

# The Effectiveness Of Counterarguments Strategy On Developing Critical Thinking Skills In English Language For Secondary School Students

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## Abstract

The purpose of the research was to investigate the effectiveness of counterarguments strategy on developing critical thinking skills for Watson Glaser in English language. The research embraced a sample of 60 2<sup>nd</sup> year secondary school students in Egypt. That sample was randomly selected and was divided into two groups; an experimental group and a control group during the school year 2020 / 2021. A suggested checklist of the critical thinking skills was offered on a jury in English foreign language to determine the targeted critical thinking skills. The pre and post tests were designed and offered on the jury to approve them before applying on the two groups. The experiment lasted for three months of the school year. The research depended on materials such as teacher's guide. Then the research used the critical thinking tests and rubric such as the research instruments. The results revealed that there were statistically significant differences mean scores between the two groups; in favor for the experimental group. Thus, the research recommended that teachers should consider the importance of developing the critical thinking skills among 2<sup>nd</sup> year secondary schools students. Furthermore, the research recommended that teachers should pay due attention to students' books; textbook, workbook and e-book besides teacher's guide book. Eventually, the research recommended supplying teachers with counterarguments strategy procedures to assist them develop students' critical thinking skills. As well as including the procedures of counterarguments strategy in the teachers' manual to enhancing students' critical thinking skills.

**Keywords:** Counterarguments strategy, Critical Thinking skills.

## Introduction

According to the international care for teaching English language and learning the most of school subjects in English, the ministry of education in Egypt has been making great efforts to develop the four skills of English language "listening, reading, speaking and writing" in each stage depending on other skills that assist the language skills to develop and help students in their daily life. Thus, Egyptian

universities have always been providing workshops that need to qualify teachers in all fields of study, especially subjects are taught in English. Hence, there are many researches to develop skills that help four English skills to prepare for using by students and ease their usage for English language through different strategies.

According to (Egyptian teacher's guide 2022), 2<sup>nd</sup> year secondary school is an

indispensable grade to give students important experience and self-confidence to use the critical thinking skills both inside and outside the learning environment in their present and future life. Through critical thinking skills and tasks students have an opportunity to learn and use the English language skills. There is a concentration on creating a student for the modern world as future citizen so that he / she can deal with the international challenges effectively.

Kemertelidze & Giorgadze (2021), asserted that most linguists think that critical thinking skills is a sophisticated way employing enquiry strategies, constructing questions, and targeted responds to these questions. Not only does critical thinking reveal limited facts, but it also interprets these facts reasons and consequences. Moreover, critical thinking may be assigned as considering own individual's thinking, so it begins with sending data to mind and finishes with getting individual's point of view regarding these data.

Critical thinking skills are not one's innate trait. Some people can develop it as a consequent of exercising. People can think critically if they are imaginative, so creative and if they have large range of knowledge and data. Critical thinking is also challenging for creating counterarguments.

Consequently, the main function of critical thinking skills is to make people think effectively for a persuasive issue or topic through finding out the reasons, hypotheses and warrants behind a specific point of view. One of the most important qualities of critical thinking skills is to enable a person to create a claim with a perspective to assess the power of counters' arguments and assist realize how he / she got a specific stand during developing arguments.

Sternod & French (2016), reviewed the Watson–Glaser™ II Critical Thinking Appraisal (Zulmaulida & Dahlan, 2018) and stated that The Watson–Glaser II provided a

simplified model of critical thinking, including three sub-dimensions: recognize assumptions, evaluate arguments, and draw conclusions. They added developers of the Watson–Glaser II employed the theoretical framework (Glaser, 1937; Watson & Glaser, 1994) and emphasized Three scales (Interpretation, Dedication, and Inference) were supported by the empirical evidence.

Davies & Stevens, (2019), stated that critical thinking has two main skills; cognitive (Analysis, Evaluation, Inference, Self-Regulation) skills and dispositions (Suspend judgement, Open minded, Inquisitiveness, Fair Minded). Watson Glaser™ Critical Thinking Appraisal is the most common, settled and highly esteemed global tests. Moreover, Watson Glaser is convenient for testing mature students (from 16 years and above) and has been edited and enhanced more since it was launched from many years ago. The main function of Watson Glaser test is to measure the cognitive skills. In 2018, the use of Watson-Glaser tests were increased than 100,000 globally by educational associations, businesses and corporations, across all industrial fields, to estimate CT capability in students, occasional candidates and staff.

Suryadi & Fatimah (2021), pointed out the aspects of critical thinking skills have been put by Watson–Glaser that are indispensable for student success in education. Watson-Glaser has found and developed critical thinking skills, and his research has counted on motivation in mixing attitudes, information, and capabilities to create the fundamental critical thinking skills for students. Watson-Glaser's stages have examined how students think critically when they work out educational problems and have illustrated as follows:

- 1- Inference creating, basically the capability of students to differentiate between true or false conclusions from the information given.

- 2- Recognition of Assumptions, basically the capability of students to realize assumptions declarations provided orally or in writing.
- 3- Deduction, basically the capability of students to limit resolutions on conclusions that must keep track of the knowledge given.
- 4- Interpretation (Induction), basically the capability of students to think and take the decision if the evidence and got results in general.
- 5- Evaluation of arguments, basically the capability of students to give more accurate and related issues through particular questions of a given problem.

Duron et al., (2006), reported that in their studies when critical thinking skills were examined, students should possess critical thinking skills in educational environment in their classroom in order to have a charming educating experience. Not only was this pleasant experience useful for students, but also for teachers.

Buffington (2007), stated that critical thinking skills for students could be developed if teachers employ these skills in teaching and educating activities all the time in every stage of education that would later be benefit for their life experiences.

Basri & As' ari (2019), pointed out in their studies during investigating junior high school students critical thinking skills in working out mathematical problematic sums displayed the junior high school students critical thinking skills are weak in the sub-skills evaluation, analysis, and self-regulation.

Varenina et al., (2021), pointed out a requirement of enhancing active online educational subjects or programs that boost critical thinking as a key specialization of

higher education. The aim of the study is to investigate the selected educational methods and styles of students as forecasters of critical thinking development in online education. That study employed the 2011 version of the Watson- Glaser Critical Thinking Appraisal (W-GCTA) test, and a Critical Thinking Test (Level 1) developed by Nikita Nepryakhin (2021). An efficiently form for online subjects that boost critical thinking should consider different aspects that affect students' conception of subjects material, such as individual styles of education. To adjust the online education, students should have a balanced educational profile. This research displays a relation between chosen educational styles and levels of critical thinking, which should be thought when enhancing the online educational curriculum and online session preparations.

Also Liudmila Varenina (2021), measured the relationship between chosen educational styles and critical thinking, the research employed the latest version of the Watson-Glaser Critical Thinking Appraisal (W-GCTA) test, came out in 2011 (Assessment Day, 2021), along with a Critical Thinking Test (Level 1) or CTT-1, was enhanced by Nikita Nepryakhin (2021). W-GCTA is an oral capability test for estimating critical thinking. It evaluates a person's capability to analyze, interpret, and draw rational conclusions from written data. The test needs the implement of analytic reasoning skills and treats with five components of critical thinking: deduction, recognition of assumptions, inference, interpretation, and evaluation of arguments. CTT-1 was implemented for higher topicality. It recognizes the strengths and weaknesses of critical thinking across eight capabilities. These capabilities are Analysis & Synthesis (capability to shatter the data into pieces and mix the shattered pieces to make a novel whole); Interpretation (capability to determine terms and evaluate the strength of evidence); Logic (capability to set cause and effect); Evaluation (capability to recognize strengths

and weaknesses); Substantiation (capability to advocate an argument critically); Emotional self-control (capability to create decisions logically, without dependence on feelings and rushes); Problem-solving (capability to detect a strategy and select the best resolution); Creativity (capability to think out-of-the-box) (Nikita Nepryakhin's School of Critical Thinking, 2021).

Jo et al., (2021), stated that generating counterarguments is a major of several implements, such as legal decision making (Feteris et al., 2017). Moreover, several former studies have concentrated on generating counterarguments to the main conclusions of long arguments, usually motions. Furthermore, there is a purpose to show counterevidence to fixed sentences in an argument. This counterevidence may serve as essential building blocks for developing a larger counterargument and also allow for more interactive development of argumentation.

Many studies such as Stupple et al., (2017), Nakkaew (2018), Rahmah & Munir (2019), Athamneh & Ashraf (2020), have treated to affect students' critical thinking skills through counterarguments strategy confirmed that testing critical thinking skills through Watson Glaser test has been of great importance for English language methodologists teachers and students. Different approaches, strategy and activities have been used for impacting the critical thinking skills. Yet, these skills should have much more attention to obtain great progress in them during the 21<sup>st</sup> century. Watson Glaser's critical thinking tests should be adjusted to suit the students' requirements to support their critical thinking skills. In fact, both EFL teachers and students require a suitable deal of time to be spent on critical thinking skills. In fact, all the above-mentioned studies responded to the call of the researcher's requirement to provide more attention to critical thinking skills, so they confirmed the importance of the development critical thinking skills through using the counterarguments

strategy that the researcher proposed different recent methods, activities, tasks and techniques for developing and evaluating on the critical thinking skills. From the studies, displayed above, the researcher of the present study benefited much in designing its treatment material, strategies, activities and evaluation instruments and tools for developing the EFL critical thinking skills of the participants of the study (the EFL teachers) in general. In addition to certain benefits were also obtained from displaying each study in particular, as was shown before.

Consequently, this research investigates the effectiveness of counterarguments strategy on critical thinking skills to assist student develop the main four English language skills. It uses the term "counterarguments strategy" to characterize the act of warranting the student-side. Counterarguments strategy is regarded one of the most influential strategies to enhance the quality of critical thinking skills in many studies that stated above.

## **Methodology**

### **The Purpose of Current research**

The purpose of the research was to develop critical thinking skills for the 2<sup>nd</sup> year Secondary School Students through counterarguments strategy. Former researches propose the significant of counterarguments strategy; however, the identical role of counterarguments strategy is not illustrated. More particularly, whether counterarguments themselves are critical or the framework including counterarguments is critical is not pure appropriately. Therefore, we demanded sharers to evaluate not only all critical arguments but also each sentence to illustrate students' guide estimations toward each sentence. This also cements us to show how each tabbing is relevant to estimations of all arguments. Eventually, we employed a realization assessment to show sharers' memory of what was recorded in critical arguments.

### Research Design

The current research was confined to 60, 2<sup>nd</sup> year Secondary School Students who were chosen randomly. The reason for choosing this sample was because they would be finished from an important and intellectual stage in their life before completing GCSE exam. So, there was an urgent need to improve their way of thinking critically and expressing their points of views. Students were selected to form two groups; 30 students for experimental group and 30 students for control group. Developing critical thinking skills were used like using (recognize) assumptions, analyzing arguments, deduction information, and conclusion (inferential) for the 2<sup>nd</sup> year Secondary School Students.

### Materials and Instrument

Teacher's Guide: The purpose of the teacher's guide is to help teachers in their preparation and their design for critical thinking skills tasks and assignments through counterarguments strategy. To improve these critical thinking skills in 2<sup>nd</sup> year secondary schools, teacher's guide would look into related literature review, the former researches, the Egyptian English Language Framework, and the 2<sup>nd</sup> year

secondary textbook. Moreover, counseling some English language curriculum and instruction specialists. Consequently, one of the targets of this research was paying a great attention to clarifying counterarguments strategy, explaining the effect of counterarguments strategy on developing critical thinking skills, besides providing lesson preparations for some critical thinking activities from the (New Hello Year 2) textbook.

According to Aiyub (2020), the trust of many educational organizations and industry fields of employing Watson-Glaser critical thinking skills after 85 years from developing them, Watson-Glaser presented the change that occurs in these fields, basically Watson-Glaser II. They converted the five tools into three connected tools without decreasing the base of requirement in the aim of critical thinking capabilities. Thus, Interference, Deduction, and Interpretation are interacted and connected to concluding (Draw Conclusions). Meanwhile, making for the Recognition of Assumptions and Evaluation of Arguments are as two independent factors. The model proposed by Watson & Glaser is as follows:

**Figure 1** The model suggested by Watson & Glaser



**Source : Davies & Stevens, (2019)**

The figure has illustrated the new model which forms RED model. Some researchers attempted to develop some Watson-Glaser indicators above through presenting new model called RED, which have modified from many other supplies. Thus, the research designed the t – test depended on the above studies and figure (1).

Critical thinking skills tests: In order to determine the effectiveness of the suggested framework based on the counterarguments strategy, the paired samples t –test was used to compare the mean scores.

Critical Thinking skills rubric: the researcher's layout of the critical thinking skills scoring rubric was designed and then offered on a jury who are specialists in teaching English foreign language in order to examine the validity and reliability. The purpose of that rubric was to work out the learners' progress in critical thinking skills. Moreover, the rubric was employed as a pre- post measuring instrument after doing the modifications which the jury suggested.

**Table 1 Development of RED Watson-Glaser critical thinking skills rubric**

<b>Critical Thinking Skill</b>	<b>Sub-skill</b>	<b>Description</b>
Recognize Assumptions	(Recognize)Assumptions	Providing comments with the true data Data and facts about the problem

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		Is there essential evidence to boost the provided assumptions
Evaluate Objective Arguments	Analyzing Arguments	Analyzing arguments to evaluate, analyze data objectively and appropriately Being objectively to sort through the validity in drawing more precise conclusions Recognizing conclusions
	Deduction	Giving information through a list of decision-making Defining the problem Formulating the possible alternatives
Draw Conclusion	Information	What data are still required to be increased Interpreting the information found to draw a conclusion The reason to think that it is the right answer or the clear solution Analyzing how it will be done
	Conclusion (inferential)	Providing the best judgment with quality decisions Is there any new evidence that will impact a decision What are the conclusions that can draw? The decisions be based on the given information

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**Source : Davies & Stevens, (2019)**

### **Treatment**

The current research was conducted in order to treat the above problem by answering the following research main question; what is the effectiveness counterarguments strategy on developing critical thinking skills in English language for the 2<sup>nd</sup> year Secondary School Students? In addition the following three sub-questions were extracted from the main question: What are required critical thinking writing skills to be developed for the 2<sup>nd</sup> year Secondary School Students? What is the proposed framework of using counterarguments strategy for developing critical thinking skills for 2<sup>nd</sup> year Secondary School Students? To what extent will counterarguments strategy develop critical thinking skills for 2<sup>nd</sup> year Secondary School Students?

The researcher assigned a sample of 60 students of the 2<sup>nd</sup> year secondary schools were randomly selected. That sample was divided into 30 students as an experimental group and 30 students as a control group. The experimental group was taught through counterarguments strategy to develop the targeted critical thinking skills. The two groups did a pre-posttest of critical thinking skills. In order to conduct the experiment, the researcher prepared targeted research lessons which lasted three months; two periods per week. There were various activities were designed in order to suit the experiment in each step. Finally, the treatment tests depended on Watson Glaser (W-GCTA) which was designed from various choices.

### **Results**

In order to prove the reality of research questions, the researcher followed a group of steps. Firstly, the first sub-question was proved through presenting a checklist of the targeted critical thinking skills for the 2<sup>nd</sup> year Secondary School Students which consisted of five main skills in its ultimate version to seven jury members who approved it. Secondly, the second sub-question was answered through a suggested framework for employing counterarguments strategy. Thirdly, the third question was answered through proving the questions of the research. So the finally research results were found through the following: the first question declared that "The pre-post

administration proves that there is a statistically significant difference at (0.01) level between the mean scores of the experimental group and the control group students of the critical thinking skills test in favour of the experimental group." The pre-post administration of persuasive writing skills was conducted by the research groups before and after the experiment. Results of the test are shown in the following tables:

Table (1) showed that there were no statistically significant differences between the control group and the experimental group on the pre – critical thinking test.

**Table (1) T–test results comparing the pre–test means of the control group and the experimental group in critical thinking test.**

Group	N	Mean Scores	Std. Deviation	Calculated t – value	df	Sig.(2- tailed)
Experimental	30	30.66	62.61	0.018	58	0.01 level
Control	30	30.36	59.84			

The above table (1) demonstrated that the calculated t – value (0.018) of the control group and the experimental group on the pre – critical thinking test was not statistically significant as it was lower than the tabulated t (2.62). Hence, it could be showed that there were no statistically significant differences between the control group and the experimental group on the pre – critical thinking test.

In order to verify the validity of this hypothesis, the independent samples t- test was used to compare the mean scores of the experimental group and the control groups on the post–administration of the critical thinking skills test. The findings of the independent samples t–test proved to be statistically consistent with the hypothesis. See table (2).

**Table (2) T–test results comparing the post– critical thinking skills test means for the control group and the experimental.**

Group	N	Mean Scores	Std. Deviation	Calculated t - value	df	Sig.(2- tailed)
Experimental	30	68.4	66.37	2.425	58	0.01 level
Control	30	30.2	52.82			

As shown in table (2) above, the calculated t – value (2.425) was statistically significant at

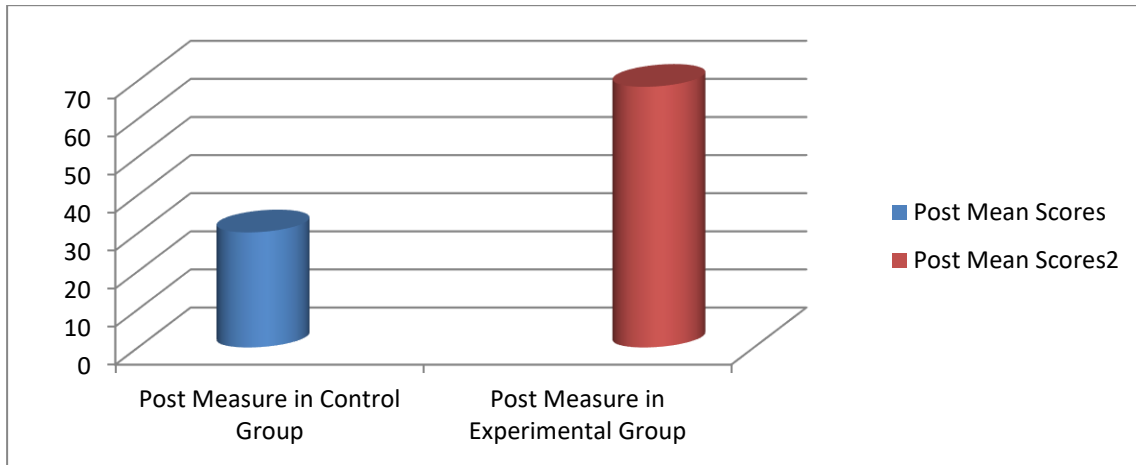
(0.01) level. Thus, there were statistically significant differences between the mean scores



of the two groups (control and experimental) on the post-administration of the critical thinking skills test in favour of the experimental group. So, the second hypothesis was verified.

For more illustration, the following figure shows the difference between the mean scores of the experimental group students and the control group students in the post administrations of the critical thinking skills test.

**Fig. (2) The mean scores of the experimental group and the control group in developing critical thinking skills.**



The researcher used the following (t) formula.

$$t = \frac{m1 - m2}{\frac{\sqrt{\{sd1\}^2 + \{sd2\}^2}}{(n - 1)}}$$

Where:

T: The calculated value of the difference between mean scores.

M1: The mean score of the experimental group pupils.

M2: The mean score of the control group pupils.

Sd1: Standard deviation of the experimental group.

Sd2: Standard deviation of the control group.

N: Number of pairs of students.

The mean scores of the experimental group students in pre and post-test of critical thinking skills were compared and t-value for paired samples was calculated as illustrated in the following table.

**Table (3) T-test of the mean scores of the pre and post administrations of the test on the experimental group in critical thinking test**

Test	Group	N	Mean Scores	Standard deviation	Tabulated T	T-test value	df	p-value
Pre-test	Experimental	30	30.66	62.61				
Post-test	Experimental		68.4	66.37	2.43	29.51	29	0.01 level

As shown in table (3) above, the calculated t-value (29.51) indicated that there were statistically significant differences at (0.01)

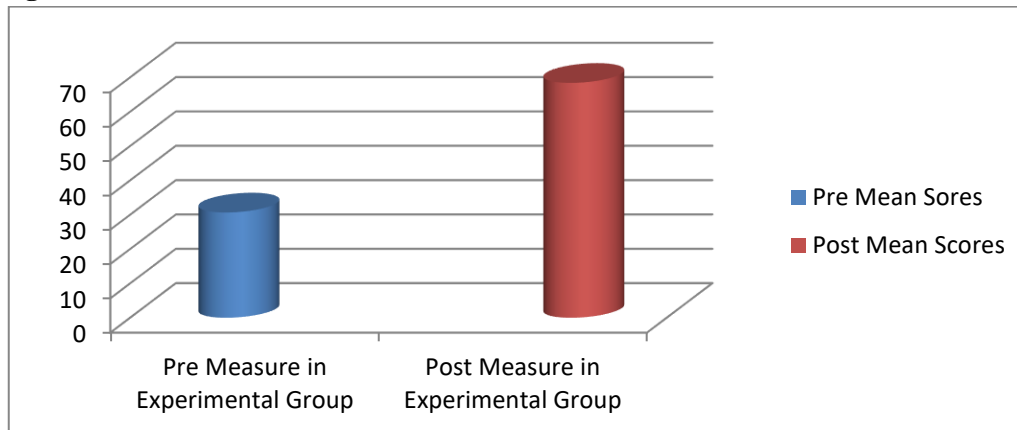
level between the mean scores of the experimental group on the pre – and post –

administrations of the critical thinking test in favour of the post test.

For more illustration, the following figure shows the difference between the mean scores

of the experimental group students in both the pre and post administrations of the critical thinking skills test.

**Fig. (3) The mean scores of pre-post administrations of the experimental group in the critical thinking skills test.**



The researcher used the following (t) formula

$$t = \frac{Dm}{\frac{\sqrt{\{(Dd^2)\}}}{N(N-1)}}$$

Where:

T: The calculated value of the difference between mean scores.

Dm: The general mean score of the difference between pairs of scores.

Dd: The deviation of the differences from their general mean scores.

N: Number of pairs of students.

**Table (4) T-test results illustrate the experimental group pre-post administration mean scores of each main skill of critical thinking.**

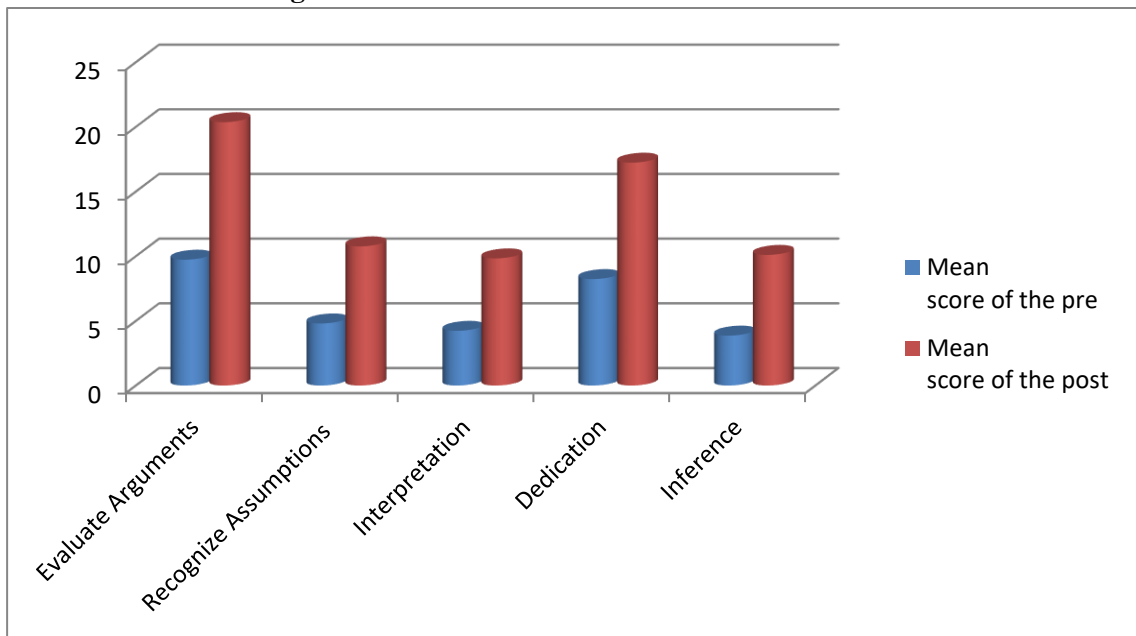
Critical thinking skills	Mean score of the pre-post	Standard Deviation	Calculated t-value	Level of Significance	The effect side
Evaluate	9.73	11.71	18,74	(0.01)	0.92
Arguments	20.36	5.35			
Recognize	4.8	1.89	17.32	(0.01)	0.91
Assumptions	10.76	2.97			
Interpretation	4.23 9.83	2.51 1.8	16.32	(0.01)	0.90
Dedication	8.23 17.23	13.24 5.37	13.98	(0.01)	0.87
Inference	3.86 10.1	2.84 4.75	16.78	(0.01)	0.90

Pre-Posttest in the table (4) detected that there was statistically significant difference at (0.01) level for each of the critical thinking skills between the mean scores of the experimental group students on the test. Moreover, the effect size was high. Thus, it proved that employing counterarguments strategy significantly affect

the study group in the critical thinking skills and had a big effect size on impacting them.

For more illustration, the following figure shows the difference between the mean scores of the experimental group students in both the pre and post administrations of each main skill of the persuasive writing skills test.

**Fig. (4) The Mean Scores of Pre-Post Administrations of the Experimental Group in Each Main Skill in critical thinking skills test.**



## Discussion

Analysis of the research statistics confirmed all of the research hypotheses and solving its questions. Moreover, it illustrated the accomplishments initial goal of the research, which was to develop critical thinking skills for secondary school students the 2<sup>nd</sup> year through using counterarguments strategy. The comparison between the performance of the research groups before and after the experiment shown the refinement accomplished in the targeted critical thinking skills in the post-administration. Accomplishments of the assigned in the following factors:

Counterarguments strategy environment was created effectively through selecting the experimental students to present class or work online. It saved labor, space and time. Students

became more interested in doing tasks based on critical thinking. It promoted cooperation among students.

Planning the tasks and activities in counterarguments strategy provided students an opportunity to interact together with more confidence. They organized their ideas through logical steps. So, their self confidence in answering critical thinking tests correctly increased. To indicate that planning is the clue to success, teacher wants to ensure that what s/he demands students to do online was a good convenience for online and the same was correct for the face to face component. The hardest part of teaching counterarguments strategy was figuring out how to combine the two experiences to capitalize on and dwell on each other.

Constructing critical thinking is the culmination of skills that have already been learned. It demonstrates to the students how to do something critically. The students should build an argument, it forms around five critical thinking components mentioned above.

### **Conclusion**

Results of the analysis uncovered a remarkable development in the targeted critical thinking skills. Thanks to the effectiveness of counterarguments strategy, this development was assigned. Results also uncovered a powerful positive interconnection between the targeted critical thinking skills and counterarguments strategy. Moreover, this can be assigned to the teaching by counterarguments strategy.

### **Recommendations**

Based on the results of the current research, the research recommended the following:

The targeted critical thinking should be implemented in secondary school stages and assigning appropriated tasks and activities assist in this implement.

Learners should be provided opportunity to use counterarguments strategy tasks in the language skills to improve the performance of the learners.

The Ministry of Education should enclose these critical thinking skills in secondary school language books.

Teachers of English should train learners on critical thinking skills through using the counterarguments strategy.

Teachers of English should vary in using the counterarguments strategy in other teaching EFL skills.

### **Suggestions for further research**

As the current research provided support the effectiveness of counterarguments strategy on developing the critical thinking skills for Egyptian learners in the 2<sup>nd</sup> year secondary governmental school, further research is needed to investigate the effectiveness of

counterarguments strategy on developing learners' other persuasive language Skills at different levels of education.

Further research is needed to use other modern approaches or strategies for developing critical thinking skills for learners.

Further research is suggested to investigate the effectiveness of counterarguments strategy tasks on improving teachers' linguistic performance

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