USING DIVERGENT AND CONVERGENT QUESTIONS IN DEVELOPING CREATIVE THINKING OF IRAQI EFL PREPARATORY STUDENTS' PERFORMANCE IN WRITING SKILL

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Abstract- This study aimed at investigating whether or not there was a significant difference in writing achievement between the students who were taught by using divergent and convergent Questions technique and that of those who were not. The experimental method was conducted toward the fourth-grade students in Asmaa Bent Amaise High School in Najaf city in which sixty-five students were involved as the sample which was divided into two groups. In collecting the data, a written test was administered. Before giving the test, the test was tried out to non-sample students to know its validity and reliability. Then, the data were analyzed using a t-test. Building upon the results of the study, it has been figured out that there is a significant difference between the experimental and the control groups. Concerning the post-test, the mean score of the experimental group is (38.00), whereas that of the control group is (22.75). This signifies that the students' achievement of the experimental group is significantly better than that of the control group.

Keywords: convergent and divergent questions, writing skill

I   INTRODUCTION

The Problem and Its Significance

Writing is accepted universally as the medium by which individuals interact in time and space, transmitting their culture and exchanging it through generations   [1]" Writing is a basic communication skill and a unique asset in the process of learning a second language".

Major language skill is Writing, was once thought to be the concern of educated individuals; however, it is now becoming a required communication tool for all [2] and compared to the past, the position of writing has become more remarkable due to the widespread use of electronic and wireless communications in daily life [3]. Studies have stated that writing in the target language can be difficult and demanding for foreign language learners[4], writing in the target language can be demanding and challenging; they generally produce less fluent sentences and experience revision difficulties [5].

This challenge, however, is not only rooted in their linguistic knowledge and gaining mastery over multiple output dimensions) [6].

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Writing is perhaps the most challenging ability for second language learners and this difficulty cannot be attributed solely to the development and organizing of new ideas, Yet applied those concepts to suitable contexts [7]. Another source of difficulty lies in the fact that writing doesn't just happen in a vacuum; rather, it is always expressed in a "rhetorical situation–a complex web of relationships between the elements of writing"

Writing goes beyond simply building an endless array of sentences or providing a precise description of fact and in turn exchanging meaning with individual readers ' views [8].

Teaching writing can turn into a probably tedious and time-consuming process, as many aspects require adequate attention, including material, organization, creation, rhetoric, etc. [9].

When it comes to teaching writing to foreign language learners and incorporating grammar and spelling into writing classes, the challenge becomes even more thorny [10].

Scholars have sought to dig into this complex due to the complexity of writing skills and the variety of variables that play a pivotal role in the writing process; Nonetheless important skills from various perspectives [11].

II   AIMS OF THE STUDY

The present study aims at: Investigating The Effect of Using Divergent and Convergent Questions on Improving Creative Thinking of Iraqi EFL Preparatory Students' Performance in Writing Skills.

Hypothesis

It is hypothesized: that there are no statistically significant differences between the mean experimental group scores taught by the use of divergent and convergent question techniques and the control group taught by the conventional method.

Limits

The present study is restricted to 1- Use of divergent and convergent questions in writing skills for teaching. 2-Iraqi EFL preparatory students, fourth grade 3-The suggested textbook for fourth graduate students in English for Iraq. 4- The 2019-2020 academic year

Procedures**.**

Procedures

The following protocols will be followed to achieve the goal and test the results of the current study:

1. Select a group of EFL students from the preparatory schools in fourth grade.

2. Divide the chosen student sample into two groups (an experimental and control group);

3. Choosing a good experimental design,

4. Creating a pretest and posttest expertise in writing, and maintaining its validity and reliability,

5. Administering the students pretest to determine the students ' level of writing skills,

6. Teaching writing skills by divergent and convergent questions to the members of the experimental group.

7. Conducting the posttest to the subjects of both classes to determine whether or not the suggested technique has any effect on the subjects,

8. Analyzing the data collected to get results, and then using the correct statistical tools.

.9Interpreting the results obtained to provide findings, recommendations, and suggestions for further study.

III A. Theoretical Background

For many decades, human learning and the processes it entails have attracted the attention of scholars and numerous accounts have been put forward to capture various aspects of such learning. The modern learning tradition, however, started with behaviourists who claimed that learning is characterized by the outward expression of new behaviours. They based on reported activities alone. We believed in science on a biological basis. Nonetheless, this was criticized for failing to take into account mechanisms happening in the mind that cannot be observed. This has resulted in cognitivist. Mental processes such as reasoning, memory, information and problem-solving need to be discussed" [10] (Cognitivism is a theoretical framework for understanding the mind introduced in the 1950s.

Cognitivism is the cognitive philosophy that emphasizes human cognition or intelligence. The basic principles of cognitivism include how we perceive and acquire knowledge. Cultural differences influence how we interpret our accomplishments in education and language development.
They stress active mental function "[11]. Based on it, thoughts and imagination spread after suggesting cognitivism. Therefore more than ever the ideas such as creative thinking and critical thinking were reflected. Students preferred to use their intelligence and creativity in schooling after many years, rather than in rote learning.

Divergent and convergent thought skills are both essential innovative and critical thinking facets [12].

Convergent questions relate to closed questions used to test the assimilation of basic knowledge by students and information comprehension. On the other hand, divergent questions are open questions that have more opportunity to engage students in the process of a higher-order thought [13]. Below are the brief explanations for each category [14].

• *Step 1- Convergent Low Order:*
Questions require a clear reminder. The responses of students are mostly derived from memorization. Such issues fall under Bloom's taxonomy of knowledge level [14].

Level 2-Convergent High Order:
These questions include the students in creative thought. The teacher guides students not only to learn the details but also to demonstrate their comprehension of the knowledge. High Order Divergent problems are associated with Bloom's taxonomy stages of understanding and implementation [14].

• *level 3-Low Order Divergent:*

Questions allow learners to analyze knowledge to uncover explanations or causes, draw conclusions or generalizations, or endorse views' [13]. In the taxonomy of Bloom, this category of questions would be in the level of Analysis [14].

•*Level 4— High Order Divergent:*

High order divergent questions include students in imaginative and assessment. Students are required to "make predictions, solve life-like problems, generate original correspondence, and evaluate ideas, facts, action, and esthetic expressions based on internal or external criteria" [13]. The high order divergent problems in Bloom's taxonomy belong to the stages of Synthesis and Analysis [14].

Each problem level has its pedagogical advantages. Level 1 and Level 2 are questions of lesser order while Level 3 and Level 4 are questions of a higher order.

IV METHODS

This section provides a description of the procedures used to achieve the study's objectives, beginning with selecting the population and samples, neutralizing all sample variables, developing the study's instruments and equipment, performing the experiment and analyzing the data and findings.

The Experimental Design

[15] point out that " an experimental research demands the selection of an appropriate experimental design to determine whether the obtained result will be valid and accurate or not," In this experimental design, two separate classes are randomly selected and a pre-test is performed before the implementation of the experimental and control treatments to assess whether the groups are identical to the dependent measure or variable before the procedure. After the treatment cycle, a post-test is administered. The researcher used two separate groups, assigning them to the experimental group (hereafter EG) and the control group (hereafter CG). All groups undergo the same pre-test, the outcome is then evaluated statistically to ensure that they are identical to the dependent variable. Independent variable (i.e. divergent and convergent query technique) determines the EG while the traditional method teaches CG. All groups are subjected to the post-test at the end of the study duration to assess the impact of using the independent variable on the output of the student in writing ability.

Population and Sample Selection

[4] states, " sampling is the process of obtaining information about an entire population by examining only a part of it" Asmaa Bent Alhusseinpreparatory school for girls in Al- Najaf city was selected. In this school, there were two sections, A and B. Section A consists of (33) students, and section B consists of (32) students. The total Group Pre-test Treatment Post-test. Randomly, section A is selected as the EG and section B as the CG ". "Three students from A and two from B were excluded from the experiment because they were repeaters. The

excluded subjects were kept in their classes during the period of the experiment. Thus, the final number of sample subjects is (65) students.

Equivalence of the Sample

To ensure the best sample equivalence, the researcher tried his best to monitor some of the variables that could influence the experiment's results. The participants of the two classes were equated with the following variables: the age of the students, the English performance of the subjects in the pre-test, and the English level of education of the parents and the success of the students in the mid-year exam.

V   EXTRANEOUS VARIABLES

Furthermore, the researcher checked the equivalence of the two test sets in some variables that are known to influence the course of the experiment, she also attempted to avoid the effect of some external variables during the experiment. Some of these variables are as follows, and how to manage them:

1- Similar laboratory incidents. No problems happened while the experiment was being carried out. Several students left school or have been transferred to another. The sample was selected deliberately and the two sets were equalized accordingly

2-The maturity factor: Since the length of the experiment has been standardized between the two research groups as well as the age of the students in the two groups so that all the growth that has occurred will be shared among all the students because they are on a level. Therefore, this aspect did not affect research

3-The effect of experimental procedures: the researcher focused on reducing the impact of experimental procedures which might affect the dependent variable during the experiment [16].

Instruction

The exact start of the experiment was on 5 March 2020. This finished on June 5, 2020, where it took two months to complete. The researcher himself instructed the subjects of both groups for technical reasons and to control the variables of the experiment .

The experimental group was taught using the methodology of divergent and convergent questions and the control group was taught using the recommended teaching method. Before that, the researcher prepared a lesson plan approved by a jury of methodology specialists.

Preparing the Material

The teaching materials used to experiment were represented by the -"English for Iraq"-syllabus and the content taught during the academic year's second semester (2019-2020) (Unit 5-Unit 8). The researcher set some behavioural targets that the test sample would assume. As for the lesson plans, a total of (30) lesson plans were written by the researcher for each test group based on the fourth preparatory grade book, "English for Iraq."

The Performance Test

A performance test is "a test in which the ability of candidates to perform particular tasks, usually associated with job or study requirements, is assessed" [17].

The performance test was developed by adopting the following steps:

1-The purpose of the study: the aim to build the test was to assess the readability of the students in the English language, based on the behavioural goals set out in the teachers ' guide.

2_Determination of test items: the researcher assessed the test items to be 25 test items and prepared a test scoring scheme.

3–The evaluation was based on the updated Bloom's Taxonomy of educational goals.

Pilot Test

The pilot study is described as an initial step before spending money and time on a particular study to evaluate the design and procedures [18].

On 13 February the pilot study was applied to 90 students randomly selected from Noor ALHussein -The Preparatory School to represent the sample of the pilot study.

Statistically, the data from the pilot study were analyzed to assess the power of discrimination and the level of difficulty of each object.

The results of the pilot study also showed the practicality of the test and the time needed to respond which ranges from 35 to 40 minutes.

Conducting the Test

The Pre-test Final Administration

On the 20th of February 2020, both experimental and control group students were pre-tested. This pre-test aims to compare the scores of the achievement of the students during the pre-test with those in the post-test. As a result, the researcher tested the study sample and scored it.

The Post-test

On 20 April 2020, students from both groups (the experimental and the control ones) were post-tested. In conducting the post-test, the same pre-test procedures were followed, namely scoring scheme, validity, pilot study, the problem with the item, discrimination against the item, and reliability. It is worth mentioning that a jury of fifteen linguistics and TEFL experts also saw the post-test.

VI RESULTS

At the end of the experiment and to realize the study's aim of using divergent and convergent question technique to improve the writing skill found in the book of the 4th preparatory student and testing its null hypothesis, the pre-test, and post-test data are analyzed statistically. [19][20]

It should be noted that this review is being conducted to assess whether there is any significant difference in pre-test and post-test between the two classes. The Experimental and Control Groups compared, Post-test scores [21][22].

The findings obtained from the post-test on both groups indicate that the mean scores of the post-test experimental and control groups are (38.00) and (22.75), successively, which means that the Writing Ability experimental group achievement is higher than that of the control group.

The T-test formula for two independent samples is used to show whether or not there is a significant difference between the two groups [21][24].

The consequence of applying this formula indicates that the post-test measured T-value is (5.422), whereas the T-value tabled is (2). This demonstrates that there is a significant difference between the two groups at (0.05) signifying level and below (63) freedom levels (see Table 1) [25] .

This also indicates that this study's null hypothesis, which notes that "there is no statistically significant difference between the experimental group's mean scores, which are taught Writing skill according to divergent and convergent questions technique and those of the conventionally taught control group," is rejected.

Table 1: T-Test Student Scores Statistics In The Post-Test. Analysis Of The Control Group's Pre-Test And Post-Test Scores

| Group | No | Mean | SD | DF | t-value | | Level of significance |
					CTV	TTV	
Experimental	33	38.00	13.75	63	5.422	2	0.05
Control	32	22.75	8.11				

As far as the control group is concerned, the mean pre-test scores are (23.125), while the post-test scores are (23.593). The one-sample T-test formula is used to determine whether or not there is any significant difference between the pre-and post-test scores. The result shows that the value of the computed T-is (20.712), while the value of the tabulated T is (2). This means they have a slight difference, i.e. the post-test is a bit higher than the pre-test (see Table 2).

Table 2: T-test Statistics of the Students ' Scores in the Control Group pre-test and post-test

| Test | No. | Mean | SD | DF | t-value | | Level of Significance |
					CTV	TTV	
Pre-test	32	23.125	9.061	62	20.712	2	0.05
Post-test	32	23.593	9.122				

Comparison of the Pre-test and Post-test Scores of the Experimental Group

The pre-test and post-test mean scores for the experimental group are found to be (21.515) and (38.000) successively. The one-sample T-test formula is used again to determine whether the difference between the pre-test and post-test scores is important or not. The determined T-test is (15.454), while the tabulated one is (2). It

signifies that at (0.05) level of significance and under (63) degrees of freedom the pre-test and post-test are significantly different. Namely, the experiment group's post-test is much better than the pre-test (see Table 3)

Table 3: T-test Statistics of the Students' Scores in the Pre-test and Post-test for the Experimental Group

Test	No.	Mean	SD	DF	t-value		Level of Significance
					CTV	TTV	
Pre-test	33	21.515	12.949	64	15.454	2	0.05
Post-test	33	38.000	13.756				

VII CONCLUSIONS

The study investigated why teachers used convergent and divergent questions. It was concluded that most teachers used convergent question types to summarize topics and reinforce and motivate students. On the other hand, divergent questions were used to encourage students to think, make judgments and draw inferences and develop multidimensional thinking, imagination, and various perspectives.

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