Impact of Technology-facilitated Writing Tools on Enhancing EFL/ESL Students' Essay Writing Productivity and Creativity.

Osama Mudawe Nurain, Ph.D.

English Department, College of Arts & Humanities, Jazan University, KSA

onurain@jazanu.edu.sa

osamanurain@hotmail.com

Abstract

The fast-paced technology-enhance Language Learning (TELL) has much contributed to the ways in which languages are taught. TELL creates abundant resources and applications in which their contributions to the field of language teaching and learning cannot be margined. These potentials have been used in fostering students learning by creating many opportunities for learners to test their own learning experiences. EFL/ESL practitioners have experienced new, vibrant, and innovative strategies for enhancing their teaching and learning experiences. The primary objective of the study is to probe into the potential of technology-facilitated writing skills for enhancing EFL/ESL students' essay writing skills and how these tools could promote their writing creativity and productivity. The study adopted the quantitative research method in which two distinct sets of instructions were employed. Participants involved in the study were taught in two discrete teaching environments. The analysis of data reveals that there are statistical differences between the students' achievements in favor of experimental groups. The integration of online reference tools remarkably facilitated and empowered students' collaboration throughout the writing process. Consequently, incorporating online reference tools has presumed a significant and decisive role to play in EFL/ESL essay writing classes.

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Introduction

The purpose of learning a language is obviously to maintain and establish a real connection between people from all walks of life. Often people communicate in written and spoken format to convey their thoughts, and feelings and express their personality in simple and clear manners. These kinds of communication take mostly a form of written communication, especially in the age of the digital world, where communication-based tools and applications capture a prominent place in fostering communication. Social media is living proof that consolidates the necessity of having a profound grasp of written skills to get in touch with the whole world. This is because the posted messages on Facebook, for instance, target audiences who are far behind the limitation of time and space. The purpose of writing itself has shifted from the convenience of writing to teachers or peers to include communicating with a wide range of audiences as they participate in key pal projects, for instance. Tweeting/retweeting or posting comments has become one of the most frequent activities of people, especially younger ones. As a result of these practices, students' writing proficiency has to be improved to meet the standard of being able to communicate in different linguistics, ethnic, and cultural diversity through technology.

The spreading of technology around the globe has dramatically changed how people from all walks of life communicate with each other. These changes have been observed in the tendency of people to use more innovative and sophisticated means to enhance communication. Computer-mediated communication (CMC) has been recognized as a genre of technology that is flourishing at a stunning rate to facilitate communication. CMC provides two primary channels for communication: Asynchronous (takes place in a delayed fashion) and Synchronous (takes place in real-time). Most of the communication-based tools are designed based on the scope of CMC. Social media, as one of the most popular means of communication, provides Asynchronous and Synchronous communication to

connect people worldwide. These communication-based tools have reinforced the writing process as a vital tool for better communication. People around the globe tend to communicate through e-mail, chat rooms, and social media regularly. These new practices have dramatically changed the concept of teaching and learning, particularly for writing skills.

Furthermore, publishing online through blogs, and wikis, required a mastery of the fundamental aspects of writing skills. Why writing matters has been a focused area for persisting debates around the globe. Everyone is concerned about how writing skill has become more critical and challenging as technology-facilitated communication keeps moving at a stunning and impressive rate. These new practices have promoted the role of written format as a vital means of communication. Having a profound grasp of the fundamental aspects of writing would grease the wheel of communication. As the communicated written piece is capable of conveying the intended message; hence, it could be said that writing has the power to successfully good writing add power and efficiency to expression. Landham (1993, p. 12) noted, "The students we teach are going to do most of their writing and much of their reading on an electronic screen. They are going to live-they live now- in a world of electronic texts."

The prevalence of CMC, a genre of Computer-Assisted Language Learning (CALL), in the scene of teaching foreign languages, has significantly transformed the conventional methods of how classroom instruction is delivered into state-of-the-art strategies and methodology. According to Pourhosein (2017):

> The method of English language teaching has been considerably changed due to the entry of technology. Technology offers a lot of benefits as making teaching interesting and more productive in terms of advancements. The use of technology helps learners get involved and learn based on their interests. (p. 95).

These new challenges have compelled language teachers to rethink their pedagogical sound practices to cope with the ever-changing needs of their students. Moreover, enormous research articles have consolidated the reality of using technology in fostering language teaching/Learning. (Warschauer, Shetzer and Meloni, 2000; Egbert, 2005; Goodwin, 2012; Mahrooqi and Troudi 2014). These types of research and studies have contributed to exploring the role of Computer-Assisted Language Learning (CALL), the most generic and simplified term used frequently for representing the use of technology in English classes, in developing EFL students' essay writing. These new practices have offered an abundance of learning opportunities for students to test their learning experiences through collaboration and cooperation in the essay writing process in and out of classes to promote their written productivity. Furthermore, these new practices are extended to include the fostering of collaborative and cooperative learning among students in an ever-interesting and relaxing environment. Patel (2013, p.116) points out, "Technology provides so many options as making teaching interesting and also making teaching more productive in terms of improvement." Besides, technology-enhanced language learning has created a paradigm shift in conceptualizing the role of teachers and students in the learning process. Students tend to have full control over their learning while teachers are supervising and monitoring their progress.

In the teaching writing context, language teachers make use of different technology-based applications and resources to enhance students' essay writing skills at various stages of the essay writing process: organization, style, content, and grammar. These tools facilitated writing support students in developing their initial draft and working on suggestions for improvement as they collaborate with their classmates and teachers.

The focus of this study revolves around investigating the capabilities and potentials of online reference tools and resources in developing EFL/ESL students' essay writing skills. These tools are explained in more detail showing how they can be integrated with the methods of teaching and learning.

Literature Review

Why Writing Matters?

The importance of writing skills in different fields of knowledge can be apparently observed in the many contributions of Huckin & Olsen (1991, p.3) who reported; "For many technical professionals, the ultimate product of their work is a written document. If that document is badly written, it reflects badly not only on the individual involved but on the entire organization. Organizations know this, of course, and sometimes we are hiring and promotion decisions on writing ability". In the same regard, Ellis (1989, p. vii) points out; "there are firms that exist solely because of gaps in writing skills by men and women in the scientific and business communities". In the same context, Al-Mutawa and Kilani (1989, p.125) stated: "Writing is an active means of communicating ideas. In its functional sense, it is equated with speech since both are concerned with conveying information". Also, Zhu (2002) explain

> While listening and speaking skills are essential for effective communication in any situation, writing constitutes another powerful tool, allowing second-language learners to perform a variety of language tasks, ranging from leafing a note for a friend to answering an essay question exam or preparing a research report. (p. 94)

Identifying the needs of students and stating purposes, would greatly help teachers to decide upon which materials, methods, and strategies have the capacity to create a meaningful and collaborative teaching environment where the construction and negotiation of meaning are profoundly enhanced.

CALL and EFL/ ESL Instructions

The pervasive dissemination of information technology in EFL/ESL settings has taken a new paradigm shift. Technology-supported instruction has started to play a massive role in reshaping the ways in which teaching and learning have to be. These drastic instructional changes introduce innovative and state-of-the-art strategies and tactics in modeling instruction. Since the implementation of technology, various concepts have emerged

through different historical stages. Educational technology, Computer-Assisted Language Learning (CALL), technology-enhanced instruction, Web-based Instruction, and e-learning are the most familiar concepts in which they are used interchangeably in different instructional settings. However, the philosophy of all these concepts rotated around the reformation of classroom instruction under the umbrella of technology integration. Computer-assisted Language Learning (CALL) as one of these concepts, has gained more popularity among English language practitioners. CALL has passed through different historical stages. Each stage is characterized by the mode of teaching dominated in that era. Structural CALL was mainly designed to follow the prominent behaviorism mode of teaching which was based on keeping by heart a prefabricated form and a set of rules. Repetition is the central concept in their methodology if it is not the cornerstone of the learning process. The theory, however, was consolidated on the assumption that language learning can be acquired via a series of habits. Based on that, the first stage of CALL software was designed to provide only great drills and practices. (Warschaure and Kern, 2000; Taylor, 1980). The second generation of CALL is known as Communicative CALL. This stage emerged, in the periods 1980s-1990s, (Krauss, 2000) as direct opposition to the behavioristic approach at the pedagogical level. Communicative CALL was mostly based on the assertion of the cognitive theories which claim learning could be more efficient if it relies on previous knowledge as a base for developing new understanding. Exploration, observations, and discoveries were essential elements in the process of constructing knowledge. Warschaure and Kern, (2000, p. 9) stated "In line with cognitive-constructivist views of learning, the next generation of CALL programs tended to shift agency to the learner. In this model, learners construct new knowledge through the exploration of what Seymour Pa Pert has described as microworlds, which provide opportunities for problem-solving and hypothesis testing, allowing learners to utilize their existing knowledge to develop new understandings".

The last generation of CALL is known as Integrative CALL. This stage has been recognized as the most critical juncture ever of the use of a computer for language learning

and teaching. It has witnessed the invention of the Internet and later the World Wide Web which is described as the cream and the butter of Internet technology.

Integrated CALL is also known as the Socio-Cognitive Approach to CALL. It represents the last stage of Computer-Based Instruction. This stage is primarily based on socio-cognitive theories which claim that language learning takes place most successfully in a social setting through communication. At this stage, the teacher's role has completely altered from a source of readymade knowledge to a supporter and facilitator. Hence, they should create authentic materials to help them present their students with ample opportunities to practice English and create environments that resemble real-life situations. Krauss (2000) reported, "This integrated CALL form of Call is likely to utilize the Internet in content-based frameworks to encourage real-life tasks. It will not be sufficient to utilize computers to encourage communication simply. Rather, teachers will engage students in utilizing technology to plan and carry out meaningful tasks and to solve problems which are relevant to student's personal, academic and professional goals". The era has also witnessed the emergence of computer-mediated communication (CMC). The concept is related to the use of internet tools and resources in maintaining diverse types of communication among people from different parts of the world. According to Warschauer, Shetzer, and Meloni (2000, p. 2); "Computer-Mediated Communication (CMC) refers to communication that takes place via networked computers." Two types of communication have been identified as Asynchronous and Synchronous. The first one, as the term implies, provides a delayed sort of communication. That means communicators do not need to be available at the same time. The best example of these type of communication is email and bulletin boards. The second category provides communication in real time. Communicators are supposed to be available at the same time when instant verbal and written messages are being communicated. This communication is the most popular among people as they communicate for different purposes in mind. Facebook, video conferencing, and Skype, for instance, are the best types of Synchronous computer-mediated communication.

Although all these technologies are invented for purposes other than enhancing instructions, extensive research has discriminated against the idea that the concept of using technology as a tool for enhancing foreign language instruction has added new vibrant tactics and strategies in the last two decades. Tremendous resources and tools have already been implemented in English classes to foster students' language skills and proficiency.

Technology-facilitated Writing Instruction

Recently, many technology-based writing skills have made distinct contributions to the development of the writing process. Tremendous studies have been carried out to investigate the potential of state-of-art technology in fostering writing instructions. (Caute, 2019; Ferdousi, 2022; Little et al., 2018; Ghahri et al., 2015).

Technology use in EFL settings has advocated a number of web-based applications, which could be used to help students develop their writing proficiency, consistency, and creativity. These tools are known as Writing-Facilitative E-tools. (Erben, Ban, and, Castaneda, 2008). Massive studies conducted in the area have shown extensive capabilities and potentials of technology-facilitated writing tools in teaching writing skills. However, the proper use of all these applications still requires a profound grasp of theoretical knowledge and conceptual framework for implementation. The following section provides a detailed description of the most frequently used e-tools in fostering essay-writing instructions.

Google Cloud Speech-to-text Tools

Every now and then, Google corporations empower teachers and researchers with state-of-the-art technology that has great potential for teaching contexts. Speech-to-text is the latest technology based on artificial Intelligence (AI) that provides voice recognition and transcription with the possibility to convert into texts quickly and accurately. Moreover, it has the possibility to convert spoken language into text without taking the hassle of typing. Speech-to-text has a great impact on developing students' dictation and transcription

experiences. Whisper AI, Speechnotes, and Briana Pro are among the best examples of speech-to-text technology.

Apps for Improving Writing

Writing seems to be one of the most daunting tasks for EFL students. According to them, writing requires cognitive and linguistic skills, which are not easy to acquire. To avoid these attitudes, it is necessary to know how to write effectively. Fortunately, there are some excellent apps that can help learners to write better. These apps are tackling most of the writing barriers associated with grammatical mistakes, lexical choice, clichés, synonyms and antonyms, style, organization, and content to name but a few. The best of these apps are: Ginger, Help Me to Write, Hemingway, Cliché Finder, and Focus writer

Word Processing Program

Word processing program, with its built-in features, is one of the most popular standalone applications which has a remarkable impact on developing students writing creativity. Since the appearance of the Microsoft application, the word processor program has been widely used for editing and revising texts. The purpose of using a word processor as a tool for producing text has been extended to include how it could be utilized as a teaching tool. According to Schultz (2000, p. 121); "With the advent of word processors, the teaching of writing has drastically changed, making the radical revision of texts possible with a few keystrokes." Hence, the use of various features of word processor foster students learning autonomy as they learn' from their mistakes. Moreover, it provides students with a sense of comfort and bolsters students confidence. Szendeffy (2005, p. 31); reported: "Teaching writing using word-processing skills in the lab introduces the fewest unknown variables to a teacher, unlike more complicated activities involving unfamiliar programs and content that might be approached with techniques alien to the conventional classroom." Some of the implications of the word Processing Program as a teaching tool in writing classes provides a range of features which they can be used through the various process of writing, i.e., pre-writing, writing a first draft, revision, editing, and reviewing the final draft.

Bibliography, Plagiarism Detector, and Citation Tools

In essay writing, students sometimes need to support their arguments, disputes, or disagreements to a particular point by quoting someone else ideas to show how their ideas are relevant and well-connected. These practices are common in essay writing classes. However, the issue of providing a proper citation represents a problematic area for students. Technology has facilitated the process of referencing and citing resources through various applications such as Grammarly, Turnitin, and I Authenticate which provide automated checks for students writing essays and manuscripts against fraud and plagiarism to maintain the originality of the written production. These tools have great potential for students to maintain the originality of their works by examining billions of resources in different formats in addition to having proper citations in different styles (APA, MAL, and Chicago). BibMe, Citation Machine, CiteFast, and Citavi are the best examples of free bibliography and citation tools.

Online Dictionaries and Encyclopedia

Dictionaries are the most frequently used resources in English classes. They have significant benefits in tackling students' problems associated with the meaning of words, parts of speech, synonyms, and antonyms. There are excellent dictionaries available for EFL learners to use. These dictionaries are available in paper format and e-format. Whatever, the format is, still both dictionaries serve the purpose of using them. However, there are a lot of differences between them in terms of size, weight, and cost. Dudeney & Hockly (2007, p. 103); have identified some merits of e-dictionaries over paper dictionaries. These include 1) Searchability (which is not alphabetically based), 2) Audio recordings of words, often in both British and American English, 3) Games and exercises, 4) Information on typical errors, 5) The ability to bookmark and personalize, and 6) Thesaurus.

Corpuses

In general, a corpus (plural is corpora/corpuses) represents the massive collection of authentic written and spoken languages stored in specific manners for classroom usage and any other generic purposes. In the context of language teaching and learning, the concept of corpora is very much attached to linguistics and that creates what is popularly known as linguistic Corpuses. Corresponding to ("Corpus linguistics", 2023):

> Corpus linguistics is the study of language as expressed in *corpora* (samples) of "real world" text. Corpus linguistics proposes that reliable language analysis is more feasible with corpora collected in the field in its natural context ("realia") and with minimal experimental interference.

There are enormous types of corpora that are available online. English-Corpora.org is the most widely used website for locating and identifying distinct types of corpora based on a number of words, dialects, time periods, and genre(s). The website (https://www.english-corpora.org/) provides different corpora in which their contribution to English language teaching and learning cannot be ignored. Through methodological perspectives, using corpora in English classes is known as data-driven learning or sometimes known as a corpus-based approach to language teaching and learning. According to McEnery, et al (2006):

> The use of corpora in language teaching and learning has been more indirect than direct. This is perhaps because the direct use of corpora in language pedagogy is restricted by a number of factors including, for example, the level and experience of learners, time constraints, curricular requirements, knowledge and skills required of teachers for corpus analysis, and pedagogical mediation, and the access to resources, such as computers, and appropriate software tools and corpora, or a combination of these. (p. 365).

Johansson (2009, p. 40) has identified the relationship between various elements of the teaching and learning of the English language with the contribution of the corpus as illustrated in Figure 1.
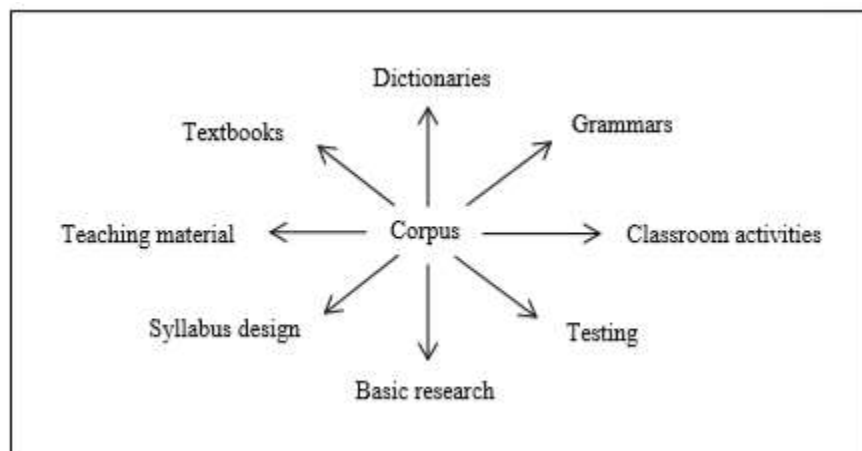

Figure 1: The contribution of Corpus to language teaching and learning

Concordancers

According to concordancesoftware.co.uk, Concordance, text analysis, and concordance software are for anyone who needs to study texts closely or analyze language in depth. Concordance is one of the most frequently tools used for developing students writing skills. of the reference tools which are based on the web. Sometimes. Technically defined, and according to Warshauer & Meskill (2000, p. 4); "Concordancing software (e.g., Monoconc from Athelstan) allows teachers or students to search through small or large texts to look for instances of the actual use of particular words. Concordancers are thus supplements to dictionaries in that they help locate the usage of the word, rather than just its definition." Concordancers software is a widely used reference tool for developing students' writing skills. It can be used to analyze electronic text, indexes, word frequency, and more. Additionally, it can be used in English classes to help students develop their understanding of lexicography and syntactic, as well as to provide context-based vocabulary knowledge and authentic materials.

Thesaurus

A thesaurus is one of the oldest and the most widely used tools provided by computer technology traditionally; A thesaurus can be defined as "a book of words that are grouped together in terms of its associated meaning. Becky & Spivey, (n. d); "A thesaurus is a collection of phrases, concepts, and related words usually alphabetized like a simple dictionary. When you know what a certain word means, but you are looking for a different word to convey that same meaning, a thesaurus is a book you need." Thesaurus is found in many formats; books, as a built-in feature in word processor programs, and online as an independent website www.thesaurus.com. Recent studies have investigated the potential of using a thesaurus as a tool for supporting EFL learners' writing production. (Bazhutina, Marina & Brega, Olga; 2019). According to vocabulary.com. (n. d); "A thesaurus is a reference book (or a really cool website, like the Visual Thesaurus) with an organized list of words and their synonyms." In English writing classes, the use of thesaurus has many implications for developing students writing skills. Learners can have access to thesaurus either offline as it is a built-in feature in word processing programs, but with limited features, or through the website; www.thesaurus.reference.com. The use of thesaurus as a tool for enhancing writing productivity brings a broad range of variations in language and vocabulary usage.

Google Docs

Google Docs is one of the most brilliant applications provided by Google that has great potential to improve students' writing skills. Google Docs has captured a prominent place among enthusiastic teachers as online editors that facilitate students' collaboration in writing projects. One of the most stunning features of it is the possibility of working collaboratively on the same written tasks and sharing ideas through synchronous and asynchronous communication. Recently, a number of articles have been published stressing the necessity of using Google Docs for enhancing students writing skills. (Afdaliah, et. al, 219; Nguyen, & Nguyen, 2022; Metilia & Fitrawati, 2018).

Methodology

Study Design

Although the fast pace of Information Technology has emphasized the role of writing skills in enhancing global communication, yet, most EFL learners are not entirely aware of the effective practices of these vibrant communication tools. It assumed that EFL students are still lagging behind in developing actual writing production. To find abroad spectrum to the scope of the study, the researcher adopted a quasi-experiment approach in which two kinds of different treatments were used and applied and participants were divided into control and experimental groups. It employed a pre-test for assessing students' prior knowledge of the skills required for writing a well-organized essay free from structural, lexical, and stylistic mistakes, for instance. The students are allowed to choose from the e-tools that facilitate and enhance writing skills in an ever-relaxing and interactive learning environment. Hence, after the session, students were asked to take the post-test.

Research Questions

The study emphasizes the use of technology-facilitated writing tools in developing EFL students writing essays. In concordance with what has been stated in the literature review and the study's objectives, several questions were formulated to evaluate the impact of using state-of-the-art technology in writing classes. These questions were as follows:

1. How do technology-facilitated writing tools affect EFL students' productivity and creativity in essay writing assignments?
2. To what extent do technology-facilitated writing tools effectively promote students' interaction, collaboration, and communication through the process of essay writing projects?

Participants of the study

EFL students who were enrolled in academic writing course level 5 at the English department, faculty of Arts and Humanities, Jazan University during the academic year 2018-2018. The students are majoring in English as a foreign language, and they have completed the basic writing courses. Therefore, it was assumed they were proficient in writing well-organized and coherent essays. All of the students were sharing the same cultural and linguistic backgrounds.

Instruments

Four instruments were used by the researcher to evaluate the impact of using online reference tools in developing students' creativity and productivity in essays. These tools were:

Fundamental Essay Writing Assignment

This assignment is mainly designed to measure all students' existing knowledge regarding the fundamental aspects of writing essays prior to their involvement in the study.

Computer Literacy Survey

This instrument was used to identify the computer literacy of the students who participated in the study prior to their involvement in the study.

Essay Writing Assignment

This assignment is intended to measure the impact of using online reference tools in improving students' writing skills in comparison to traditional learning environments.

Evaluation Rubric.

A rubric was created to evaluate students' initial and final drafts.

Procedures

A survey was administered among the participants to identify their computer literacy and existing knowledge of using technology-enhanced Language Learning tools, resources, and applications. According to the data generated from the survey, students were placed into the experimental and control groups. Each group has assigned a distinct learning environment to work on the assigned tasks. The students of the experimental groups were

allowed to work collaboratively and use various e-tools to facilitate the completion of the assignment whereas the students of the control group were allowed to work individually in a traditional learning environment. Students of the experimental groups were requested to submit their final draft via email while students of the control group were required to submit their final draft in paper-based format.

Data Analysis

The data was generated from the statistical analysis by using SPSS. The Independent Samples t-test was applied to compare the score mean of the experimental and control group in terms of their achievement in essay writing assignments.

Result and Discussion

In order to compare the performance of the experimental and control groups in essay writing assignments, this section details the statistical analysis of data generated from the assessment of the essay writing in terms of 5 categories: 1) Format, 2) Grammar, 3) Language Accuracy, 4) Organization, and 5) style. The data were processed statistically by T-test to determine the mean differences between the two to determine which group outperformed the other group. The analysis of student essays from both groups is presented in the tables as follows.

Table No. (1) The T-test for the Assessment of the Fundamental Essay Writing Assignment between Control and Experimental Groups

Group		N	Mean	Std. Deviation	Std. Error Mean
Pretest	Control	33	30.12	3.361	.585
	Experimental	33	30.82	4.194	.730

The statistical analysis of the pre-assignment completed by both students of the control group and experimental group shows the score mean (30.12 & 30.82) and standard deviations (3.361& 4.194) respectively revealing that there is no statistical difference

between the two groups in terms of their mastery of the fundamental aspects of essay writing associated with content, language accuracy, grammar, organization, style, and format. Hence, it is assumed that both groups are fully aware of the structure of the essay writing process.

Table No. (2) The T-test for the Assessment of Content category between Control and Experimental Groups

Group		N	Mean	Std. Deviation	Std. Error Mean
Content	Experimental	33	7.42	.902	.157
	Control	33	5.97	.585	.102

In the analysis of the content category, the score means for the experimental group is (7.42), and for the control group (5.97) and the standard deviation is (.902 & .585 respectively). The result indicates significant differences between the two groups in terms of their performance in developing the content of their essay. The difference in mean (1.45) indicates that students of the experimental group have outperformed students of the control group in terms of content development of their essay production**.**

Table No. (3) The T-test for the Assessment of Grammar category between Control and Experimental Groups

Group		N	Mean	Std. Deviation	Std. Error Mean
Grammar	Experimental	33	7.79	1.244	.217
	Control	33	5.03	.728	.127

In the analysis of the content category, the score means for the experimental group is (7.79), and for the control group (5.03) the standard deviation is (1.244 & and .728 respectively). The result indicates a significant difference between the two groups in terms of their performance in grammar usage. The difference in mean (2.76) indicates the performance of students in the experimental group was remarkably better than their counterparts in the

control group in terms of correct grammar usage. It has been observed that editing software might offer students more practical opportunities to check their grammar accuracy before submission for grading.

Table No. (4) The T-test for the Assessment of Language category between Control and Experimental Groups

Group		N	Mean	Std. Deviation	Std. Error Mean
Language	Experimental	33	7.45	1.175	.205
	Control	33	4.42	1.062	.185

According to the results shown in Table (4), the analysis of the language category, the score means for the experimental group is (7.45), and the standard deviation is (1.175). The mean score of the control group is (4.42), and the standard deviation is (1.062). The difference in mean (3.03) indicates that students of the experimental group have outperformed students of the control group in terms of language accuracy.

Table No. (5) The T-test for the Assessment of Organization category between Control and Experimental Groups

Group		N	Mean	Std. Deviation	Std. Error Mean
Organization	Experiment	33	7.64	1.410	.245
	Control	33	5.82	1.044	.182

Table (5), demonstrates the analysis of the organization category of the two groups involved in the study. The score means for the experimental group is (7.64), and the standard deviation is (1.410). The mean score of the control group is (5.82), and the standard deviation is (1.044). The difference in mean (1.82) indicates that students of the experimental group have overpassed their counterparts in the control group and demonstrated powerful organizational skills in their essays.

Table No. (6) The T-test for the Assessment of Style category between Control and Experimental Groups

Group		N	Mean	Std. Deviation	Std. Error Mean
Style	Experiment	33	7.33	1.451	.253
	Control	33	6.00	1.887	.329

Based on the results shown in Table (6), the analysis of the style category, the score means for the experimental group is (7.33), and the standard deviation is (1.451). The mean score of the control group is (6.00), and the standard deviation is (1.887). The difference in mean (1.33) indicates that students of the experimental group outperformed students of the control group in terms of the style of their essay production.

Table No. (7) The T-test for the Assessment of Format category between Control and Experimental Groups

Group		N	Mean	Std. Deviation	Std. Error Mean
Format	Experiment	33	8.03	1.403	.244
	Control	33	3.36	.699	.122

According to the results shown in Table (7), the analysis of the formatting category, the score means for the experimental group is (8.03), and the standard deviation is (1.403). The mean score of the control group is (3.36), and the standard deviation is (.699). The difference in mean (5.27) indicates there was a huge difference between the two groups in favor of the experimental group.

Discussion

The result of the analysis indicates that there is a huge statistical difference between the experiment and control group in terms of performance in essay writing assignments. The result is discussed in association with the questions of the study.

1. How do technology-facilitated writing tools affect EFL students' productivity and creativity in essay writing assignments?

According to the result generated from the statistical analysis, it is worth mentioning that the use of technology-facilitated writing tools has remarkably enhanced and improved students' productivity and creativity in essay writing assignments. The comparison of the mean score of each category consolidates the reality that technology has great potential for developing students' writing skills. As an attempt to justify why students of the experimental groups outperformed their counterparts, the discussion would revolve around the performance of students in each category. First, the content category indicates that technology supports students' selection of topics based on their own interests. The use of Google search enables them to have plenty of information that increases their understanding of the subject matter through the elaboration of their ideas and makes use of all the resources available to further develop the content. Moreover, the use of online resources enables them to have access to e-books, blogs, wikis, and websites that enrich their knowledge to craft effectively the central idea of the essay. Second, the grammar category seems to be sophisticatedly improved. The use of word processing programs, online tools for checking grammatical errors, or consulting websites that offer free grammar lessons, quizzes, and tests facilitate the process of error identification and as a result, they successfully eliminate the portion of grammatical mistakes. Third, language accuracy has also been improved based on the statistical analysis of the mean score of the two groups involved. The study reveals that students' lexical, syntactical skills were improved as they reflected a proper use of the language system. Using a thesaurus, in particular, expanded students' ability to use a variety of vocabulary and word choices. In

the same context, the use of speech-to-text technology would facilitate students' skills to successfully generate texts with fewer mistakes in language accuracy. Fourth, the organization category witnesses a dramatic shift in the way students organize their issues. It is interesting to note that students in the experimental groups had effectively organized their ideas and supported them with evidence and incidents that made them more coherent and persuasive in expressing their ideas. The evaluation of the introduction, main body, and conclusion of their essays indicates that students have mastered the necessary skills that are vital to organize their essays. This result was fostered by the incorporation of a number of e-tools that made them work confidently and steadily toward the production of the final draft. Websites like study.com, and writingprompts.com, to name but a few, provide students with massive ideas to organize their essays. Fifth, the style category has remarkably improved. Generally speaking, the style of an essay falls within serval categories: 1) descriptive, argumentative, narrative, and expository. However, most of the essays submitted followed an expository style, the assessment of them reflects students' tendency and ability to be clearer and more straightforward to support their ideas with facts and reasoning. A vast array of technology is used to work on their first draft, outlining the main ideas, such as Google Docs, and WhatsApp group. Finally, the format category represents a huge statistical difference between the two groups compared to the other categories. This distinction on the part of the experimental group clearly demonstrated the potential of technology that is manifested in facilitating students' ability to format their essays easily and conveniently. Some examples of technology-enhanced format are represented in 1) word processing (enables students to apply the proper font size, font type, margin, spacing, and indentation), 2) citation generators (enables students to use various formatting styles), 3) plagiarism detector (enables students to generate similarity reports, and 4) in-text-citation, (enables students to properly cite a quotation in their essays.

Based on that, it may be mentioned here that the achievement of the experimental group would not have been possible without the direct implementation of technology-facilitated writing tools.

2. To what extent do technology-facilitated writing tools effectively promote students' interaction, collaboration, and communication through the process of essay writing assignments?

The availability of technology integration in EFL classes has provided sophisticated platforms to reconcile online materials with English teaching paradigms. Moreover, it intensely affects the ways in which English language instructors design instruction and course delivery methods. Such a paradigm shift has most likely affected the idea of how to incorporate these technologies for fostering students' creativity, productivity, and collaboration in the process of knowledge construction.

Technology-facilitated instruction creates ample opportunities for learners to extend interaction with teachers and peers behind the confines of the classroom. Throughout the study, participants develop a sense of sharing, collaborating, and constructing knowledge. Interactivity among students through Google Docs and track change feature built-in word processor program, enables them to have full control over their editing process.

The use of different e-tools helps students to collaborate in the production of the written task. Brainstorming and planning activities are discussed using e-mail exchanges, WhatsApp, and working on Google Docs through asynchronous and Synchronous communication, between students. Also, the first draft was uploaded to Google document and edited and revised collaboratively. Some comments were written offering some suggestions for improvement. Then, the final draft was revised and edited using a word processor and some editing software like Grammarly and again uploaded to Google document for final review before the final submission.

Apparently, students have developed a remarkable ability to share the meaning of the words as they both critically and intellectually decide which words are best suited for the given context. It can be concluded that the availability of electronic tools significantly enhances students' learning. Conversely, students appear to be more self-assured in their ability to overcome some of the challenges associated with writing with the assistance of technology, such as peer reviews.

The use of technology facilitates the process of exchanging views regarding the proper use of different elements related to grammar, language, content, organization, format, and style. Nevertheless, the feedback received from teachers and peers through online tools such as Mote, and Floop, consolidates students' understanding and knowledge of the appropriate use of various writing aspects. Moreover, students easily accessed feedback from numerous sources. Technology-facilitated instruction effectively enhanced students' interaction and hence, develop a sense of collaboration among students in a new learning environment. Brooks (2022) in Edutopia has interestingly contributed to the role of technology in facilitating feedback. She stated; "Using technology to provide differentiated and scaffolded adaptive feedback will move students beyond waiting for teacher feedback and making "corrections" toward more self-regulation and seeking out insights to create more-effective revisions".

Conclusion

The application of various technology-facilitated writing tools has dramatically altered the traditional approaches to learning. Students seem to be more active in writing projects and take full responsibility and control over their learning. Alternatively, the use of these technological tools empowers students with language and linguistic skills and most importantly, the development of some soft skills like interpersonal, and leadership skills. Another merit that might be added to this, is the degree of motivation students had during the project. Having the sense that someone is doing something new, would definingly evoke his/her desires and generate a maximum degree of interest and that would be reflected in his/her performance.

To sum up, beyond a shadow of a doubt, it could be asserted that the potential of technology for facilitated writing skills particularly essay writing is immeasurable. Therefore, language instructors have to rethink their teaching strategies by reconsidering the potential of technology integration in fostering language instruction, particularly writing skills.

Moreover, the use of technology-facilitated writing skills calls for immediate research to establish reliable frameworks and guidelines for classroom implementation.

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