***Debate and argument:*** Data, in which people take up positions, pursue arguments and expound on their opinions.

f. ***Decision-making and negotiating outcomes***: Data illustrating ways in which people work towards decisions/consensus or negotiate their way through problems towards solutions.

3. Methodology

One of the critical decisions that a researcher should make is to select an appropriate design for research work. Correlational research is designed to determine the relationships between two or more variables (Curtis etat., 2016). According to Mills & Gay (2016), correlational research is referred to as descriptive research because it describes an existing relationship between variables and reveals the differences between them in order to describe and analyze, collecting data to determine whether, and to what degree a relationship exists between two or more quantifiable variables.

3.1 Population and Sample

The population in the present study represents (4511) third year university students who are studying in morning studies in the Department of English at the Iraqi colleges of education for human sciences except Kurdistan region during the academic year 2022-2023. While the study sample consists 360 third-year university students who are selected randomly from the colleges of education in three universities: Baghdad , Basra and Mosul as is it displayed in Table (3.1) below:

Table 3.1 *Sample of the Study*

No.	University	College	Percentage	Sample
1	Baghdad University	College of Education /Ibn Rushd	35%	122
2	Basra University	College of Education for Human Sciences	35%	173
3	Mosul University	College of Education for Human Sciences	30%	65
Total			100%	360

3.2 Instruments

Two instruments have been used to achieve the present study's aims. The first one is ***metacognitive regulation questionnaire*** (MRQ), which has been adopted from Schraw & Dennison (1994). It consists of (35) items intended to measure the participants' level of metacognitive regulation. The MRQ is divided into three domains: *planning, monitoring, and evaluating*. The items are distributed as follows:

1. **Planning** = 7 items from (1-7) .
2. **Monitoring** = 22 items from (8-29) which includes three types:

a. Comprehension Monitoring = 7 items from (8- 14).

b. Information Management Strategies = 10 from (15-24).

c. Debugging Strategies = 5 from (25-29).

3. **Evaluating** = 6 from (30-35).

The questionnaire is scored according to a five Likert scale of five points (strongly disagree, disagree, Neutral, agree, strongly agree), which are given the score of (1, 2, 3, 4, 5) respectively for the positive items. A total score for the questionnaire is calculated by summing the scores obtained by the respondent for each scale of the item chosen. The lowest score gets (35), while the highest score gets (175). Higher scores indicated to the higher levels of metacognitive regulation and vice versa for the lower scores

The second instrument, the ***speaking performance test*** (SPT), is related with interview test. Before exposing the draft test to the jury members, the researcher consulted relevant literature on the topic to prepare the speaking test. To test students' speaking performance, the researcher herself prepares and develops a structured interview. According to Fulcher (2010), the most popular speaking exam type is the interview format, in which test takers speak with an interviewer while their performance is examined.

Thus, this test consists of interview questions are given by the researcher herself to the student by several cards which asks them to choose only just one from the interview questions, and the researcher records the answer with a recording device and presents it to experts who speak semi-native English who conduct the evaluation of students. In accordance with the jury members' advice, the interview tool includes (6) major interview questions and (4) sub-interview questions for each major question to be (24) total interview questions. The total score is (20) according to scoring rubric which consists of five components of speaking: Fluency, Pronunciation and accent, Vocabulary, and Grammar. These components are leveled from one to five (poor, fair, good, v. Good, excellent). Thus, the highest score a student can get is (20) while the lowest score is (5). The topics are chosen based on their relevance to the sample's interest and level, their authenticity, and how current they are conceptualized.

The interview lasts (11 to 15) minutes and is recorded on an audio cassette. The test has been divided into two phases as follows:

Phase 1: is an introduction, which consists of a series of brief questions and responses designed to familiarize the student with the test . The examiner or teacher asks relatively simple questions about the participant's home, family, country, jobs, studies, interests for (3 to 5).

Phase 2: is an individual long turn in which the student must talk for (3 to 5) minutes on a chosen topic. Each student is given a subject matter and is required to discuss it in the form of a monologue with a time constraint of (3 to 5) minutes.

3.3 Psychometric Properties of the Instruments

3.3.1 The Validity

Brown & Rodgers (2002, p. 221), states that validity refers to "the degree to which a test actually measures what is intended to measure".

Two type of validity has been estimated: *face validity and constructing validity*, which presented as follows:

3.3.1.1 Face validity

Face validity is defined "as the degree to which test respondents view the content of a test and its items as relevant to the context in which the test is being administered" (McNamara, 2006 ,p.133).

To ensure the face validity of the two study instruments, they have been exposed to a jury of a specialist in ELT. The jury members are asked to decide on the appropriateness of the instruments in measuring the investigated variables. The jury includes 15 professors and assistant professors from different Iraqi universities. The jury members agree on the suitability of the instruments and the scoring scheme for achieving the study's aims, except for some linguistic modifications which are taken into consideration , before putting the final form of each instrument.

3.3.1.2 Construct Validity

Construct validity an instrument can be evaluated by checking the patterns of correlations within the scores achieved by subjects responding to the instrument items. This can be achieved through statistical analysis of the instrument items (Trochim et al., 2015). To ensure the construct validity of the two instruments, they have been verified through finding out the item's discrimination power; the correlation coefficient between item score and the total score of each scale; the correlation of items with the component they belong to the score of each component to which the item belongs.

Also, the correlation coefficient of each component has been calculated with the total scores of the scale; Matrix correlation coefficients; and item difficulty level. These methods can help to identify patterns, trends, and relationships in the data, and to test whether these findings are statistically significant. Results show that all the correlational

coefficients are statistically significant and this indicates that the three instruments of the study are valid.

3.3.2 Pilot Administration

A pilot study is a method by which a research instrument is introduced to a small population sample before its final administration (Mohamad et al., 2015). In conducting any analysis, it is a fundamental step. This administration has been conducted in order to check the clarity of the instructions of the instrument, and estimate the time allotted for answering the questionnaire or test. The two instruments have been conducted on a sample of 50 students (not included in the main sample) from the Department of English of /College of Education- Ibn Rushed for Human Sciences is selected to conduct the pilot administration of the research instrument. The pilot study is carried out on 19th, 20th, of February, 2023.

Consequently, the application of the pilot study shows no serious ambiguity concerning answering the instruments. The time required to answer the MRQ is found to range between (15-25) minutes. The time required for SPT is (15) minutes, the whole lesson which is (40) minutes.

3.3.3 Item Analysis

According to the aims of the study, the statistical methods by SPSS are employed to analyze the research findings of this study.

3.3.3.1 Item Discrimination Power

Discrimination power measures how well each item on the instrument is able to differentiate between individuals who have high versus low levels of the trait or attribute being measured (Mbewa, 2017).

The questionnaire is applied to the sample members of (360) students. To extract the discriminatory power of the questionnaire's items, the scores of the sample members are arranged from the highest

total degree to the lowest total degree. The two extreme groups are determined by the total score and by (27%) for each group which represents the best percentage that can be adopted, because it presents two groups with the maximum possible size and differentiation. As well as, Trochim et al., (2015) suggested that the number of members of each of the two extreme groups in the total score when calculating the discriminatory power of the items is (27%) of the sample members. The number of individuals in each group is (97) students in the upper group and (97) students in the lower group. So, the number of individuals in the upper and lower groups was (194) male and female students.

As for MRQ, the t-test was used for two independent samples in calculating the significance of the differences between the mean of the two groups in the scores of each item of the questionnaire and on the basis that the calculated t- test value represents the discriminatory power of the items (Karim, 2021). Through this procedure, it is found that all items are valid and distinct because their calculated t-test value is greater than the critical t-value (1.96) with a degree of freedom (192) and at a significance level (0.05). Table (3.2) shows the results of calculating the discriminative power of the items in MRQ.

Table 3.2 *Items Discrimination Power of MRQ*

Items no.	Higher group		Lower group		Calculated T-value	Level of Significance at level (0.05)
	Mean	SD	Mean	SD		
1	4.000	0.791	2.402	0.920	13.170	Significant
2	4.082	0.838	2.629	0.601	14.103	Significant
3	4.082	0.997	2.660	0.853	10.848	Significant
4	3.959	0.789	2.670	1.115	9.430	Significant
5	4.175	0.804	2.351	0.751	16.593	Significant
6	3.784	0.892	2.577	0.852	9.777	Significant
7	4.000	0.777	2.567	0.762	13.161	Significant

8	3.526	0.830	2.619	1.103	6.826	Significant
9	3.732	0.884	2.722	1.038	7.526	Significant
10	3.794	0.776	2.649	0.778	10.412	Significant
11	3.784	0.844	2.567	0.956	9.535	Significant
12	3.773	0.823	2.804	0.897	7.960	Significant
13	3.866	0.656	3.330	0.886	4.862	Significant
14	3.557	1.020	2.876	0.807	5.230	Significant
15	3.918	0.920	3.216	0.992	5.180	Significant
16	4.103	0.835	2.897	0.729	10.882	Significant
17	3.918	0.920	3.021	1.020	6.527	Significant
18	3.845	0.833	2.876	0.982	7.525	Significant
19	4.010	0.848	2.485	0.925	12.157	Significant
20	3.732	0.810	2.639	0.991	8.534	Significant
21	3.887	0.877	2.588	0.910	10.281	Significant
22	3.763	0.933	2.526	0.902	9.531	Significant
23	3.925	0.890	3.567	1.009	2.658	Significant
24	3.608	1.026	3.113	0.705	3.974	Significant
25	4.000	0.816	3.660	0.956	2.706	Significant
26	4.031	0.809	3.567	0.978	3.654	Significant
27	4.072	0.869	3.278	0.826	6.621	Significant
28	3.959	0.789	3.371	0.993	4.632	Significant
29	4.052	0.782	3.371	0.939	5.568	Significant
30	4.351	0.751	3.000	0.791	12.389	Significant
31	4.278	0.851	3.186	0.870	8.981	Significant
32	4.093	0.751	2.938	0.827	10.336	Significant
33	4.021	0.878	2.866	0.909	9.140	Significant
34	4.155	0.821	3.010	0.919	9.290	Significant
35	4.330	0.688	3.031	0.962	10.980	Significant

The results suggest that the discrimination power values for SPT fall within the range of 0.340 to 0.423, as presented in Table 3.3 for writing skills. These results indicate that all the items demonstrate high discrimination powers. It is worth mentioning that specialists consider an item to have an acceptable discrimination power if it is 0.20 or higher (Nuanaly, 1970; Ebel & Frisbie, 1991).

3.3.3.2 Item Difficulty Level

Item difficulty refers to the level of ease or difficulty of an item for a group of students (Brown, 2004, p. 59). It is crucial to strike a balance in test difficulty. If a test is too easy, it may fail to effectively distinguish between high-achieving and low-achieving test-takers. Conversely, if the test is excessively difficult, it may not yield a reliable measure of ability (Mesic, 2011). Finding the right level of difficulty ensures the test accurately assesses the abilities of students.

In SPT, the findings reveal that the difficulty level ranges from 0.431 to 0.457, indicating that all of the test items are within an acceptable and applicable range. According to Khoshaim and Rashid (2016, p.12), test items are considered acceptable if their difficulty level falls between 90.20 and 0.80.) For further details, please refer to Table 3-3 speaking test.

Table 3.3 *Difficulty Level and Discriminatory Power of Speaking Skills Test*

Rubric	Speaking skills										Ease coefficient	Difficulty Coefficient	Discrimination Power
	Correct Responses of High Group					Correct Responses of Low Group							
	1	2	3	4	5	1	2	3	4	5			
Fluency	4	13	18	32	30	45	33	6	4	9	0.569	0.431	0.355
Pronunciation and Accent	5	12	23	26	31	39	32	19	3	4	0.566	0.434	0.340
Vocabulary	9	8	18	30	32	43	35	10	5	4	0.559	0.441	0.363
Grammar	4	9	21	34	29	52	33	6	5	1	0.543	0.457	0.423

3.3.4 Reliability of Instrument

Reliability is another important characteristic of evaluating results. In quantitative research, reliability refers to the consistency, stability, and repetition of results; that is, a researcher's results are regarded trustworthy if similar outcomes have been obtained in identical but different circumstances (Daniel & Frederick ,2018).

In the current study, two methods, namely Test-Retest and Cronbach's alpha, were used to estimate the reliability of the research instrument. Test-Retest involves administering the same instrument to the same group of participants on two separate occasions, as outlined by Ustun et al. (2023). This method helps assess the stability and consistency of the instrument over time. On the other hand, Cronbach's alpha is employed to evaluate the internal consistency reliability of a measurement instrument, especially when it consists of multiple items or questions designed to measure the same underlying construct. This method is discussed by Heale and Twycross (2015) and Quintão et al. (2020). Thus, the stability coefficient value for writing skill is shown in the Table (3.4), these results are considered consistent and reliable.

Table 3.4 *Test-Retest and Cronbach Alpha coefficient for MRQ and WPT*

Instrument	Test-retest	Cronbach's alpha
MRQ	0.92	0.89
Speaking	----------	0.86

To calculate the reliability by using test-retest method, the two questioners are applied on a pilot sample of (40) 3rd year students , with a time interval of (14) days from the first application, then the Pearson correlation coefficient is calculated to the correlation. According to Table (3.4) ,the value is acceptable and has a very good stability coefficient. The test reliability is acceptable if it is not less than (0.5) and very good if it is more than (0.8) (Messick, 1995; Zohrabi, 2013).

4. Presentation and Discussion of Results

To determine the level of Iraqi EFL university students in MR and their performance in speaking skills, arithmetic means and standard deviation were computed. The researchers conducted a t-test on a single sample in order to assess the difference between the arithmetic and theoretical means. The results indicate that the sample arithmetic mean is

(119.681) with a standard deviation of (13.792). To find out the significance difference between the arithmetic mean and theoretical one which is (105), one independent sample t-test is used revealing the results shown in Table (4.1) and Figure (4.1). The computed t-test value (20.195) is found to be higher than the critical t- test value (1.96). The results demonstrate that there is a statistically significant difference at (0.05) level of significance and under (359) degree of freedom, which means that Iraqi EFL university students have a good level of metacognitive regulation.

Table 4.1 *The Mean, Standard Deviation, and T- Test Value for the Metacognitive Regulation Questionnaire*

Variable	Sample	Arithmetic Average	Standard Deviation	Theoretical Mean	T-Value		Significance (0.05)
					Computed	Critical	
Metacognitive Regulation	360	119.681	13.792	105	20.195	1.960	Significant

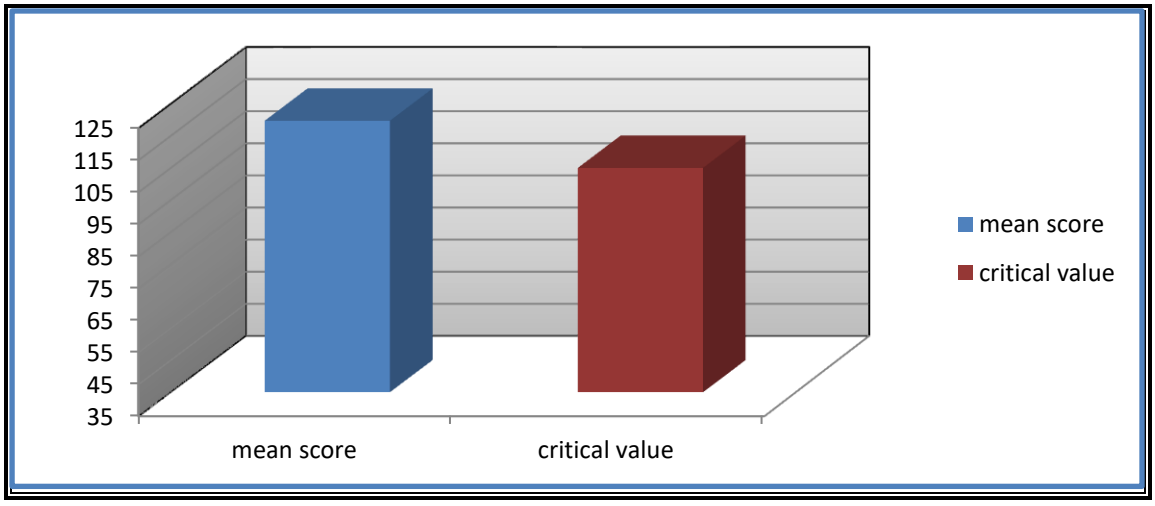

Figure 4.1 *Computed and Theoretical Mean for MRQ*

Also, the arithmetic mean and standard deviation are extracted for each domain of metacognitive regulation, to determent the significance

of the difference between the arithmetic mean and the theoretical mean for each domain, one independent sample t-test is used, and the results are shown in the Table (4.2) and Figure (4.2).

Table 4.2 *The Mean, Standard Deviation, and T-test Value for Domains of the Metacognitive Regulation Questionnaire*

Domains of MRQ	Sample	Arithmetic Average	Standard Deviation	Theoretical Mean	T-Value		Significance (0.05)
					Computed	Critical	
Planning	٣٦٠	٢٢.٥٦٧	٤.١٦٨	٢١	٧.١٣١	١.٩٦	Significant
Monitoring	٣٦٠	٧٥.٢٧٢	٧.٦٧٧	٦٦	٢٢.٩١٦	١.٩٦	Significant
Evaluation	٣٦٠	٢١.٨٤٢	٣.٠٦٧	١٨	٢٣.٧٦٢	١.٩٦	Significant

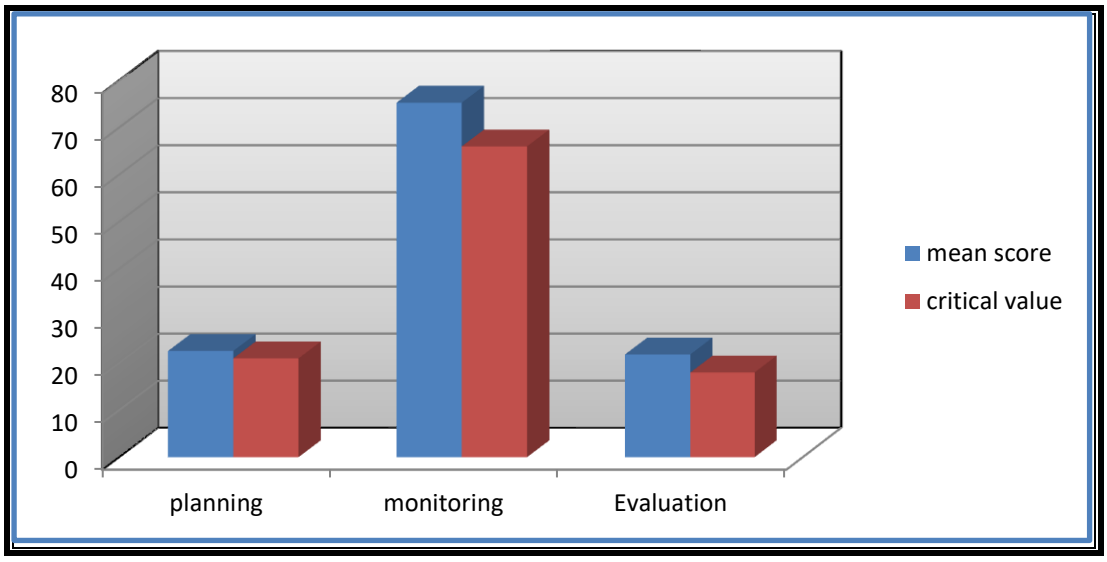

Figure 4.2 *Computed and Theoretical Mean of Domains of MRQ*

According to the Table (4.2) and Figure (4.2) above, the results can be summarized as follows:

1. **For the domain of planning**, the arithmetic mean of the sample is (22.567), the standard deviation is (4.168), the theoretical mean is (21), and the computed t- test value is (7.131), which is higher than the critical value of (1.96) at the level of significance (0.05) and the degree of Freedom (359). This indicates that the research sample has a good level of planning.

2. **For the domain of monitoring**, the arithmetic mean of the sample is (75.272), the standard deviation is (7.677), the theoretical mean is

(66).The computed t- test value is (22.916) , which shows that it is higher than the critical value (1.96) at the level of significance (0. 05) and a degree of freedom (359). This illustrates that the research sample has a good level of monitoring.

3. **For the domain of evaluation**, the arithmetic mean of the sample is found to be (21.842), the standard deviation is (3.067), the theoretical mean is (18), and the calculated t-test value is (23.762),is found to be higher than the critical value (1.96) at the level of significance (0. 05) and a degree of freedom (359). This is reveals that the research sample has a good level of evaluation.

To achieve the second aim, Pearson correlation coefficients and t-tests for the significance of correlation have been employed to identify the correlation between MR and SPT. The results are illustrated in Tables (4.4).

Table 4.6 *The Correlation Between MR and SPT*

Productive skills	Sample	Pearson Correlation Coefficients For MR	T-Value		Significance (0.05)
			Computed	Critical	
Speaking	٣٦٠	0.441	9.800	١.٩٦	Significant

According to the Table above, the correlation coefficient between metacognitive regulation and speaking skill is is (0.441).To find out the significance of the relationship, a t-test is used. The calculated t-test value is (9.800), which is higher than the critical value (1.96) at the level of significance (0.05) and the degree of freedom (358). This means that the relationship between metacognitive regulation and speaking skill is statistically a significant positive correlation; that is, the higher level of the metacognitive regulation of Iraqi university students, is the better their speaking skill.

5. Conclusions

1. Iraqi EFL university students have a good level of metacognitive regulation.

2. Iraqi EFL university students' speaking skills performance is at a good level.

3. Iraqi EFL university students' MR are statistically correlated with their speaking skills, which indicate that MR are positively employed by students.

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