The Effectiveness of Using Cubing Technique in the Iraqi EFL Secondary Students' Composition Writing, Vocabulary, and Meta-Cognitive Awareness

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Abstract

The aim of this research is to determine how well the Cubing Technique affects the Iraqi EFL students' composition writing, vocabulary, and meta-cognitive awareness of writing strategies. The sample of (64) secondary-school female students in the fifth grade is drawn from two classrooms and split into two equal groups: the experimental group and the control group, each of which consists of (32) students. A quasi-experimental design is applied. The performance test and Meta-cognitive Writing Strategies questionnaire are given as a pre-test for equalizing the two groups after ensuring their validity and reliability. Then, they are administrated as a posttest in both groups. According to the results, the significant differences are in favor of the cubing technique. Therefore, it is recommended to use it in teaching English as a foreign language.

Keywords: cubing technique, composition writing, vocabulary, meta-cognitive awareness

فاعلية استعمال استراتيجية المكعب في كتابة الإنشاء و بناء المفردات و الوعي فوق المعرفي للطلبة العراقيين الدارسين اللغة الانكليزية لغة أجنبية

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الملخص

سعت الدراسة إلى الكشف عن فاعلية استعمال استراتيجية المكعب في كتابة الإنشاء و بناء المفردات و الوعي فوق المعرفي لدى طالبات الصف الخامس الاعدادي . تكونت عينة الدراسة من (64) طالبة تم اختيارهن من شعبة أ و شعبة ب و وزعن على مجموعتين كل مجموعة مكونة من (32) طالبة أحداهما تجريبية وأخرى ضابطة ، استخدمت الباحثة التصميم الشبه تجريبي وتم تطبيق اختبار الاداء و استبيان الوعي فوق المعرفي كأداة لقياس الفوارق بين المجموعتين بعد التأكد من صدقهما وثباتهما، وبعدها تم تطبيق الاختبارات البعدية و أظهرت النتائج وجود فروق ذو دلالة إحصائية لصالح طالبات المجموعة التجريبية التي تم تدريسهن وفق استراتيجية المكعب ،وأوصت الباحثة إلى ضرورة استخدام استراتيجية المكعب في تدريس اللغة الانكليزية لغة أجنبية.

الكلمات المفتاحية : استراتيجية المكعب , كتابة الانشاء , المفردات, الوعي فوق المعرفي

I. Introduction

As a communication skill, writing is the fundemental component of learning a foreign language (Chastain:1988:244). The ability to write effectively is a way to reinforce language previously taught (Harmer, 2004:31). Wenden (1991:15) states that it is difficult to develop writing skills in a foreign language because they are exposed to English for a few hours per week. The difficulty of writing springs from the writer's attempt to generate ideas and transform them into readable text (Richard,& Renandya, 2002: 493). In Writing, the main focus is not on accuracy but on the communication of messages to other people in which ideas should be organized well and expressed in an appropriate style (Spratt, 2005: 26). Writing well-formed compositions in English struggles with many structural matters such as selecting appropriate words, applying correct grammar, and generating and organizing ideas about certain topics. On the other hand, word knowledge is a multidimensional process that is more than just reading a word. This process is developed over time by reading words correctly, knowing the meaning of these words, and using them in different contexts in reading as well as writing. Consequently, students should be word conscious by using word-learning strategies.

The problem in this study circles around composition writing in Iraqi secondary schools. Composition writing in such schools has been receiving little attention from the teaching staff. According to the researcher's experience in teaching English, Iraqi EFL students' performance in composition writing shows poor quality. Most of the students are unable to write a piece of a coherent and unified composition. Their lack of vocabulary results in their inability to write texts appropriately. Furthermore, their lack of linguistic knowledge is reflected in their incorrect spelling and weak sentences. This might be due to the teaching method used in the language classroom where there is little interaction between teachers and students. The Iraqi students have few opportunities to reflect on their thoughts or share their opinions with their classmates. Due to the deficiency in EFL students' writing performance, the need for updating the current approaches is highly advisable and some new strategies could be used to create better writers and better thinkers (Badger &White, 2000: 154). Consequently, cubing technique is used to develop students' writing, vocabulary repertoire, and meta-cognitive awareness of strategy use.

1.1 Hypotheses

Five null hypotheses in this study are stated as follows:

1. The post- composition writing test results show no statistically significant difference between the two groups' mean scores due to the teaching technique (cubing vs. conventional). .

2. The post vocabulary test results show no statistically significant difference between the two groups' mean scores due to the teaching technique (cubing vs. conventional).

3. The total score on the post-test shows no statistically significant difference between the two groups' mean scores due to the teaching technique

(cubing vs. conventional).

4.The post-administration of the meta-cognitive awareness questionnaire shows no statistically significant difference between the two groups' mean scores due to the teaching technique (cubing vs. conventional).

5.There is no statistically significant difference between the two groups' mean scores on items and major fields of the post-test of meta-cognitive awareness questionnaire due to the teaching technique (cubing vs. conventional).

1.2 Definitions of Terms

- Effectiveness is the change caused by using the cubing technique in developing the EFL secondary students' performance in composition writing, vocabulary, and meta-cognitive awareness.

-Cubing Technique is an instructional technique in which students consider a certain concept from different perspectives.

-Vocabulary is all the terms persons have learnt in a certain language that are used in books, subjects, etc. (Hornby, 1995:959).

-Writing is defined by Meyers (2005:2) as a process of finding and gathering your thoughts, writing them down, and then altering and modifying them. Meta-cognitive awareness is the individual's high level of thinking in which he is aware of his cognitive process, and able to plan for achieving learning tasks, monitor, and critically evaluate his performance of the learning tasks as well as the performance of others.

1.3 Study Limitations

The current study is conducted within the following limits:

1.The use of the cubing technique in teaching students how to write two different types of composition (descriptive and narrative) as identified in "English for Iraq, 5th Preparatory Student's Book "

2.The EFL secondary students at Al- Anbar School in Ramadi. They were enrolled in the 5th- grade, in the 2nd semester of the academic year 2019-2020.

3.Theoretical Framework& Previous Studies

2.1 The Writing Nature

Writing is a challenging activity. To write appropriately, many elements should be taken into account. Some experts identify the basic components of writing: content, grammar, style, and mechanics (Haris,1969: 68). In addition, writing is a brain activity in which both sides of the brain are used with a big position for the right side (Deporter& Heracki, 2002:179). Writing is the fundamental feature of language learning which provides a good way for developing vocabulary, spelling, and sentence patterns, and it can be efficiently acquired through practice (Petal& Jain, 2008:125). In the Process of Writing, there are five stages as proposed by Clark (2007: 10):

1. Prewriting

It is a stage of ideas generation, topics brainstorming, ideas connection, or thinking about ideas. These ideas may be taken from personal experiences, newspapers, television stories, pictures, and other sources.

2. Drafting

At this stage, students' ideas are put on paper and they need to consider the genre, audience, and message.

3. Revising

At this stage, students look at the writing structure and analyze their writing concerning word sequence, topic sentences, and supporting details.

4. Publishing

At this stage, students are ready to present a handwritten or typed copy, as the final product.

5. Reflecting

Finally, students are encouraged to examine their writing to check if the planned goals were achieved.

2.2 Genre

A text type is considered to be an important concept in the language. Genre is the (written or spoken) language used in a culturally specific text type to produce something. And genres are classified into many kinds of texts including report, descriptive, recount, narrative, expository, news item, argumentative, and spoof (Gerot& Wignel, 1994:190-219).

The current study only deals with descriptive and narrative writing as in the 5th- grade textbook.

2.2.1 Descriptive Text

As a distinctive type of test, the descriptive text presents a full description of a certain person, place, thing, phenomenon, etc. The students use their five senses to write a vivid description of the object to make the reader imagines it (Nadell, et al. (2003: 155). Furthermore, according to Tompkins (1994: 111) the descriptive writing is "painting pictures with words", and there are some categories that should be thought about by the writer: 1) place and position, 2) measurement, 3) shape, 4) colours, 5) material, 6) technical vocabulary, and so on (Jolly,1994: 56). Writing descriptive text is a difficult assignment because students lack expertise in this genre and they need explicit instruction to learn different strategies to develop their ability in writing descriptive text. Head & Lester (1999: 29) declare that cubing strategy can be used in descriptive writing because it helps students to examine the data from several angles to develop their critical thinking.

The descriptive text's generic structure is divided into three stages:

1.Identification

This stage represents the introduction of the thing that is going to be described in a short paragraph, it attracts the reader's attention to read it.

2. Description

This stage gives a full description of the thing identified in the previous stage. It may be one paragraph or several paragraphs. This description should be made in terms of different sides, such as size, shapes, color, condition, location, qualities, etc. (Pardyono, 2007: 34.).

3. Conclusion

In this optional part of the descriptive text, the writer presents a conclusion or restates the description to remind the reader of the important point and to imagine the subject.

In the descriptive text, some linguistic features are employed as identified by Emilia and Christie (2013); and Watkins (2005). They are summarized below:

1. Use present tense as a dominant one;
2. Use action verbs to give an additional description of the participants' actions and behaviors ;
3. Use mental verbs to describe feelings;
4. Use adjectives and adverbs to give information about the participants and their actions;
5. Use adverbial phrases to give detailed information about manner, place, time, and circumstances;
6. Use figurative language such as simile, and metaphors (as cited in Noprianto, 2017: 67-68; Siregar, 2016:26).

2.2.2 Narrative Text

The aim of this type is to amuse the reader and provide a moral lesson at the end of the story through the telling of a series of past events that may be fictional or non-fictional with a problematic event and resolution
 (Pardyono, 2007: 94; Conlin,1983: 352).

According to Siahaan (2008: 73) the narrative text's generic structure is made by establishing the basic components of the story including the character, place, and time.

The "generic structure" of narrative text is built in five steps, which are as follows:

1. Orientation: It includes establishing the scene by introducing the characters and the problematic thing.
2. Evaluation : There is a sequence of events that happened in the past. This step represents a stepping back for evaluating the plight.
3. Compilation: A crisis arises and there may be one complication or more.
4. Resolution: A crisis is resolved, and there can be a good resolution or a bad one.
5. Re-orientation: This optional step involves a moral lesson submitted to the reader.

The grammatical elements are as follows:

a) Action verbs, for example; he collected, kicked, and ran away.
b) Temporal connectives, for example; after, then, and after that.
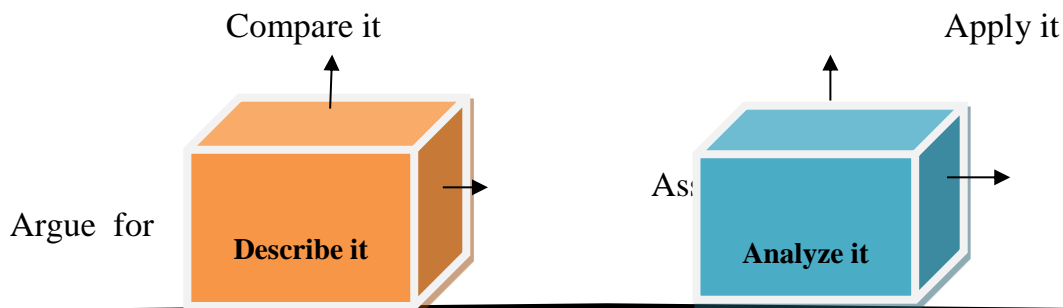
2.3 Cubing Technique

As a pre-writing technique, cubing was originally used to explore topics from different dimensions by using a concrete visual of a cube to think about and understand the multiple dimensions of a certain topic. Students are allowed to use six different perspectives related to the topic to facilitate their understanding of the topic. These six sides are identified by Forget (2004:124) including describing, comparing, associating, analyzing, applying, and arguing. The multiple dimensions of the topic are presented through the concrete vision of a cube.

Cubing as a writing technique is useful for giving the students the chance to develop multidimensional perspectives about the given topic. As a group creativity strategy, cubing is used to solve a certain problem by generating a large number of ideas. This technique serves the students' individual differences and engages all students because the cubes can be adjusted according to students' readiness, interest, or learning style. Thus, a cube with six sides is vital in brainstorming ideas that will lead to six approaches to the topic.

There are six perspectives of Cubing technique as proposed by Nazario, et al. (2013: 329). They are as follows:

a. Describe: This perspective includes visualizing the topic and listing its main details, properties, and characteristics.

b. Compare or contrast: the similarities and the differences between the given topic and the other topics are made by many comparisons to list them and answer important questions: What are the topics similar to or different from the given topic?

c. Associate: In this perspective, an association between the topic and other events made by students to remember the topic.

d. Analyze: In this perspective, the students must identify details by analyzing the parts of the topics to explore their significance.

e. Apply: Through this perspective, the students discover the main applications of the subject and its usefulness.

f. Argue against: In this perspective, the topic's advantages or disadvantages are identified by the students who make an argument about the topic concerning controversies and challenges surrounding the topic.

In writing a paragraph or essay, cubing technique is used to enable students to examine a topic from six different perspectives carefully to construct meaning about a topic before writing fully.

Figure 1: The Six Perspectives of Cubing Technique

2.3.1 The Procedures

As proposed by Sejnost (2009:169) the procedure of cubing technique includes the following:

1. Introduce the topic which is represented by the six sides of the cube. Each side represents a certain perspective. All the perspectives should be considered by the students to understand the given topic fully. They must pay attention to the explanation of the topic (the six perspectives of the cube) given by the teacher.
2. Next, the teacher gives his students a few minutes to examine each side of the cube and he divides them into small groups.
3. Finally, the teacher encourages his students to write about the topic in detail taking into account the six possible angles and they work in their groups to deal with the six viewpoints of the cube in order to offer a well-formed piece of writing as a descriptive or narrative text.

2.3.2 The Advantages of Cubing Technique

The active use of cubing technique results in understanding conceptual knowledge of a topic, paragraph writing skills, and vocabulary mastery. According to (Alteri, 2010: 61; Axelrod & Cooper, 2010:568), the use of cubing technique enables students to analyze the topic in depth by brainstorming each of the six perspectives and writing on these perspectives. Consequently, their vocabulary repertoire will be developed. Axelrod & Cooper mentions the main benefits of Cubing technique which are as follows:

1. It enables students to reach a deeper understanding of the multiple dimensions of a topic.
2. By using the cubing strategy, students make a review of the information previously taken and clarify the main ideas. Cubing is useful for the quick exploration of a writing topic.
3. It helps students construct an outline necessary for writing assignments (Axelrod & Cooper, 2008:35).
4. This technique can work individually or in groups to contemplate deeply and go through each side of the cube.

2.4 Vocabulary

Vocabulary mastery is the essential unit in learning and is of crucial importance to the typical learner and words are the basic building blocks in teaching and learning a foreign language (Coady& Huckin, 1997: 5; Kweldju, 2005:62). Ur (1996:60) defines vocabulary as a single word or a combination of words to express a single idea taught in a certain language. Developing learners' proficiency to use language skills is highly related to vocabulary acquired as a new item (Karatay, 2004: 21).

2.4. 1 The Importance of Teaching Vocabulary

The importance of vocabulary mastering for creating comprehensible communication is discussed in Rivers in Nunan (1991: 117). Students' knowledge of the extensive vocabulary enables them to use the structures and functions for successful language

use. According to McCarthy (1990: iii), L2 communication just cannot happen in any meaningful way without words to represent a larger variety of meaning, no matter how well the students learn grammar, no matter how skillfully the sounds of L2 are mastered.

2.4. 2 Dictionary Cube

In this study, Dictionary Cube as a strategy for teaching students vocabulary is used as presented by the "Florida Center for Reading Research" (2007). According to this strategy, the learners look for vocabulary items and check the meanings and information related to them by using the dictionary. And they learn vocabulary by making a discussion about words and answering related questions written on the six sides of the cube called the dictionary cube. The questions are constructed in the light of the dictionary information as follows:

developing reading and writing are as follows:

The teacher prepares the dictionary cube by writing these questions on its six sides as shown in figure 2. Students discuss the meaning of the given words by answering dictionary-related questions. The teacher puts the dictionary cube near the stack of word cards and each student uses his dictionary as shown in figure 3. The teacher selects two students to take turns, the first one selects and reads a word card aloud. The second one reads the question in the dictionary cube and answers it according to the information in the dictionary. Both of them check the meaning of a word in the dictionary and the roles are reversed for accuracy. The activity will continue to discuss other target words with peer evaluation. They write answers, find out the meaning of other words using other references, and make new cubes with new questions.
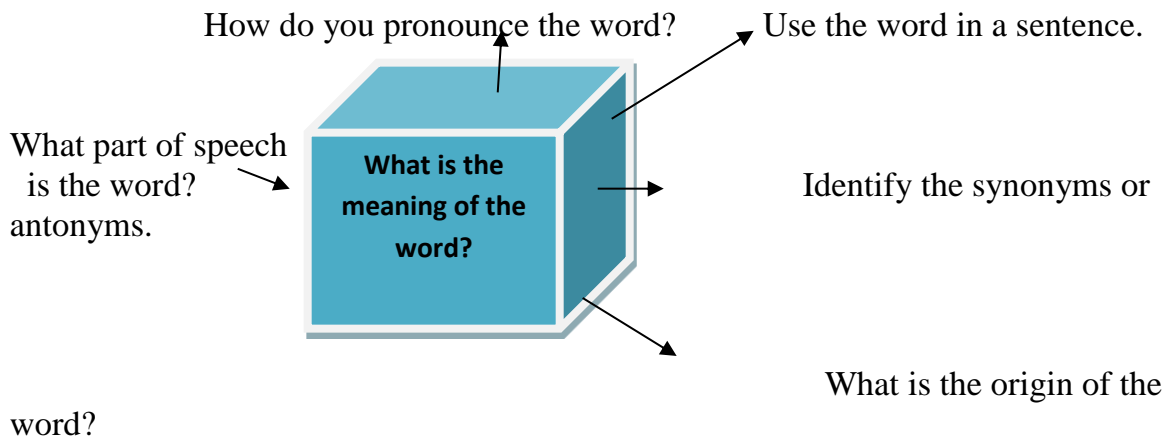
How do you pronounce the word?   Use the word in a sentence.

What part of speech is the word? antonyms.

What is the meaning of the word?

Identify the synonyms or

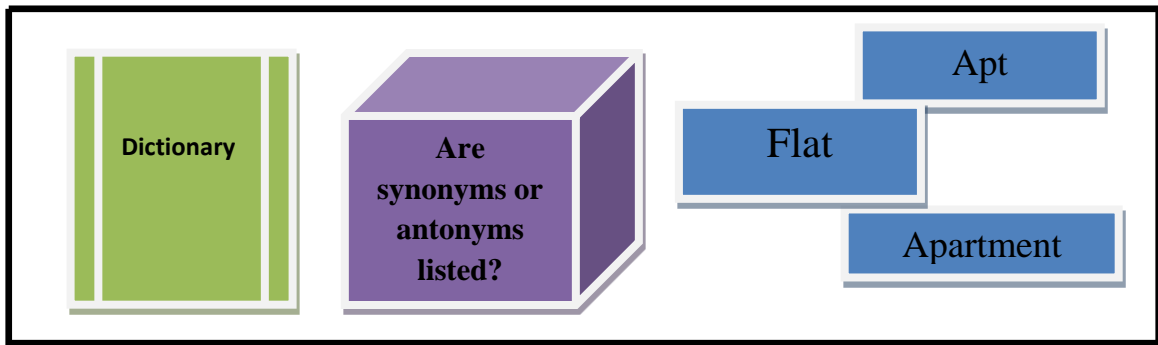What is the origin of the word?

Figure 2: The Dictionary Cube

Figure 3: The Elements of the Cubing Strategy for Teaching Vocabulary

2.5 Meta-cognition

As a multifaceted process, meta-cognition is a "cognition about cognition" or "thinking about thinking" (Shamir, et al., 2009: 47). Meta-cognitive strategies include planning, focusing, and monitoring that are used to consciously govern and control the learning process (Rahimirad, 2014: 1487). And Flavell (1987) divided meta-cognition into two interrelated areas: 1) meta-cognitive knowledge and 2) meta-cognitive regulation (Stephanou&Mpiontini,2017: 1942). Meta-cognition is an ongoing process in which reflection and action are interrelated. Basically, meta-cognition is narrowed to three ongoing stages namely pre-planning, self-reflection, and post-planning or adjustments (Nilson, 2013: 9). In a similar vein, meta-cognitive knowledge means the person's awareness of his thinking which leads to the management of his own thinking process and thinking strategies (Jaleel, 2016: 166). As an important component, meta-cognition consists of several skills which are of great importance to education such as"(1) reflective judgment, (2) critical thinking, (3) decision making, and (4) problem solving" (Dawson, 2008:3).

And there are three main processes in meta-cognitive strategies identified by researchers in second and foreign languages, which are as follows:

1.Planning: It occurs before engaging in a problem and it aims at organizing

2.the upcoming processes by thinking about the task at hand and reflecting on the effectiveness of past strategies and putting the proposed plan into action. In post-planning, necessary revisions are made which lead to certain modifications and new plans (Nilson, 2013: 9; Farahian, 2015: 40).

3.Monitoring and problem-solving: It involves the learners' awareness of their learning process with making necessary adjustments to a certain approach or strategies employed.

4.Evaluation: In this process, learners assess the effectiveness of their learning results and the techniques they employed in the learning situation (Farahian, 2015: 40).

5.2.5. 1 The importance of Meta-cognition

Recently, meta-cognition is considered to be one of three basic learning principles that should have a distinctive area in the curriculum because of its contribution to the establishment of smart teaching (Wang, et al., 1990: 37). Furthermore, meta-cognitive skills should be enhanced in the learning/teaching situation and students should be trained on the active use of these skills such as: knowing memory limits, self-monitoring, modification, skimming, rehearsing, and self-test (Jaleel, 2016:166). Meta-cognition plays an important role in achieving meaningful learning in which learners should learn meta-cognitive activities and strategies. Similarly, teachers have to be aware of meta-cognitive strategies and activities to teach their students better (Dhyani, 2018:57).

2.6 Previous Studies

Chalish investigates whether cubing technique effective in teaching narrative texts and improving students' achievement. The sample was 42 eleven-grade students. Action Research with its two cycles was applied to collect data and each cycle has three meetings, each of which has four stages : "planning, action, observation, and reflection". The qualitative data revealed the students' interest in using cubing technique and the application of cubing technique resulted in an improvement in the achievement test of writing narrative texts.

Siregar's study (2016) investigates how Cubing strategy improves students' writing skills with a focus on descriptive texts. Pretest posttest design and quantitative approach are used. The sample was taken randomly from the 8th- grade students of SMP Baitul Azis Medan. After using t-test, a significant difference is exited in the experimental group, and it is concluded that Students can improve their ability to produce descriptive writings by using the cubing approach.

The goal of Iskandar's research is to determine how the Cubing approach improves eighth-grade students' writing skills, with a focus on descriptive writing achievement. The sample of 62 students was selected by using purposive sampling with a quasi-experimental design. And a significant difference is discovered in the experimental group, after doing a T-test analysis of the data, which is attributable to the Cubing Strategy.

3.Methodology

The study's hypotheses were tested using a quasi-experimental design.

3.1 Research Design

A quasi-experimental design is used in which two classes were chosen to investigate the effect of the independent variables (cubing technique as a teaching method and conventional teaching method) on the dependent ones (composition writing, vocabulary, and meta-cognitive awareness of writing strategies), the same test and questionnaire are conducted on the groups (see Table 1). The traditional method is used for teaching the control group in which the compositions and lists of words are given by the teacher to be memorized by students. Whereas, the experimental group is instructed using the cubing technique in which many cubes are

made on various topics and vocabularies, to enhance their skills in writing different texts and employ appropriate vocabularies.

(1) The Design of the Research

Groups	(Pre-test) Dependent Variables	Independent Variables	(Post-test)Dependent Variables
Experimental	Composition Writing &Vocabulary test Meta-cognitive Awareness Questionnaire	Cubing technique	Composition writing &Vocabulary Test Meta-cognitive Awareness Questionnaire
Control		____	

3.2 The Sample

The sample was chosen from the whole population of (77) fifth-grade students at Al-Anbar secondary school (see Table 2). After excluding the repeaters, (64) students have been chosen from two classes and their age levels ranged from 17 to 19. The experimental group is from Section (A) and the control group from section (B).

(2): The sample Distribution

Group	Section	Number of Students	Number of Excluded Students	Number of Students after Exclusion
Experimental	A	38	6	32
Control	B	39	7	32
Total		77	13	64

3.3 Equivalence

By calculating the months of the students' ages, Table 3 illustrates the equivalence of samples in the research groups. And Daniel's intelligence test (1986) which contains 45 items is administrated to calculate the intelligence level of both groups. After that, The researcher developed and verified a multiple-choice test with (20) items and administrated it to the study groups to find out their previous knowledge. Consequently, many variables have been controlled for both groups including

(age, intelligence, and previous knowledge). T-test shows that the differences are not significant.

(3): "Means, Variance, and T -Value of the Three Variables"

Groups / Variables	Experimental 32 students			Control 32 students			T- Values		Sig.
	Mean	Standard deviation	Variance	Mean	Standard deviation	Variance	Tabl-ed	Com-puted	At 0.05Level
Age	195.64	4.31	18.576	194.14	4.08	16.646	2.00	1.41	Not significant
Intelligence	33.46	3.94	15.52	32.5	3.66	13.39	df 62	0.99	Not Significant
Previous Knowledge	11.41	2.76	7.62	12.22	2.98	8.88		1.11	Not significant

3.4   Instruments for Collecting Data

For collecting data, the following instruments are used:

3.4. 1 Composition Writing & Vocabulary Test

As a pre- and post-test, the Composition Writing & Vocabulary Test was given to Iraqi students to assess how well they performed in writing compositions and utilizing vocabulary. It also served as a way to compare the effect of adopting the cubing technique with that of the traditional method. The test falls into two sections including composition writing (2 test questions), and vocabulary items (10 test questions) (see Appendix 1). The topics for the composition writing test have been selected (Section A). After consulting specialists in the field and drawing on the relevant literature, the researcher has designed a composition scoring scheme (see Appendix 2). There are five criteria in the analytical scoring scheme to provide more diagnostic information about the students' writing abilities. And each one is given 4 scores.

The score on the first part of the test (Section A) is distributed on five dimensions: composing, style, sentence formation, language usage, and mechanics. Each question in Section A is given 20 scores. Section B contains a vocabulary test which is consisted of ten questions (see Appendix 1). The total score of the entire test is (50).

3.4.1.1 Composition Writing & Vocabulary Test Face Validity

A Composition Writing & Vocabulary Test has been examined by some experts at Al-Anbar University to ensure its face validity for measuring the performance of the students. It is found to be 80% percentage of agreement. Then. the test clarity has been

examined by administrating the test to (30) students in Al-Zawraa school. As a result, there is no serious ambiguity in the test's instructions and items.

After administrating the test to (100) students chosen from the 5th grade in Al-Eizdihar secondary school, the difficulty coefficient and the discrimination have been calculated. The difficulty coefficient values varied from (0.23) to (0.73), while the values of the test component's discriminating powers ranged from (0.31) to (0.58). All the items of the test are judged acceptable according to Ebel (1972:397).

3.4.1.2 Reliability of the Composition Writing & Vocabulary Test

Reliability is ensured by administrating the test to (50) EFL secondary students in Al- Ezdihar secondary school in Ramadi. The internal consistency has been calculated by Alpha Cronbach Formula among the (10) components in the scoring scheme of the test (each type of writing, descriptive or narrative, with five components). The reliability coefficient is found to be 0.85. The Pearson Correlation formula is also used to find out interscorers reliability. After scoring the students' answers by two trained scorers, the reliability coefficient is found to be 0.90.

3.4.2 Meta-cognitive Awareness of Writing Strategies Questionnaire

A 23-item questionnaire is used to measure students' meta-cognitive writing strategies. It falls into three major fields namely

(planning, monitoring, and evaluating) (see Appendix 5). A Likert scale is ranged from one to six). It was developed by Zhang& Qin (2018).

3.4.2.1 Face Validity of the Meta-cognitive Awareness Questionnaire

A questionnaire is judged to be suitable by some experts according to the percentage of agreement of their' views, i.e. 74%.

3.4.2.2 Pilot Administration of the Meta-cognitive Questionnaire

50 students have been selected randomly to answer the questionnaire items to examine their clarity. It is found that the questionnaire's items are clear and it needs 20 minutes to answer all items. To assess the questionnaire items' ability to discriminate across groups, a pilot sample of (120) students was employed. The calculated t-value varies from 4.211 to 8.320, and is greater than the tabular t-value (1.98). A difference between the two groups is therefore significant at 0.05 level of significance and under (118) degrees of freedom.

3.4.2.3 Reliability   of the Meta-cognitive Awareness Questionnaire

A pilot sample of (50) students has been selected to obtain the Alpha- Cronbach reliability coefficient. It is found to be (0.89). Consequently, the items were at the acceptable consistency of reliability.

3.5 Procedures

The textbook topics are classified by the researcher. It is found that there are two kinds of topics (descriptive and narrative). Then, the researcher reviews some earlier study on the usage of cubing as a pre-writing technique. The tests were designed after the samples had been determined. The study instruments' reliability and validity were confirmed. After that, the pre-tests in composition writing and vocabulary were administrated to the students in both groups to measure their level of writing skills

and vocabulary. Also, they answered the questionnaire items to measure their meta-cognitive awareness of writing strategies. After that, 24 thirty-minute study sessions were given to the students in both groups, two sessions each week. In the experimental group, the Cubing technique was applied to teach vocabulary and composition writing and the conventional method of teaching was used in the control group. After a week, a post-test of the study instruments was conducted to see how the cubing strategy affected the students' performance in composition writing, vocabulary, and metacognitive awareness. Finally, the results were analyzed to verify the study hypotheses.

4. Finding and Discussion

4.1 The Verification of the First Hypothesis

   To examine the first hypothesis, the composition writing test mean scores of both groups have been compared. According to the findings, the experimental group's mean score (7.218) is greater than the control group's mean score (4.594). To determine the significance of the apparent difference between the mean scores of the two groups, the t-test procedure for two independent samples was next applied. The calculated t-value, which is shown in Table 4 and is higher than the tabular t-value, shows a significant difference between the two groups at the 0.05 level of significance and under 62 degrees of freedom. The tabular t-value, which is only (2), is lower than the calculated t-value, which is (4.071). The outcome demonstrates that the experimental group outperforms the control one in the composition writing. Consequently, the first hypothesis " The post- composition writing test results show no statistically significant difference between the two groups' mean scores due to the teaching technique (cubing vs. conventional)." is rejected.

   This outcome is in line with that of Siregar (2016:8), who found that the Cubing method improved the experimental group's capacity to write descriptive text. In a similar line, the narrative writing of the experimental group showed a considerable difference, according to Chalish (2013:1). And
the results of Salha, et al. (1917: 1728) are similar to the present study in which a statistically significant difference is found in students' achievement test in Mathematics due to the teaching method (cubing strategy).

 (4): "Means, Standard Deviations, and T -Value of the Post Composition Writing Test"

Groups	No.	Mean	Std.	Variance	df	T Value*		Sig, at 0.05 Level
						Computed	Tabulated	
Exp. G	32	7.218	2.268	5.144	62	4.071	2	Sig.
CG.	32	4.594	2.781	7.734				

After that, the effect size is calculated. Rosenthal (1994:231) defines it as an estimation of the strength of the correlation between variables based on a sample. The effect size of cubing technique on the composition writing performance between the two groups is calculated by two statistical measures (Cohen's d and Eta squared µ²). Cohen entered three different numbers for the index: "0.2 small, 0.5 medium, and 0.8 large" (1988: 25), and the d value obtained (0.94) is large according to Cohen's Relation Power Index. According to Eta squared µ² values identified in Table 5, the value obtained (0.21) is large and strong (Al-Mnazil& Al-Atom, 2010; Affana, 2016: 196). Thus, the size of the cubing technique's effect on the students' performance in the experimental group is large.

(5): .The Relation Power Index for Each Measure

Statistical Measures Used	.The Effect Size		
	Small	.Medium	Large
d	0.2	0.5	0.8
Eta squared µ²	0.01	0.06	0.014

From this hypothesis, two hypotheses have been derived, they are stated as follows:

1."There is no statistically significant difference between the mean scores of the experimental group, which is taught by the cubing teaching technique and those of the control group, which is taught conventionally in the post-test of the descriptive writing". Concerning this hypothesis, when comparing the high value of the calculated t (3.67) to the low value of the tabulated t (2), it is shown that there is a considerable difference between the two groups (see Table 6). This outcome demonstrates how the cubing strategy improved students' post-descriptive writing test performance.

(6): "Mean, Standard Deviations, and T –Value of the Post Descriptive Writing Test"

Groups	No.	Mean	Std.	Variance	df	T Value*		Sig, at 0.05 Level
						Computed	Table Value	
Exp. G	32	17	3.125	9.766				
CG.	32	13.28	4.698	22.07	62	3.67	2	Sig.

Furthermore, the effect size of cubing technique on the descriptive writing is calculated by the statistical measure Cohen's d, and the value of d in this study (0.79) is large. According to Eta squared µ² as shown in table 5, the value obtained (0.178) is large and strong and shows the large effect of the cubing technique on the students' performance in the experimental group.

2.A second hypothesis has been also derived from the first hypothesis which was formulated as "There is no statistically significant difference between the mean scores of the experimental group, which is taught by the cubing teaching

technique and those of the control group, which is taught conventionally in the post-test of the narrative writing "

The t-test formula was used to test this derived hypothesis, and the resulting t-value (2.857) is greater than the tabular one (2). When the two groups are compared, Table 7 reveals a significant difference favoring the experimental group, which performed better on the post-narrative writing test than the control group.

(7): "Means, Standard Deviations, and T -Value of the Post Narrative Writing Test"

Groups	No.	Mean	Std.	Variance	df	T Value*		Sig.at 0.05 Level
						Computed	Tabulated	
Exp. G	32	12.5	4.211	17.73	62	2.857	2	Sig.
CG.	32	8.58	6.374	40.63				

After that, the size of the cubing technique's effect on narrative composition is quantified using Cohen's d. The value of d in this study (0.61), when compared to Cohen's values, is medium. Eta squared 2 is also employed, and the obtained value (0.12), which is large and strong as shown in Table 5.The outcomes show that the cubing strategy had a significant impact on the experimental group's post-narrative writing test performance.

4.2 The Verification of the Second Hypothesis

The high calculated t-value (2.852) demonstrates a substantial difference in the mean post-test scores of the study groups in comparison to the tabulated t-value (2) (see Table 8). In the vocabulary test, the experimental group outperforms the control group. Considering the results provided below, the second hypothesis " The post vocabulary test results show no statistically significant difference between the two groups' mean scores due to the teaching technique (cubing vs. conventional)." is also rejected.

(8): "Means, Standard Deviations, and T -Value of the Vocabulary Test"

Groups	No.	Mean	Std.	Variance	df	T Value*		Sig, at 0.05 Level
						Computed	Table Value	
Exp. G	32	29.5	6.228	38.788				
CG.	32	23.06	10.922	119.29	62	2.852	2	Sig.

Then, the effect size of cubing technique on (vocabulary mastery) is also computed by Cohen's d. The value of d (0.59) is Medium according to the different values of Cohen. Moreover, The obtained value (0.11) is large according to Eta squared μ^2. And the cubing technique has a large effect on the students' mastery of vocabulary in the experimental group.

4.3 The Verification of the Third Hypothesis

To test the third hypothesis, Table 9 shows the mean scores on the total test of both groups. After calculating the computed t-value (3.22) and the tabulated t-value (2), the post-test total score of the experimental group differed significantly from the control group, as indicated by the high calculated t-value. Accordingly, the third hypothesis is rejected " The total score on the post-test shows no statistically significant difference between the two groups' mean scores due to the teaching technique (cubing vs. conventional) "

(9): "Means, Standard Deviations, and T -Value of the Total Score on the Post-Test"

Groups	No.	Mean	Std.	Variance	df	T Value* Computed	Tabulated	Sig, at 0.05 Level
Exp. G	32	36.719	8.421	70.91	62	3.22	2	Sig.
CG.	32	27.567	13.410	179.828				

Cohen's d additionally determines the size of the cubing technique's impact on the pupils' overall post-test score. The value of d (0.68) is Medium. For finding out the relation power index between the two groups, Eta squared μ^2 has been used. The Eta squared μ^2 value (0.14) is large as shown in table 5. This indicates that the cubing technique has a large effect size on the experimental group's overall score.

4.4 The Verification of the Fourth Hypothesis

To verify the fourth hypothesis, Table 10 displays the mean results from the post-administration of the metacognitive questionnaire for both groups, and the computed t (2.203) is higher than the tabulated t (2). The considerable difference illustrates the experimental group's high level of metacognitive awareness. Therefore, the fourth hypothesis "The post-administration of the meta-cognitive awareness questionnaire shows no statistically significant difference between the two groups' mean scores due to the teaching technique (cubing vs. conventional). " is also rejected.

(10): "Means, Standard Deviations, and T -Value of the Total Score on the Post – Administration of the Meta-cognitive Questionnaire"

Groups	No.	Mean	Std.	Variance	df	T Value*		Sig, at 0.05 Level
						Computed	Tabulated	
Exp. G	32	65.156	26.416	697.805	62	2.203	2	Sig.
CG.	32	50.22	26.75	715.563				

Moreover, the effect size of cubing technique on the total score of the post - administration of the meta-cognitive questionnaire is also calculated by Cohen's d. The value of d (0.56) is Medium. For finding out the relation power index between the two groups, Eta squared μ² has been used. The Eta squared μ² value (0.07) is large as illustrated in Table 5. Consequently, the cubing technique has a medium effect on the total score of the meta-cognitive awareness questionnaire of the experimental group.

4.5 The Verification of the Fifth Hypothesis

To test this hypothesis, the scores and weighted means of the 23 items in the post-test are computed.

(11) Scores and Weighted Means of the Students' Responses on the Meta-cognitive Awareness Questionnaire Items

Field	Items	Experimental		Control	
		Score	Weighted Mean	Score	Weighted Mean
Planning	1	132	4.125	117	3.66
	2	112	3.81	112	3.5
	3	82	2.56	45	1.41
	4	62	1.94	27	0.84
	5	106	3.31	100	3.125
	6	112	3.48	40	1.25
	7	34	1.06	53	1.66
Monitoring	8	129	4.03	107	3.34
	9	115	3.59	105	3.28
	10	85	2.66	80	2.5
	11	70	2.19	75	2.34
	12	105	3.28	90	2.81
	13	55	1.72	37	1.15
	14	130	4.06	63	1.97

	Items	Exp. Score	Exp. W.Mean	Control Score	Control W.Mean
	15	67	2.09	82	2.56
	16	74	2.31	65	2.03
	17	78	2.44	71	2.22
	18	99	3.09	25	0.78
	19	58	1.81	24	0.75
Evaluating	20	125	3.91	95	2.97
	21	95	2.97	87	2.72
	22	71	2.22	50	1.56
	23	79	2.47	57	1.78
	Total	2085		1607	
	Mean	91.43	2.83	69.869	2.18
	Standard Deviation	27.01	0.85	28.43	0.889

The means and the weighted means of the students' responses to the questionnaire questions for the two groups are displayed in Table 11. The mean (91.43), standard deviation (27.01), and weighted mean (2.83) of the experimental group are greater than the control group's values including the mean (69.869), the standard deviation (28.43), and the weighted mean (2.18). Two items (1 and 8) gain the highest weighted means in both groups, while item 14 "I tried to think about whether I was using the correct grammar (e.g. tenses, prepositions, etc.) " shows a clear difference in favour of the students taught by the cubing technique in the experimental group. Consequently, the outcomes demonstrate how well the cubing approach works at raising pupils' meta-cognitive awareness of writing techniques. To determine the significant differences in each field of the questionnaire, the weighted mean and the relative weight for each item in the three major fields are also calculated.

(12) Scores, Weighted Means, and Relative Weights of the Students' Responses on the Meta-cognitive Awareness Questionnaire " Planning"

Items	Experimental			Control		
	Score	Weighted Mean	Relative Weight	Score	Weighted Mean	Relative Weight
1	132	4.125	68.67%	177	3.66	61%
2	112	3.81	63.5%	112	3.5	58.33%
3	82	2.56	42.67%	45	1.41	23.5%
4	62	1.94	32.33%	27	0.84	14%
5	106	3.31	55.16%	100	3.125	52.08%
6	112	3.48	58%	40	1.25	20.8%3

7	34	1.06	17.67%	53	1.66	67.27%
Total	650	19.835		494	15.445	
Mean	92.86	2.899	48.317%	70.57	2.21	36.33%
Standard Deviation	32.63	1.09		34.92	1.091	

The averages, weighted means, and relative weights of the experimental group's scores (92.86, 2.899, 48.317%) on the first section of the questionnaire (planning) are greater than those of the control group's (70.57, 2.21, and 36.33%). Due to the employment of the cubing technique in this comparison, a substantial difference is detected in the experimental group. Table 13 shows the significant differences in the second field (Monitoring) of the meta-cognitive awareness questionnaire.

(13) Scores, Weighted Means, and Relative Weights of the Students' Responses on the Meta-cognitive Awareness Questionnaire " Monitoring"

Items	Experimental			Control		
	Score	Weighted Mean	Relative Weight	Score	Weighted Mean	Relative Weight
8	129	4,03	67.16%	107	3.34	55.67%
9	115	3.59	59.83%	105	3.28	45.67%
10	85	2.66	44.33%	80	2.5	41.67%
11	70	2.19	36.5%	75	2.34	39%
12	105	3.28	45.67%	90	2.81	46.33%
13	55	1.72	28.67%	37	1.15	19.16%
14	130	4.06	67.67%	63	1.97	32.83%
15	67	2.09	34.83%	82	2.56	42.67%
16	74	2.31	55.16%	65	2.03	33.83
17	78	2.44	40.67%	71	2.22	37%
18	99	3.09	51.5%	25	0.78	13%

19	58	1.81	30.16%	24	0.75	12.5%
Total	1065	34.27		824	25.74	
Mean	88.75	2.77	46.1%	68.67	2.144	35.73%
Standard Deviation	25.22	0.79		26.67	0.834	

In the experimental group, the mean (88.75), weighted mean (2.77), and relative weight (46.16%) of students' scores are higher than the values of the control group (68.67, 2.144, and 35.73%).

Finally, Table 14 shows the significant differences in the third field (Evaluating) of the meta-cognitive awareness questionnaire. As a result, the values of the mean (92.5), weighted mean (2.892), and relative weight (48. 2%) are higher than the values of the control group (72.25, 2.26, and 37.66%).

(14) Scores, Weighted Means, and Relative Weights of the Students' Responses on the Meta-cognitive Awareness Questionnaire " Evaluating"

Items	Experimental			Control		
	Score	Weighted Mean	Relative Weight	Score	Weighted Mean	Relative Weight
20	125	3.91	65.16%	95	2.97	49.5%
21	95	2.97	49.5%	87	2.72	45.33%
22	71	2.22	37%	50	1.56	26%
23	79	2.47	41.16%	57	1.78	29.66%
Total	370	11.57		289	9.03	
Mean	92.5	2.892	48. 2%	72.25	2.26	37.66%
Standard Deviation	20.66	0.65		19.12	0.599	

In the light of the empirical evidence of this study stated earlier, some conclusions have been formulated as follows:

The significant differences in the experimental group's performance could be attributed to many factors as explained below:

1. Cubing technique improves the student's performance on composition writing and vocabulary test of the 5th- grade students in English because it activates their prior knowledge and helps them think critically and creatively of different angles related to the students' writing skills in solving the problems.

2.Cubing technique was more learner-oriented and productive in which students spent time preparing cubes and checking dictionaries and texts, and taking turns.

3.By using the cubing technique, students' individual differences are taken into account by engaging all students individually or in group work and making cubes differentiated by readiness, interest, or learning style.

4.Cubing technique helps students to be familiar with the new English words because learners were directly involved by reviewing the words many times, making associations among those words, and using them in meaningful contexts. Visual and verbal codes work together when recalling information as reported by Paivio (1986: 53). They work in groups to practice words as well as discover words as stated by Nation (1997: 24).

5.The Cubing technique enhances students' self-reflection, self-regulation, and self-test which significantly contribute to the improvement of students' meta-cognitive awareness of writing strategies such as planning, monitoring, and evaluating. Using cubing technique becomes a viable choice because of its vital effect on developing thinking skills in general and meta-cognitive thinking in particular.

6.Using Cubing technique in teaching writing develops students' understanding of various kinds of writing materials, the generic structure of descriptive and narrative texts, and the linguistic features of each kind. It can develop students' ideas in writing different kinds of texts.

4.6 Suggestions

Some suggestions should be noticed, they are as follows:

1.Further research is highly needed to overcome difficulties especially in writing compositions (descriptive and narrative) as an obligatory topic in teaching English in preparatory schools.

2.The use of cubing technique should be an important part of the training courses for English teachers and the teacher education syllabus.

3.Conducting new research to study the effectiveness of the cubing strategy in writing argumentative texts and critical thinking.

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