



The Effect of an Instructional Program of Critical Thinking Skills on Eleventh Grade Female Students' English Writing Skills in Jordan

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Abstract

Objectives: This study aimed at investigating the effect of implementing an instructional program based on critical thinking skills on developing English language writing skills among eleventh grade female students.

Methods: A quasi experimental study approach was followed during the first semester of the scholastic year 2022-2023 in Wadi El Seir Directorate. The sample of the study consisted of 42 students in two sections who were randomly distributed to a control group (21 students) and to an experimental group (21 students). The two groups were examined by writing a composition to assess their writing skills which include the following higher thinking skills: analysis, decision making and expressing themselves through selecting one topic out of two. One research instrument was used to collect the data of the study; a comprehensive English achievement test of writing (Pre-posttest) assessed by a writing rubric that tests students' writing skills including the higher order skills. Data were analyzed using means, standard deviations, ANCOVA and MANCOVA.

Results: The findings of the study indicated that there was a statistically significant difference ($\alpha=0.05$) between the mean scores of both groups (experimental and control) regarding their English language writing skills. The mean score of the experimental group was (13.62 + 1.774) compared with the mean score of the control group was (9.29 + 1.774). The Writing achievement was in favour of the experimental group students.

Conclusion: The study findings indicated that the instructional program based on critical thinking skills was significantly more effective than the conventional method in developing students' English language writing skills. The study recommends that English language writing skills should be improved through including the critical thinking skills in the English language curricula.

Keywords: Instructional program, Critical Thinking Skills, English language writing achievement test, Higher Order Thinking Skills.

أثر برنامج تعليمي لمهارات التفكير الناقد في تحصيل مهارات الكتابة باللغة الإنجليزية لدى طالبات الصف الحادي عشر في الأردن

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ملخص

الأهداف: الكشف عن فاعلية برنامج تعليمي قائم على تطبيق مهارات التفكير الناقد؛ لتحسين مهارات الكتابة باللغة الإنجليزية لدى طالبات الصف الحادي عشر.

المنهجية: اتبعت الدراسة المنهج شبه التجريبي، وطُبقت الدراسة على طالبات الصف الحادي عشر في مديرية لواء وادي السير خلال الفصل الدراسي الأول للعام 2022-2023. تكونت عينة الدراسة من 42 طالبة في شعبتين، وزعن عشوائياً؛ بحيث عدت إحداهما مجموعة ضابطة (21) طالبة، والأخرى مجموعة تجريبية (21) طالبة. اختبرت المجموعتان بكتابة موضوع لقياس مهارات الكتابة، تضمن المهارات العليا التالية: التحليل، واتخاذ القرار، والتعبير عن الذات؛ من خلال اختيار موضوع من أصل موضوعين. وقد استخدمت أداة بحثية واحدة لجمع بيانات الدراسة؛ وهي اختبار تحصيلي شامل لمهارات الكتابة باللغة الإنجليزية (قبلي وبعدي)، قيّم بسلم تقدير لفظي؛ لقياس مهارات الكتابة باللغة الإنجليزية. وحللت البيانات باستخدام المتوسطات الحسابية، والانحرافات المعيارية، إضافة إلى تحليل التباين المصاحب (ANCOVA AND MANCOVA). بين متوسط علامات كلتا المجموعتين (الضابطة والتجريبية) لمهارات الكتابة؛ حيث كان المتوسط الحسابي للمجموعة التجريبية هو (13.62+1.774) مقارنة مع المجموعة الضابطة (9.29+1.774) ولصالح المجموعة التجريبية.

الخلاصة: توصلت الدراسة إلى أن البرنامج التعليمي القائم على مهارات التفكير الناقد أكثر فعالية من الطريقة التقليدية في تطوير مهارة الكتابة لدى الطالبات. توصي الدراسة بضرورة تطوير مهارات الكتابة في اللغة الإنجليزية؛ من خلال تضمين مهارات التفكير الناقد في مناهج اللغة الإنجليزية.

الكلمات الدالة: برنامج تعليمي، مهارات التفكير الناقد، اختبار تحصيل الكتابة، مهارات التفكير العليا.



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1.1. Introduction

Learning English as a foreign language has been one of the major goals of the Ministry of Education in Jordan (MoE) to enhance students' abilities to use English as means of communication. In doing so, the MoE is courteous to update the English language curriculum (EFL), methods of teaching English, selection of learning resources, and teacher training. As a result, using technology, problem solving, and creativity, lifelong and critical thinking skills are among the different components incorporated in the twenty-first (21st) century skills. Motivating students to learn English language, especially the writing skills, is also noticeable concern in the present EFL curriculum manifested by interesting activities that meet students' learning strategies, needs and interests that promote positive attitudes towards learning English (Emam2014).

The concept of critical thinking (CT) was first identified by Socrates nearly 2,500 years ago as he introduced the process of questioning which was later called the Socratic Method, as an approach for accumulating individual's reasoning skills features. In the 20th century Dewey revived the CT notion to be a prominent component in Western educational programs (Pardede, 2019).

According to Sahamid (2014) critical thinking skills (CTS) are employed through learners' abilities to justify claims by giving support for their arguments as well as to cite reasons. Inquiry skills are one of the most essential characteristics of critical thinkers who are involved in higher order thinking skills (HOTS) which require certain abilities from the learners' including identifying, analyzing, and giving solutions to problems. Student's rationale progress is improved through the development of critical as well as systematic thinking skills. Therefore, teachers need to stress on, not only with the language input they provide students with and the language output they produce but also with the process of thinking that has occurred within the students' cognitive system.

Farisi (2016) argued that critical thinking skills are nowadays part of everyday life's practices, and so they should be emphasized in designing and planning any curriculum. Furthermore, the need to move teaching perspective to real implementation of higher order thinking (HOTS) rather than just adopting theoretical concept without practicing it, is a threat that should be avoided in teaching. Al-Khalidi & Awamreh (2012) also emphasized the importance of moving from theory into real practice enforcing critical thinking (CTS) skills.

On the other hand, Sanguña (2021) suggested that teachers can integrate these skills through content-based instruction (CBI) by implementing critical thinking skills to stimulate English language learning. Employing CBI in teaching facilitates the attainment of real-world situations through critical thinking tasks that involve topics related to learners' interest and "authentic topics" which scaffold learners to acquire language skills as well as helping them to grow.

To achieve the success among EFL students in English language writing skills, we need to provide students with a learning environment utilizing critical thinking skills part of higher order thinking skills (HOTS). However, the integration of reading and writing tasks alongside with critical thinking skills (CT) is not an easy task to achieve because there is a need to develop an EFL instructional program based on CTS which should be employed by EFL professional trained teachers in their classrooms (Farisi, 2016; Fandiño, 2013).

However, EFL students in Jordan generally face difficulties in learning English language writing skills and how to integrate their learning in authentic situations. Yang (2009) argued that student's proficiency in reading is related to their writing as improving students reading skills will affect their writing skills. Therefore, teachers need to understand that these two language skills are integrated and they should not be taught in isolation as they promote critical thinking and both skills are closely integrated to each other. Reading and writing are drawn from the same knowledge base hence it is assumed that good students who write well-read well.

Writing is a process based on theoretical notions, practice, reflection, and self-expression to communicate ideas encouraging students to use their thinking skills, communicating styles while teachers scaffold students to conclude into self-representations and personal creativity, allowing for the growth of lifelong writers and communicators. Furthermore, there are different instructional methods and materials that could promote students to be skilled writers (Baltus & Belhiah, 2013).

Undoubtedly, all levels of schooling focus on improving students' writing skills considered to be a difficult task

because some students struggle in the writing classes and try to memories certain patterns to use them whenever they are asked to write any assignment. Students should be trained on use the accurate writing instructions, conventions of language, standards writing forms, and be able to select and organize thoughts in order to be a good writer (Al Sanee, 2013).

Developing the current EFL curriculum “Action Pack” which is the official curriculum taught in all public schools of the Hashemite kingdom of Jordan according to critical thinking skills among EFL students is considered to be essential. Nevertheless, the improvement must be aligned to the current EFL curriculum outcomes as well as the General Guidelines and the General and Specific Outcomes for the English Language Curriculum.

Beyer (2008) suggests guidelines that EFL teachers can follow in teaching critical thinking skills to improve EFL students’ reading and writing skills consisting of the following: (1) detailed explanations and modeling of thinking skill techniques; (2) explicit teaching strategies on ways of implementing CT; (3) process and systematic skills utilized creating autonomous learners; and (4) helpful feedback and continuing teaching and modeling. These skills include many aptitudes that students need to develop such as writing methods, analyzing, summarizing the main idea, making inferences, interpreting, drawing logic conclusions, evaluation skills, and deducting the writers’ purpose and tone. Teaching CT requires intensive planning in depth to meet learners’ individual differences and needs as well as to scaffold them to hone their higher order thinking skills which tends to be a challenging task (Moon, 2007).

1.2. Statement of the problem

The learning tasks and teaching tips that are described in Action pack eleven do not seem to emphasize critical thinking skills properly, although the Ministry of Education in Jordan has stressed the importance of developing EFL curriculum in light of the 21st century skills. Critical thinking skills are essential for this era in order to enhance effective authentic communicative contexts that foster English language writing skills creating autonomous learners. It is also beneficial to provide teachers with practical instructions and strategies that dwell on CTS and align with the Ministry of education curriculum to improve students’ writing achievements (Al-Khaldi & Awamreh, 2012).

This study emanates from the recommendations of some studies which refer to the importance of exploring further studies on how to improve students’ writing skills as well as the inclusion of CTS in English language teaching specifically teaching writing skills. For example, the findings of international studies, e.g. Erkek (2022), Murtadho (2021), Udu (2021), and Wilson (2016)

However, thorough content analysis conducted by the researcher of the Action Pack 11 teacher’s book, revealed that only 24.04% of the activities and tasks addressed Higher Order Thinking Skills (HOTS) while 75.96% addressed Lower Order Thinking Skills (LOTS). On the other hand, pre-service and in-service teacher education programs do not address promoting critical thinking skills sufficiently in the EFL curriculum. Therefore, this study is intended to shed light on the effectiveness of a proposed instructional program based on critical thinking skills on the writing achievements of the eleventh grade EFL students in Jordan.

Therefore, the researcher thought that an instructional program based critical thinking skills may have considerable effect on eleventh grade female students’ writing achievements in Jordan during the scholastic year 2022-2023.

1.3 Purpose and Questions of the Study

This study aims at investigating the effectiveness of an instructional program based on implementing critical thinking skills on the eleventh grade female students in Jordan on developing their English language writing skills achievements.

It aims to answer these questions:

1- Are there any statistically significant differences ($\alpha = 0.05$) between the writing mean scores of eleventh grade EFL students in Jordan, which can be attributed to applying an instructional program based on critical thinking skills?

1.4. Significance of the Study

The researcher assumes that an instructional program based on critical thinking skills may contribute to improving eleventh grade students’ achievements in learning English language writing skills in Jordan. The findings of implementing the present study may be beneficial for EFL curriculum designers and developers, teachers, students as well as researchers.

Critical thinking skills have been recommended by many researchers to be implemented as the subject of further studies improving students' higher order thinking skills.

The importance of incorporating Critical Thinking Skills in EFL learning and teaching processes have been emphasized in many recent studies. Several researchers have recommended the necessity to investigate further studies on the influence of integrating CTS- based activities on EFL students' writing achievements. Integrating critical thinking skills has an essential effect on fortifying students' repertoire of English language writing skills as highlighted by Al-Ghazo (2018), Alkhalwaldeh (2015), AlKhoudayr (2015), Al Roomy (2022) and Saed & AL-Omari (2014) I

Furthermore, the Ministry of Education in Jordan may also benefit of this study findings in developing the current curriculum (Curriculum and textbook management, 2017) and utilizing CTS teaching and learning strategies in their curricula. English language teachers may find critical thinking strategies beneficial in teaching by creating autonomous students who use English language in real communication. Furthermore, it may help EFL students exposing them to authentic learning materials that promote critical thinking skills which may impact students' repertoire improving their achievements in writing skills. Implementing the instructional program will be of great benefits identifying students' needs and in their learning strategies.

1.5. Definition of Terms

The instructional program: This is an instructional program that was developed by the researcher based on a set of concepts that stimulate critical thinking skills among EFL eleventh grade female students in Jordan to develop their writing achievements through CTS activities that enhance higher order thinking skills.

Eleventh grade students: refer to female students in Wadi El-Seir public high school in Jordan who study English as a foreign language ranging between the age of fourteen and fifteen.

Critical thinking CT: Facione (1990) defines critical thinking as "purposeful, self-regulatory judgment which results in interpretation, analysis, evaluation, and inference, as well as explanation of the evidential, conceptual, methodological, criteriological, or contextual considerations upon which that judgment is based" (p. 2). Paul & Elder (2008) emphasized that "critical thinking is the art of analyzing and evaluating thinking with a view to improving it" (p. 2). According to Sahamid (2014) CT refers to "The ability to cite reasons, to justify claims and give support to arguments is seen as primary characteristics of a critical thinker" (p. 166).

In this study critical thinking skills refer to all the teaching and learning strategies that enhance creating autonomous learners who analyze, express their points of view, being able to justify claims by giving a support for their arguments as well as using their higher order thinking skills.

Writing skills: Ryu (1997) defines writing skills as "writing skills are rhetorical and other necessary abilities which are independent of language skills."(p.10).

In this study writing skills refers to students' abilities to put their thoughts into words in a coherent meaningful way using particular structural level of language to deal with all the writing materials and tasks presented in Action Pack eleven in the student and the activity books.

1.6. Limitations of the Study

There are several limitations which this study has.

- The first limitation was the school "Wadi EL- Seir School for Girls" where the study was conducted purposefully because it allowed the researcher to apply the instructional program.
- The second limitation was that the participants of the study were only 42 eleven –female students distributed into two sections (21 students in each).
- The third limitation was that the participants of the study were female students.
- The fourth limitation was that the study was carried out over a period of only six weeks during the first semester of the scholastic year 2022 – 2023.
- The fifth limitation was that one main skill was considered in the treatment which is the writing skill which is included in unit two and three.

- Finally, the only instrument was used (writing achievement test) was developed by the researcher. Therefore, the validity of the obtained results depends on the reliability and the validity of the instrument.

2. 1. Previous Related Studies

Erkek (2022) investigated the effect of implementing critical thinking activities in the Turkish curriculum in planning the new curricula for the secondary school students by three Turkish experts. They found that there are limited studies on this filed. Therefore, the new curricula must include CTS tasks. The results indicated that EFL students were able to achieve better results the PISA exam during the year 2020-2021. The results of the analysis revealed that the critical thinking skills were effective in improving students' English reading and writing skills.

Murtadho (2021) conducted an action research to examine the roles of writing instruction involving metacognitive and critical thinking strategy to improve argumentative writing skills of 88 Indonesian students. Involving four stages of learning tasks: understanding of problem, monitoring of students' learning activities, problem-solving, assessment, and conclusion drawing. Referring to critical skill criteria as a baseline, the analysis found that employing metacognitive and critical thinking process in the instructional treatments enabled the students to improve their argumentative writing skills. The results revealed that a crucial role of integrating metacognition and critical thinking skills in writing instruction as beneficial strategies improving students' writing skills.

Al-Ghazo (2018) examined the attitudes of EFL Jordanian learners studying at Ajloun National University (ANU) toward using the World Wide Web net for language learning proficiency. The aim of this study was to explore whether there was any significant difference between males and females' attitudes toward using World Wide Web for language learning proficiency among 40 EFL learners (19 male and 21 female). The researcher used two instruments which are an attitudinal questionnaire and T- test to compare the two groups which are the control and the experimental group. The study findings indicated positive attitudes about the importance of using the World Wide Web net to develop students' linguistic proficiency in the four language skills. In addition, the findings of T-test showed that there was no difference between female and male learners' attitudes toward the use of the internet for improving their language proficiency.

Ebadi & Rahimi (2018) investigated the impact of WebQuest-based classroom on Iranian EFL students' critical thinking and academic writing skills enrolling in IELTS writing academic tasks. The researcher used two instruments which are California Critical Thinking Skills Test form B used to assess the participants' critical thinking skills for IELTS academic writing skills and a semi-structured interview was conducted to assess their perceptions towards the effect of the WebQuest-based classroom on critical thinking and academic writing skills. The findings shown that both the WebQuest-based and the face-to-face classrooms developed the learners' critical thinking and academic writing skills, while the WebQuest-based overtook face-to-face classrooms both in post- and delayed post-tests (the learners' positive perceptions towards the impact of the WebQuest-based classroom).

Liu (2016) conducted an intensive English writing program based on Corrective Feedback (CF) in the U.S. to prepare international students for the fundamental academic skills needed to succeed in U.S. universities. Data collection was through Journal writing and background attitudes questionnaire to collect students' past English language experiences and to identify factors contributing to L2 attitudes writing and motivation. The findings revealed significant correlation between learners' attitudes towards the usefulness of the error codes and their improvement in accuracy.

AlKhoudary (2015) explored the role of critical thinking skills in developing students in writing skills as well as the role of writing in developing students' critical thinking through qualitative, quantitative research study. Also, it aimed at investigating learners' and teachers' attitudes towards the role of critical thinking in developing the writing skills of one hundred students at AlBuraimi University College (BUC) via responding to a questionnaire. Learners' and teachers' responses to the questionnaire supports the idea of integrating critical thinking in teaching the writing skills.

Saed & AL-Omari (2014) conducted a quasi-experimental study to explore the effectiveness of a proposed mind-mapping program on developing writing achievement skills of 91 female eleventh grade students at Sands National Academy, Amman. The study instruments were the writing pre- posttests and the attitudinal questionnaire. The purpose of

this study was to assess the effectiveness of the strategy on promoting students' attitudes towards writing in Jordan. The results of the study showed that there were statistically significant differences at ($\alpha = 0.05$) in the mean scores of students regarding their writing achievement and their attitudes towards writing in favor of the experimental group. However, the results of the study revealed no significant interaction between the method of instruction and students' general levels of English (good, average, or poor) in students' writing achievement or attitudes towards writing.

2.2. Conclusion

As viewed in the previous literature related to the effect of CTS on correlating EFL skills, CTS can be integrated in EFL curricula to assist students' English writing achievement. For example, Udu (2021) examined the null hypothesis that teachers' and students' attitudes towards reading and writing do not instantaneously predict students' achievement in the English language. Al-Ghazo (2018) examined the attitudes of EFL Jordanian learners studying at Ajloun National University toward using the World Wide Web net for language learning proficiency in the four main language skills. It is worth mentioning that this study was distinguished from the above-mentioned studies; it might have been the first study in Wadi El-Seir Directorate to put together an instructional program based on critical thinking skills to investigate its influence on improving eleventh grade EFL students' writing achievement. The study was different as it uses only one instrument; an EFL writing achievement test, writing rubric

3. Methods and Procedures

This section includes a description of the design of the study, the subjects of the study, the research instruments, the validity and reliability of the instruments, data analysis and procedures.

3.1. Study Design

To collect the data of this study, the researcher used a quasi-experimental design. There is one independent variable which has two levels: the instructional program and the conventional teaching method. One dependent variables: students' achievements in writing. This design can be graphically represented as follows:

This design of the study is statistically represented as follows:

EG: O1 X O1

CG: O1 --- O1

EG: stands for the experimental group, CG: stands for the control group, X: stands for the treatment" the instructional program based on critical thinking skills", O1: stands for EFL writing achievement test".

3.2. Participants of the Study

The participants in the study were chosen purposefully from Wadi El-Seir School for Girls in Jordan who were studying in the first semester of the scholastic year 2022 – 2023. This school has been selected purposefully as the researcher is teaching there and because the school agreed to collaborate with the researcher. Two eleventh- grade sections were assigned to participate in this study. One section was randomly assigned as the experimental group (21 students), whereas the other section was the control group (21 students). Students of the experimental group were taught English by getting involved in Critical Thinking Skills- based program, whereas students of the control group were taught using the conventional teaching method. Both groups took the one EFL writing achievement test before and after the treatment. To ensure reliability, a third section (21 students) from the same school, Wadi El-Seir School for Girls, participated in this study representing the pilot group.

3.3. Instruments of the Study:

Instruments of the Study: The instrument used to collect data of this study was: a writing achievement test (with a writing rubric).

3.4. Writing Achievement Test

Eleventh grade students took the same English writing achievement test as a pre-posttests over two sessions. The duration between the pre-test and posttests was six weeks. The writing test included two questions for the pre-posttest (describing a traditional dish & describing your favorite sport) out of twenty marks. They supposed to write around 200

words. These topics are new to students but they are followed by seven questions for each topic to help students generate more ideas facilitates collecting and organizing their writings. (See Appendix1). The duration of writing test was forty five minutes. On rubric was used to grade the writing part of the writing achievement test.

3.5. The Writing Rubric

To evaluate students' writing skills, a writing rubric adopted and then modified referring to ("Benchmark D: Writing in Action Pack 11- Teacher's Book" Page 148) as well as referring to related literature (e.g. Hoffman (2021), Ong, Swanto, AlSaqqaf & Ong (2021) was developed by the researcher. It comprised five criteria: content, write well -organized, coherent paragraphs, produce correct grammatically compound sentences, reflection and edit and proofread final draft with correct Standard English. Each criterion included five indicators and they were given 4 points for each. The total score of the writing test was 20. Two experienced raters independently graded students' writing based on the writing rubric. Therefore, the total score of the writing achievement test was twenty.

3.6. Teaching Method

3.7. Description of the Instructional Program

The researcher developed an instructional program based on a set of principles that underlie The Critical Thinking Skills (CTS). The main purpose of this program is to investigate the effect of Critical Thinking Skills-based activities on the eleventh graders' achievement to learn English writing in Jordan. The CTS- based program is based on the Intended Learning Outcomes (ILOs) of Action Pack 11 (The Teacher's Book of Action Pack 11, p.7-14) (The Ministry of Education, 2014). The CTS- based program was exclusively introduced to the experimental group of eleventh grade at Wadi El-Seir School for Girls in Wadi El- Seir Directorate over a period of 6 weeks during the first semester of the scholastic year 2022 – 2023. Simultaneously, the content of the writing texts (Action Pack 11, Modules 2 & 3, Units 2 &3), such as, the intended learning outcomes, the same themes of the writing tasks, assessment instruments, number of lessons, amount of activities, time assigned to each lesson and the teacher was the same for both the control and experimental groups. However, the differences between the CTS-based program and the conventional teaching method were in the teaching and learning instructions and in the type of questions which were designed to stimulate HOTS. The teacher planned CTS lessons in which outcomes, procedures, content, tasks and time were clearly stated. First, the teacher used various teaching and learning strategies to stimulate and scaffold HOTS abilities among students by implementing these strategies on the reading comprehension by relating the writing tasks to the reading ones" integrating learning and teaching among the reading and writing texts" and by identifying cohesion and coherence aspects by analyzing the reading texts. Also, students were trained to take notes while reading the text. Analyzing the texts and interpreting the authors point of view is one of the skills that students were exposed to in the CTS-based program. Teacher utilized brain storming activities and "Think, draw, show and compare strategy throughout analyzing the texts as a model to follow in their writing tasks. Reading activities were integrated with writing activities as these two skills are inseparable. At the end of each class students write their reflections on their dialogue journal about what they have learnt. Not only they reflect their learning but also they learnt to judge and reflect on other students' different point of view and they suggest solution, engage in problem- solving tasks and participate in project –based learning using all available resources. Students were able to negotiate ideas and express their opinions. Second, in writing classes teacher integrated the reading texts with all its elements with teaching and learning writing. Teacher implemented some fixed teaching and learning strategies in every writing class to enable students master the CTS writing processes. Some of these focal writing strategies are related to the use of the mini-lesson demonstration by the teacher to scaffold students' learning of each teaching point. For example, demonstrating collecting ideas by sketching, timeline, jotting down ideas etc. Also, teacher motivated students to search for information before attending the class to negotiate their ideas based on evidence and try to convince others with their points of view with realistic proof. Writing blogs was one of the most beneficial ways to encourage students express their perception with respect for other students' points of view which is also a new writing genre for eleventh graders. Introducing writing advertisements as well influenced students CTS because students worked hard to think creatively to produce their idea in new context and to take decisions on the captions and the way to present their message to influence

others. Students learnt to edit their writing by drafting and revising as well as sharing their writings to be edited from their classmates accepting positive criticism. Self- reflection was carried out through all writing and reading activities to enhance CTS.

Eventually, implementing the CTS-based program helped to create autonomous learners who can select their learning strategy using “Think aloud” by acknowledging the most suitable learning methods to be followed through logical steps which is part of metacognitive learning skills.

3.8. Description of the Conventional Program

This refers to the teaching method that was described in the Teachers’ Book of Action pack 11. This method was based on the principles of the communicative approach, learning English as a foreign language and authenticity. This denotes the importance of teaching English in context and integrating all language skills while teaching and learning. All curriculum components, (the aims, the Intended Learning outcomes (ILOs), activities, content, procedures, learning and teaching strategies, assessment strategies and tools), were drawn from the General Guidelines and General and Specific Outcomes for the English Language: Basic and Secondary Stages in Jordan, the Activity Book, the Student’s Book and the Teacher’s Book of Action Pack 11. The outcomes of module 2 and 3 are like those of the CTS- based instructional program. For example, the writing outcomes in these two module are meant to achieve the following outcomes: First, to improve their critical thinking skills to be better writers. Second, to integrate learning reading strategies with writing. Third, to reflect on their learning. Fourth, to help learners to be autonomous learners. Finally, to promote positive attitudes towards learning English writing skills which are the same outcomes intended to be achieved by the instructional CTS-based program.

3.9. Validity of the Research Instruments

To establish the content validity of the research writing instrument, a jury of twenty three experts were consulted (i.e. seven TEFL professors, one professor curriculum specialist in EFL and literature, three professors of measurement and evaluation, three professors of curriculum and instruction, two EFL supervisors, one curriculum specialist, six English language teachers). The experts were kindly requested to check the appropriateness of the writing test and writing rubric in terms of accuracy, comprehensiveness, relevance, clarity, length and language. For example, the content of writing tasks was modified by the experts to be of students’ proficiency level and to meet students’ interests as well as being novice to them. Two TEFL professors recommended to refer to the writing benchmark in Action Pack 11 Teacher’s Book as a refereed reference for designing the writing rubric assessing students’ writing and making necessary changes. The writing rubric consisted of five parts (content, writing well -organized, coherent paragraphs, producing correct grammatically compound sentences, reflecting and editing and proofread final draft with correct standard English). Each part included four indicators and they were given 4 points for each. There were many valuable suggestions which mainly included reviewing word choice, re-organizing the items, deleting some repeated items, adopting the bench mark in the Teacher’s Book, replacing “organization” by “write well -organized, coherent paragraphs”, and adding “reflection” instead of “reviewing”. One of the suggestions was that students should only choose one topic to write about and the topics should be somehow relevant to students’ background knowledge. Also, the experts suggested to write the same number questions on each topic that are meant to help students generate more ideas and to reflect on them. It was also recommended that topics could be selected from the Teachers’ Book suggested test that are designed to meet students’ level of proficiencies and they are still uncovered in the first and second Modules. The foremost suggestions of experts regarding the teaching methods included simplifying the language used to describe each of the teaching programs, incorporating different types of CTS activities. Following the same organization of the components of both programs, reconsidering the time allotted for each activity and highlighting the tasks that are adopted from the conventional teaching methods and the ones that are specially designed for the CTS-based program to show what are innovations that the CTS-based program had to add.

3.10. Reliability of the Research Instruments

Reliability of the writing test was established using test- retest formula to calculate the Pearson Correlation Coefficient. The inter-reliability of raters, who wrote the scores of students’ writings referring to the writing rubric, also was established by applying Holst (1964) formula. To ensure reliability, a third section from the same school which is Wadi El-

Seir High School for Girls in Wadi El-Seir Directorate (21 students) was selected as a pilot group.

3.11. Statistical Analysis

To analyze the data of the study, the Statistical Package for the Social Science (SPSS) will be used. This will include calculating the means and standard deviations for both groups (i.e., experimental and control). One-way MANCOVA tests will also be used to test the statistical differences between mean scores of the two groups concerning their responses to the writing tests.

4. Findings

This study aimed at investigating the effect of an instructional program based on Critical Thinking Skills (CTS) on developing writing skills in English among eleventh grade female students in Jordan. This chapter presents the results of the study and provides an analysis of data by using different measurements and tests such as mean scores, standard deviations, Analysis of Covariance (ANCOVA) and Multivariate Analysis of Covariance (MANCOVA). The research question was addressed:

Results Related to the Research Question of the Study Are there any statistically significant differences ($\alpha = 0.05$) between the writing mean scores of eleventh grade EFL students in Jordan, which can be attributed to applying an instructional program based on critical thinking skills?

To answer this question, means and standard deviations of students' writing total mean scores were calculated. Results are shown in Table 1.

Table 1. Means and standard deviations of eleventh grade students with regard to their writing skills mean scores due to the program of teaching (Conventional vs. CTS -Based Program)

Group	N	Pre-test		Posttest	
		Mean	Std. Deviation	Means	
Experimental	21	10.57	6.345	13.62	1.774
Control	21	7.24	4.493	9.29	4.173

Mean scores are out of 20

Table 1 reveals that there were differences in the mean scores of both groups (experimental and control). The mean score of the experimental group on the post- test for writing was (13.62) while the mean score of the control group was (9.29). To test if those differences were statistically significant ($\alpha = 0.05$), one-way Analysis of Covariance (ANCOVA) test was applied. Results are presented in Table 2.

Table 2. One-way analysis of covariance (ANCOVA) of the writing skills mean scores due to the program of teaching (Conventional vs. CTS -Based Program)

Source	Type III Sum of Squares	Df	Mean Square	F	Sig.	Partial Eta Squared
Pre-writing	.948	1	.948	.090	.766	.002
Group	187.645	1	187.645	17.837	.000*	.314
Error	410.290	39	10.520			
Total	608.405	41				

* Statistically significance at level ($\alpha = 0.05$).

Table 2 reveals that there were statistically significant differences in the mean scores of students of both groups regarding their writing skills due to the teaching method. The "F" value (17.837) is statistically significant ($\alpha = 0.05$). The adjusted mean scores and standard errors were also calculated. Results are shown in Table 3.

Table 3. Adjusted mean scores and standard errors of students of both groups (experimental vs. control) of the writing skills mean scores due to (Conventional vs. CTS -Based Program)

	Group	Mean	Std. Error
Achievement in English Writing Skills	Experimental	13.666	.725
	Control	9.239	.725

Table 3 shows that the adjusted mean score of the experimental group (13.66) was higher than the adjusted mean score of the control group (9.239). This indicates that the differences were in favor of the students who were taught using the instructional program based on critical thinking skills. To know the effect size, Eta square was also obtained. As shown in Table 2, the effect size was (.314), which means that (31.4%) of the variance in the total scores of students' writing skills was attributed to the instructional program based on critical thinking skills (CTS).

5. Discussion

Discussion Related to the Research Study Question: "Are there any statistically significant differences ($\alpha = 0.05$) between the writing mean scores of eleventh grade EFL students in Jordan, which can be attributed to applying an instructional program based on critical thinking skills?"

The results of the study revealed that there was a statistically significant difference at ($\alpha = 0.05$) between the mean scores of the students due to the CTS- based program instructional program since the adjusted mean score of the experimental group students (13.62) was higher than the adjusted mean score of the control group counterparts (9.29).

This improvement in students' language skills may be due to the incorporation of implementing Higher Order Thinking Skills (HOTS) in teaching and learning writing skills. Writing skills is considered to be difficult for most EFL students. On the other hand, the CTS-based program facilitated practical strategies that meet students' needs for learning. These results are consistent with those of AlKhoudary (2015), Ebadi & Rahimi (2018), Erkek (2022), Liu (2016), Liu (2016), Murtadho (2021), and Saed & AL-Omari (2014).

This improvement of students' writing achievement may be due to the integration of both reading and writing activities which the CTS based program emphasized, such as analyzing reading texts, expressing themselves freely in writing, comparing and contrasting, problem solving tasks, note-taking, searching for information, raising questions, negotiating ideas in small groups, and project-based learning. For example, all the writing tasks were based on similar reading themes which enabled students to make use of reading genres, reading context as well as to integrate both CTS reading strategies to the writing ones. Students were involved in authentic tasks such as writing blogs, emails and letters responding of reading tasks, these activities helped them to follow the same format of writing texts and to facilitate generating more ideas for writing. Students engaged in authentic writing tasks through project-based learning "Unit 3, lesson 4, Special Olympics" in which students were asked to suggest and employ practical solutions and facilities to help people with disabilities to live life with ease in their school environment. Also, throughout the writing tasks teacher implemented the modeling and think aloud strategies scaffolding students through the mini-lessons and providing tangible enactment of writing strategies. Interestingly, students learned how to select best learning strategy to follow among various process learning writing strategies creating autonomous learners including the following strategies; collecting ideas, timeline events, sketching and labeling, writing captions, self -assessing, self- reflecting, revising, peer editing and publishing.

Moreover, it seems that students of the experimental group were motivated to acquire the CTS by reflecting on what they read in a writing form, negotiating different points of view, writing their dialogue journals as well as using the "Think, draw, share" and compare and contrast. In each English class, students were involved in authentic tasks in which reading skills were intensely integrated with the writing skills. Students analyzed the reading tasks as mentor texts to help them write coherently.

Another explanation is that the experiment group developed their writing abilities by being exposed to different

teaching and learning strategies. They were able to evaluate others through their writings and to present their points of view during writing their dialogue journal by reflecting on their learning and what strategies worked well and by creating posters, jotting down feelings and attitudes reducing anxiety that leads to a positive learning environment.

Another possible explanation of this result could be due to implementing the Think aloud strategy during the all phases of writing. This strategy promoted different levels of learners' thinking skills through activating their cognitive and metacognition thinking skills. It also encouraged them to think critically about the topic by creating active learners empowered with problem-solving skills, and selecting the best writing strategy that serves learners' needs.

6. Conclusion

In conclusion, using an instructional program based on CTS to teach English language skills for EFL eleventh grade students developed students' EFL achievements in writing skills. The improvement in students' English language writing skills in general such as reflecting, expressing points of view, evaluating and comparing and contrasting may be due to the inclusion of the CTS-based activities through the following teaching and learning strategies: discussing points of view, writing on dialogue journals, "think, draw, share strategy", comparing and contrasting, note-taking, searching for information, raising questions, negotiating ideas in small groups, project-based learning, problem-solving, self-reflecting, explaining, analyzing and making inferences during the integration of the reading and writing English classes. In fact, implementing the CTS-based instructional program in EFL classes may consolidate receptive and productive knowledge of students. They can write in English texts proficiently. Students can be long-life learners when they are engaged in CTS activities. Moreover, implementing the critical thinking skills provides EFL students with essential aptitudes that could be integrated to other subjects such as analyzing, interpreting, inferring, being autonomous learner, evaluating the accuracy and truthfulness of statements, problem –solving, decision-making, reasoning, creative thinking, accepting others views, communicating, reflecting, and having life-time skills. 7.

Recommendations

1. English language teachers should be trained how to design CTS activities to be used in their lessons.
2. Teachers should use various teaching and learning CTS during their lessons acknowledging their effect on improving students' English language skills and creating autonomous learners.
3. Professional development programs held by the supervisors of the Ministry of Education should cater CTS in their workshops during teachers' training.
4. Curricula developers and textbook authors should incorporate more CTS based activities in EFL curriculum.
5. Other researchers should explore the impact of the CTS on other grade levels and other skills.

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