The Impact of an Online Annotation Tools Based program on Enhancing EFL Secondary Stage Students' Critical writing skills

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Abstract

The present study aimed at investigating the impact of an online annotation tools-based program on enhancing EFL secondary stage Students' in critical writing skills. The instruments that were designed and used in the current study were a critical writing skills

questionnaire and a pre-post Critical writing skills Test for assessing Secondary Stage Students' Critical writing skills before and after receiving the program. The study adopted the quasi-experimental design using experimental and control groups. Participants were consisted of sixty students randomly selected from first year secondary stage of Monshaat Al Salam Secondary School, Mansoura, Dakahlia governorate during the first semester of the academic year 2021-2022. The participants were taught using online annotation tools-based program. Results provided evidence to the effectiveness of using Online Annotation Tools Based program in improving the students' Critical writing skills. A number of recommendations concerning the use of Online Annotation Tools Based program.

Key words: Online Annotation Tools, Critical Writing Skills, Secondary Stage Students.

Introduction

Critical writing means presenting conclusions in a clear and logical way to convince others. It is the result of a continuous process of thinking, researching, taking notes, reading and writing. This means that information is not accepted at face value (Ataç , 2015). Critical writing is inseparable from critical thinking. Curriculum at the Secondary Level emphasizing the importance of developing students' critical thinking skills, and the key to mature writing is learning to write critically. Without criticism, the texts you read have no life beyond that of the author. The problem with critical writing is how to teach learners to write critically. Online annotation can be a useful tool for students to learn critical writing. It is an active learning strategy that improves comprehension and store of information. Online annotation tools will not only uncover pattern to the text but also notice

important words, and identify main points. It can be used to add information to text, an image, a database, or any other piece of content. Through online annotation students will be able to collaborate and discuss. However, there are few researches available concerning the effectiveness of using online annotation tools in developing the EFL critical writing. The present study investigated the impact of an online annotation tools-based program on enhancing EFL secondary stage Students in critical writing skills.

Background of the Problem

Critical writing is essential part in learning. It helps students analyze and evaluate information and use it to build own arguments. Critical writing means presenting conclusions in a clear and logical way to convince others. It is the result of a continuous process of thinking, researching, taking notes, reading and writing. This means that information is not accepted at face value (Ataç, 2015). Wallace & Wray (2011) assured that the skill of self-critical writing lies in convincing readers to accept claims. It can be achieved this through the effective communication of adequate reasons and evidence for these claims. In spite of the importance of critical writing a number of studies indicated that students have low level in critical writing (Christzer, Pablo, Candy & Lasaten (2018); Abdul kareem 2013). This study tries to help secondary stage students improve their critical writing skills through online annotation tools.

online annotation tools can be used in language teaching and learning in general and in teaching and learning critical writing in specific. Bottoni, Livialdi and Rizzo (2003) reported that these tools support cognitive development by adding questions, comments, or critical notes highlighting information to remember, do collaborative work, and support discussions related to the text. According to Burghardt (2012), there are plenty of annotation tools available online that differ in terms of software usage and the annotation method they include (images, spoken or written text, audio or video files), as well as special features and ease of use. Azouaou, Chen, and Desmoulins (2004) suggested that for annotation tools to be effective in an e-learning context, they must be chosen correctly, considering usefulness, share ability, and ease of use.

Online annotation is a viable means for improving critical writing skills. Several works as (Zarzour and Sellami, 2017, 2018) shed the light on the impact of social annotation on learner achievement in undergraduate computer science courses. Overall, social annotation is popularly used in classrooms to support student engagement with domain-specific materials

In order to provide an evidence for the problem of the study, the researcher conducted a pilot study to determine students' critical writing level. A critical writing test (CWT) designed by the researcher was administered to a sample of sixty (60) first secondary stage students from Monshaat El Salaam Secondary school validated by EFL senior teachers and English supervisors.

Table (1)

No.	Critical writing skills	Mean	S.D	Percentage
1	Criticism	1 .4	0.5	48.4%
2	Support evidence	1 .9	0.7	65.1 %
3	Management	1 .7	0.8	59%
4	Evaluation of arguments	1 .5	0.5	53%
Total		6.7	1 .8	56.4

Table (1) shows that the mean score of the writing test is (6.7), which is considered an indication that the pupils need to improve their critical writing skills (criticism- Support evidence- management- Evaluation of arguments).

Analyzing the results, the following points can be concluded:
1. Most students had problems in critical writing skills.
2. Students considered critical writing as a difficult component.
3. Students realized the importance of critical writing as a course of their study.
4. The students often remain intimidated and unmotivated to handle writing tasks and they face multitude of obstacles because learners have poor learning background in critical writing. Thus, this study is an attempt to improve critical writing skills through online annotation tools.

Statement of the problem

Based on the literature review, results of the pilot study, and the experience of the researcher as EFL teacher, the problem of this study can be stated as follows:

First secondary stage students' level in critical writing is low. They lack the skills of criticizing, providing supporting evidence and evaluating arguments. Their low performance could be due to the traditional method and strategies of teaching critical writing. The researcher proposes employing online annotation tool to improve students' writing.

Questions of the study

This study was an attempt to answer the following main question:

1. What are the EFL critical writing skills necessary for first year secondary stage students?
2. What are the online annotation tools necessary for enhancing critical writing skills of first secondary stage students?
3. What are the features of program based on annotation tools to enhance secondary stage students' critical writing skills?
4. What is the impact of the suggested program on enhancing secondary stage students' critical writing skills?

The Purpose

The current study aimed at:

Determining the effectiveness of a program based on annotation tools to enhance first year secondary stage students` critical writing skills.

Delimitations

This study was delimited to:

1. Participants from EFL 1st secondary stage students at Monshaat El Salam school 60 students (30 male and 30 female).
2. Some of EFL critical writing skills necessary for 1st secondary stage students (criticism, the support of evidence, management, evaluating of argument)
3. Some online annotation tools for improving critical writing skills for 1stsecondary stage students (Diigo,Kami).

Significance

The present study hoped to contribute to:

1. Directing the attention of EFL teachers to the importance of using online annotation tools in improving teaching critical writing skills.
2. Paving the way for other researchers to investigate the effectiveness of using online annotation tools in improving other language skills
3. Motivating teachers to use online annotation tools.
4. Helping students to write critically and reduce reliance on traditional methods in learning.
5. Assisting students themselves through raising their awareness of the recent learning methods to develop their critical writing skills.

Definition of terms

Critical writing skills

Critical writing in response to text—that is, the ability to interpret and evaluate texts, construct logical arguments based on substantive claims, and

marshal appropriate evidence in support of these claims is fundamental to academic success , 2010; National Commission on Writing, 2003).

For the purpose of the study critical writing (CW) is defined as intellectual activity based on logic, evidence and persuasion where unclear and common points of view have no place within this type of serious work. No emotions, no opinionated attitudes, or weak evidence, no readymade authoritative assertions are allowed in critical writing.

Online annotation

(Ovsiannikov et al., 1999; Wolfe, 2002) showed that technologies regularly involve highlighting or some form of anchoring of the relevant text, often in combination with opportunities to include written comments as marginalia, inline comments, footnotes, threaded discussion etc.

For the purpose of the study online annotation tools can be defined as they are technique used to add a note by way of comment, explanation or removing information from a Web resource without modifying the resource itself.

Review of Literature

Critical Writing Skills

Critical writing can be seen when one person has a different way of thinking than the other (Smith, 2013). Krouchin (2016) considered critical writing a form of critical thinking, which is consistent with the more general assumption that writing thinks. She stated that developing ideas in writing is the biggest problem students face. Students can learn grammar, vocabulary words and even how to organize articles. In other words, being able to think clearly and form judgment is the most difficult thing for them.Al-Sharadjah (2014) stated that writing is a means by which students can express their critical thinking when students are trained to consistently use critical thinking techniques in writing.

According to the University of Sheffield Dream (2020), critical writing is writing that analyzes and evaluates information, usually from multiple sources, in order to develop an argument. A mistake many novice writers make is assuming that everything they read is true and that they must agree with it, because it has been published in an academic text or journal. Critical writing is participation in an academic debate. It requires "a refusal to accept the conclusions of other writers without evaluating the arguments and evidence they provide" (University of Leicester. Learning Development Centre, 2013).

Smith (2015) pointed out that critical writing is a thinking process in which an individual reviews all available information and viewpoints on a

particular issue on the basis of evidence, argument, and conclusion. In a negative way it is just making sure to consider all sides of the argument.

For example, in reading there are different authors with different points of view. It is the task of the critical writer to take into account all these views in his article to show awareness of all the issues connected with his subject. For Braun (2014), critical writing involves students' ability to develop perspectives on the work of others.

Kilani and Moqatash (2012) stated that critical writing is essential for developing thinking and communication. Critical writing needs to develop arguments or points of view using reasons, examples, and information from sources . Furthermore, critical writing is an engagement in an academic debate. It requires refusing to accept the conclusions of other writers without evaluating the arguments and evidence they present (University of Leicester, Learning Development Centre, 2013). Critical writing is written, repetitive, responsive and systematic writing. Critical writing includes the stages of the writing process (brainstorming, drafting, reviewing, editing and publishing or sharing). Critical writing received its name because it requires its author to apply and demonstrate critical analysis while writing on a particular topic (University of Cumbia, 2017).

Critical writing is how to present an effective argument through a written piece (Charnock, 2010). This means learning how to present evidence, ideas, and perspectives in a clear and well-organized manner. Different formats (eg essay, report, thesis, projects, etc.) mean that the argument is presented in different ways but will always lead to a logical conclusion which is the main gist of any writing purpose. Based on what was previously mentioned, it is clear that critical writing is based on reasoning ,evidence and persuasion as there is no place for ambiguous and shared views within this type of serious work. There are no emotions, chaos, or poor evidence, and no ready-made assertion is permitted in critical writing.

Online annotation

Annotation is described as a normal human activity that is used in daily life as a part and parcel of the reading activity (O'hara & Sellen, 1997). Kirwan (2010, p. 5) considered reader margins (annotations) as: "the most direct response, and reaction to a text, that can feasibly be considered" to study the relationship between reader identity and text. Annotations Indicate to notes or glossaries that readers make for themselves, such as what students make when reading texts or researchers create when noting references, they plan to follow (Wolfe, 2002).

Marshall et al (2016) also specified that annotation is a practice handwriting that links the two skills; reading and writing. This means that annotation helps learners understand what they are reading and guide them to do writing activity.

Furthermore, Kirwan et al (2016) added this annotation connects readers or learners to text and meaning. It also reflects responses based on their personal individuality to the text. It can be deduced annotation to enhance reading comprehension by engaging readers or learners in the text.

Web annotations can be used to help learners cross the limits between learning spaces (formal and informal) to make learning experiences more united, enjoyable and personally meaningful. According to (Kirwan, 2010), annotations provide the link between the reader, the text and meaning and reflect the individual personality of the commenter's responses to the text. Building on this subjective relationship, the author suggested extending the psychology-based reader theory to the reader's annotation practices. Annotation has been used in various educational fields as an aid in the learning process. The most common way to use annotations is to prepare group annotation assignments under the supervision of a teacher who gives students instructions on how to carry out the annotation process (Buendía, 2016).

O'Donnell (2004) assured that annotations are writing to learn a strategy for use while re-reading. Annotations help readers reach a subdued level of engagement and promote active reading.It engages the reader in the text and responds to a visual record of the ideas that emerge during reading comprehension

Importance of online annotation

Annotations help build a better comprehension of texts and stories. When he /she comments, he /she is forced to evaluate what the story is saying, and generate a clear picture. Annotations make reading clearer, and help remember background information. Annotations benefit not only individual learners, but also groups of learners. Sharing annotations can promote beneficial interaction between groups of learners. Readers can benefit from the ideas and standpoints in other readers' annotations, and writers can benefit from feedback from readers (Wolfe & Neuwirth, 2001). Shared annotations can enhance teacher and student interaction (Xin & Glass, 2005; Xin, Glass, Feenberg, Bures, & Abrami, 2011). Web annotations can be used to help learners cross the limits between learning spaces (formal and informal) to make learning experiences more united, enjoyable and personally meaningful.

Annotations help the student to support and add content to ease understanding. It improves and regulates learning outcomes. Annotations also include writing notes in the margin or coding the text to point out places of interest or something they do not understand. Students sometimes annotate by surrounding or underlining a word or highlighting a sentence

Online Annotation Tools

Online annotation tools have been developed to simplify annotation and interaction with digital data by means of a web annotation system, which allows users to change, add or link any type of content to any online resource, such as in a paper document(Kawase, Herder, and Nejdl,

2009).Glover, Xu, and Hardaker (2007) defined online annotation tools as systems that supply mechanisms that allow readers to interact (in a synchronous or asynchronous manner) and to take notes on online texts; Thus, simplify deep reading and acquiring new levels of knowledge. Diigo and kami are online annotation tools of this study .

1.Diigo

Collect and Highlight, Then Remember. It is one of the most widely used free annotation tools on the web that allows user to bookmark and tag web pages. In addition, it enables users to highlight a part of the webpage to emphasize something and associate sticky notes to it. One of the best features of Diigo is the ability to comment on other users' feedback which can be set to either public or private.

2.Kami

An easy tool for pinning annotations to collaborative annotations. Kami is a one-time addition to the browser in the form of an extension. Extensions are additional tools that can add to increase the functionality of the browser. After teacher and students have installed Kami on Chrome or Firefox, it is simple to annotate and share any pdf file. Kami documents are stocked in Kami Cloud or on Google Drive.

Related Studies

Bottoni, Livialdi and Rizzo (2003) reported that these tools support cognitive development by adding questions, comments, or critical notes highlighting information to remember, , doing collaborative work, and supporting discussions related to the text. According to Burghardt (2012), there are plenty of annotation tools available online that differ in terms of software usage and the annotation method they include (images, spoken or written text, audio or video files), as well as special features and ease of use. Azouaou, Chen, and Desmoulins (2004) suggested that for annotation tools to be effective in an e-learning context, they must be chosen correctly, considering usefulness, share ability, and ease of use.

Atan(2017)aimed to systematically build students' ability to write cohesively with a set of learning design that leveraged the affordances of online annotation tool. It was conducted in 10 schools by 12 teachers to 300 Primary 4 Malay Language students age 10 years old in 2016. It was designed to address the lack of writing skills in students to connect their ideas in a cohesive manner as lamented by teachers. The tool enabled highlighting and making comments to online compositions, thus supporting collaborative learning and peer evaluation which enabled improvement on pupils' own compositions. Findings approved technology such as online

annotation tool was leveraged to improve students' ability to write cohesively.

Khalil and Said (2019) investigated the effect of a program based on brain-based learning and emotional intelligence on developing some EFL critical writing skills of secondary school students. An EFL critical writing test, and a program based on brain-based learning and emotional intelligence were designed by the researcher. The result showed that the program based on brain-based learning and emotional intelligence was effective in developing the experimental group students' overall critical writing skills and each sub-skill.

Ahangari and Sepehran (2014) investigated the effect of intertextuality on critical writing of learners of English as a foreign language in Iran.80 female ESL learners at Iran Language Institute were selected as a community for this study. All learners were at an advanced level of language proficiency and attended English lessons twice a week. The results of this study showed that reading and film, as textual overlapping elements, have a positive effect on the critical thinking of EFL learners, enabling them to reflect this in their critical writings.

Megyesi,Nasma, Palmʹe(2016)presented a corpus of student writings (essays) written in Swedish by native speakers of swedish or learners of Swedish as a second language from various age groups, with different genders and grades awarded. The texts are annotated at various linguistic levels, from part of speech and morphological features to universal dependencies. The corpus is intended to be a monitor corpus, allowing new essays to be uploaded, and automatically processed. The result assured that tools based on language resources and language technology available and ready to use for scholars of all disciplines, particularly the humanities and social sciences.

Few studies targeted the use of annotation to enhance the critical writing skills. Liu (2006) explored how annotation as a tool or strategy can help a learner understand textual information. Participants consist of 40 students from urban areas in the United States. The results indicated that skilled annotators generated more analytical and critical writing samples than literal commentators. The findings are consistent with theories that promote explicit metacognitive skills and boost the situation that teaching rules aligned with students' cultural backgrounds are more likely to reinforce critical thinking reflected in writing critically.

Mohammed(2020) developed critical writing skills for 2nd year secondary school students through using scaffolding with online tasks.

Participants of the study were randomly selected and divided into two groups. The study employed a critical writing skills test and a critical writing skills rubric. The necessary critical writing skills for 2ndyear secondary school students were determined through the use of a checklist approved by a juryof specialists in teaching EFL. The result showed a large effect size on developing the critical writing skills through online scaffolding tasks.

In this study, the purpose of Diigo and Kami as online annotation tools is to enhance and improve critical writing skills. To achieve this purpose, the research adopted the quasi experimental design using a pre-post test with two intact groups. The experimental group was taught through an online annotation tools-based program to develop the critical writing skills and the control group was taught through the regular methods specified in their text book and teacher's guide. The two groups were pre- post tested to determine the impact of the program. Participants in the present research were sixty (n=60) first year secondary school students, selected from two classes in Monshaat AlSalam secondary school, Dakahlia governorate. The research findings showed that there is statistically significant difference at (0.05) level between the mean score of the experimental group students (using online annotation tools) and those of the control group students (using traditional way) on the post critical writing test .This significant difference is in favor of the first experimental group.

Hypotheses

The present study tested the following hypotheses:

1. There is a statistically significant difference at 0.05 levels between the mean score of the control group and experimental group on the post administration of critical writing test in favor of the experimental group

2. There is a statistically significant difference at 0.05 level between the mean score of the students of the experimental group on the pre- and post- administrations of the critical writing test in favor of the post test.

Methodology

Participants

Participants in the present research were sixty (n=60) first year secondary school students, selected from two classes in Monshaat AlSalam secondary school, Dakahlia governorate .Those participants were divided into two groups: the experimental group and the control group.

Design

The research adopted the quasi experimental design using a pre-post test with two intact groups. The experimental group was taught through an online annotation tools-based program to develop the critical writing skills and the control group was taught through the regular methods specified in their text book and teacher's guide. The two groups were pre- post tested to determine the impact of the program

Instruments

The present research aimed at developing first year secondary students' critical writing skills. For achieving this aim, the following instruments were designed and used:

- An EFL critical writing questionnaire to determine the critical writing skills necessary for first year secondary stage students.
- An EFL critical writing skills test for assessing first year secondary students' critical writing skills.
- An EFL critical writing rubric for scoring students' performance in critical writing skills.

Statistical Analysis and Results

The results of the research are discussed in light of the statistical analysis of each instrument. A discussion of the results is provided after each statistical analysis as well as a discussion of the overall results.

Table (2)
Establishing the homogeneity of the groups

skills	The group	N.of cases	Means	S.D	df	t.Value	Sig.
Criticism	Control	30	2.93	0.254		0.207	0.837 Not Sig.
	Experimental	30	2.90	0.845			
Support evidence	Control	30	2.67	0.547		0.761	0.477 Not Sig.
	Experimental	30	2.53	0.860			
Management	Control	30	2.60	0.724	58	-0.954	0.344 Not Sig.
	Experimental	30	2.77	0.626			
Evaluation of arguments	Control	30	2.30	0.535		-1.263	0.211 Not Sig.
	Experimental	30	2.50	0.682			
Total degree of Test	Control	30	10.50	1.106		-0.442	0.660 Not Sig.
	Experimental	30	10.70	2.215			

It is evident from the results of table (2) that there are no statistically significant differences between the mean scores of the students of the experimental and control groups in all the skills of the critical writing skills test in the pre-application and in the total score of the test, as all the values of (t) were not statistically significant. This means that the two groups are homogeneous before applying the program to them. This result indicates that the students were at the same level before the implementation of the proposed learning program.

Results

Statistical analysis of the present research was conducted using Statistical Package for the Social Sciences (SPSS), *t*-test to test the difference between pre and posttest of the mean score of the experimental group and between the experimental and control groups mean score of the post-test administration. Eta square value ($\eta2$) was also used to investigate the effect size of the experimental treatment upon the development of CW skills.

Testing the Hypotheses

Hypothesis One

The first hypothesis stated that *"There is a statistically significant difference at (0.05) level* between *the mean score of the experimental and the control group students on the post-administration of the Critical Writing skills test in favor of the experimental group."* In order to verify the first hypotheses the researcher used the descriptive statistics and the (t) test to compare the critical writing performance of the two groups on the post critical writing test .

Table (3)
Comparison between the control and the experimental groups on the post administration of the Critical Writing skills Test

skills	The group	N.of cases	Means	S.D	df	t.Value	Sig.
Criticism	Control	30	3.03	0.183		- 19.949	0.01 Sig.
	Experimental	30	5.77	0.728			
Support evidence	Control	30	3.13	0.629		- 13.341	0.01 Sig.
	Experimental	30	5.83	0.913			
Management	Control	30	2.90	0.712	58	- 19.154	0.01 Sig.
	Experimental	30	6.47	0.730			
Evaluation of arguments	Control	30	2.77	0.679		- 14.532	0.01 Sig.
	Experimental	30	5.40	0.724			
Total score of Test	Control	30	11.83	1.020		- 37.978	0.01 Sig.
	Experimental	30	23.47	1.332			

Results in table (3) show that the level of the experimental group is higher than that of the control on the post-test. All values of (t) are statistically *significant* at the level of significance (0.01) and a degree of freedom = 58. These results agree with or confirm the first hypothesis. These results indicate that the experimental group outperformed the control group in all individual critical writing sub-skills and in the total test score. The first hypothesis was confirmed.

Hypothesis Two

The second hypothesis stated that*" There is a statistically significant difference at (0.05) level between the mean score of the experimental group students on the pre- and post- administrations of the Critical Writing skills test in favor of the post- administration."*

The following table presents comparison between the experimental groups' pre and post administration of the critical writing test.

Table (4)
Comparing the critical writing performance of the experimental group pre and post on the critical writing test

skills	Practice	N.of cases	Means	S.D	df	t.Value	Sig.
Criticism	pre – test	30	2.90	0.845		-12.825	0.01 Sig.
	post – test	30	5.77	0.728			
Support evidence	pre – test	30	2.53	0.860		-17.683	0.01 Sig.
	post – test	30	5.83	0.913			
Management	pre – test	30	2.77	0.626	29	-19.203	0.01 Sig.
	post – test	30	6.47	0.730			
Evaluation of arguments	pre – test	30	2.50	0.682		-17.211	0.01 Sig.
	post – test	30	5.40	0.724			
Total degree of Test	pre – test	30	10.70	2.215		-28.599	0.01 Sig.
	post – test	30	23.47	1.332			

It is evident from table (4) that the score of the post- critical writing test is greater than that of the pre-test. Clearly, the total score of the experimental group on the pre- critical writing test was low (10.7 0) and it has been increased in the post-test to become (23. 47). This means that there

is a statistically *significant* difference between the mean level of the pre and post- critical writing test in the four sub-skills and its total score of the experimental group in favor of the post-administration. All t- values also are statistically significant at (0.01) level. The raise in the mean value of the experimental group in the post-test reveals that the level of students in overall critical writing had been gotten better due to using online annotation tools program.

Estimating the Effect Size (η 2)

In order *to* calculate the effect size of the proposed program, the researcher used the effect size scale (Π 2) as shown in Table (5), and Fouad Abu Hatab and Amal Sadiq (1991: 442) mention that there is a rule based on experience suggested by (Cohen) to evaluate the effect of the independent variable on the dependent as follow :

$$\eta^2 = \frac{t^2}{t^2 + df}$$

Table (5) below illustrated the size of effect of the online annotation tools program on the experimental group critical witting performance.

Table (5)
Values of (η^2) and the effect size of the treatment

Skill	η²	Effect size
Criticism	85 %	High
Support evidence	91.5 %	High
Management	92.7 %	High
Evaluation of arguments	91.1 %	High
Total degree of Test	96.6 %	**High**

Table (5) indicated the high effect of the online annotation tools program on the students' level in the critical writing skills.

Results demonstrated the high effect size in the critical writing skills.

1. 85% of the total variance in Criticism can be attributed to the program based on the online annotation which points to the significant effect of the program.
2. 91.5% of the total differences in the skill (support evidence) can be accredited to the program based on the online annotation), and this indicates the significant effect of the program.
3. 92.7% of the total divergence in the skill (management) can be accredited to the significant effect of the program based on the online annotation.

4. 91.1% of the total differences in the skill (Evaluation of arguments) can be accredited to the significant effect of the program based on the online annotation.

5. 96.6% of the total variance in the total score of the critical writing skills test (Total degree of Test) can be accredited to the considerable impact of the program based on the online annotation.

Test Time

The time of the EFL critical writing test was estimated in the following way: (30+50)/2=40 minutes

Thus,40 minutes would provide appropriate time for students to answer the test. Moreover, piloting the test proved that its language was clear to the 1 st grade secondary stage students and that there were no difficulties included in the test. Consequently, the final version of the test was considered ready to be applied on the main participants of the study.

Discussion of Results

Results illustrated above revealed that there is an obvious improvement in the experimental group students' CW skills as illustrated by the post administration of the CW test. This significant improvement is due to the implementation of the online annotation tools program to the experimental group. The use of technology made the lessons more interesting than teaching traditionally. This was supported by the participants' opinions who believe that they can use online annotation tools to be more creative to complete critical writing activities. Additionally, the interactive environment provided by online annotation tools and the resources that can be added make the assignments more enjoyable, interesting, and appealing. Online annotation tools program is also considered a user-friendly and intuitive tool that allows teachers and learners to provide and receive feedback.

According to the tables presented above, the present study reached the following results:

- Using online annotation tools program was effective in enhancing students' CW skills. The previous results and discussion led to conclude that EFL first secondary grade students' critical writing skills have been improved. The experimental treatment (using online annotation tools) was effective in improving students' critical writing skills.

- There is a statistically significant difference at 0.05 level between the mean scores of students of the control and experimental group in the pre-post-test of CW skills in favor of the experimental group.

This was apparently observed by the researcher and proved by previous studies conducted by Liu (2006) indicated the relationship between online annotation tools and critical writing can help a learner understand textual information. The findings are consistent with theories that promote explicit metacognitive skills and boost the situation that teaching rules aligned with students' cultural backgrounds are more likely to reinforce critical thinking reflected in writing. Mohammed (2020) developed critical writing skills for 2nd year secondary school students through using scaffolding with online tasks. The result showed a large effect size on developing the critical writing skills through online scaffolding tasks. Moreover, results of enhancing critical writing through online annotation tools in the current study are the same of some studies like Chi& Huang (2014), Megyesi &Nasma & Palm´e ,(2016), Atan(2017) and Walker(2019)

In addition to the statistical/quantitative results, the following qualitative analysis could be revealed:

The clear and systematic stages of the program helped the students to follow the instructor and to know what they were supposed to do in each stage. Students were given the chance to ask questions, get feedback, and use their sense of humor the thing that made them behave normally. These observations led to the following results:

- The students of the experimental group were more excited about discussing their articles during the sessions even for the low achievers compared to the control group.
- During the implementation of the program was that students share their strengths through help each other and make good use of their ability.
- Students enjoyed the challenge best suited to their ability level and increased motivation and overall performance.
- Reinforce the concept of students working in groups, an environment where collaboration and better results are valued.
- Many of the control group students had few opportunities to practice group work as one team. They did not have enough opportunities to gain deeper levels of understanding.
- The control group students felt that the teacher did not appreciate their ability, which led to poor educational performance and failure of lesson objectives.

Recommendations of the research

Based on the results and conclusions of this study, the following recommendations are suggested:

For Learners
1. EFL teachers should train their students in the use of online annotation tools in critical writing.
2. It is necessary that teachers urge their students to use online annotation tools in studying and in summarizing other courses of study.

For Teachers
1. EFL teachers should hold workshops and mini conferences to share experiences and discuss new methods in teaching critical writing.
2. EFL teachers should train their students in the use of the various types of online annotation tools.
3. EFL teachers should expand an appropriate and healthy climate and an interactive environment is essential for productive and effective learning.
4. A friendly relationship between teacher and students is necessary to fill thinking gaps and build trust between them.

For Curriculum Designers
1. Curriculum designers should make use of online annotation when developing EFL courses and designing English curricula.
2. New techniques for enhancing critical writing skills and teaching effectiveness should be explored and exploited, so that language learners will be able to make their way more easily to their proficiency goals

Suggestions for Further Research
The following points are recommended to be considered for further research:
1. Designing other online annotation tools for developing other language skills than critical writing.
2. Exploring the effectiveness of online annotation in developing the academic achievement of the students of special needs.
3. Duplicating the experimental treatment on larger samples

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