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Investigating EFL Learners' Writing Performance Using QuillBot and Grammarly:

The Case of Third Year Students at the Department of English - Ghardaia University

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Dedication

I am at a loss for words to express my appreciation to Allah for bestowing upon me the strength and trust to accomplish this work and dedicate it:

To whom my heart yearns to see: Our Prophet Mohammed, peace be upon him.

To my love, who gave birth to a piece of sugar like me, my parents

To those who are my pride and support in life, my sisters

To whom my heart goes out when they call me "my aunt": my nieces and nephews

And most importantly, I dedicate this research to "me" as a reward for all of my hard work and sacrifice.

Without forgetting anyone who loves Sarah, and Sarah loves them, I dedicate this humble work to you.

<div align="right">Sara LAGRAA</div>

First and foremost, I offer my praises all to Allah, the Great and the Propitious. My faith in Him has given me the health, strength, and capability to achieve this goal and sending blessings upon Prophet Muhammad Peace be upon him.

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<div align="right">Riyane DAHMANE</div>

Acknowledgments

Abstract

Writing academically can be unwelcome and challenging for some learners. Thanks to the contributions of technology, several applications featured by artificial intelligence have emerged to assist students in performing their writing tasks, including Grammarly and QuillBot. For that, this research is conducted to investigate EFL learners' writing performance using the aforementioned application. It aims to confirm the effectiveness of these applications in enhancing EFL learners' writing performance. To achieve this aim, a descriptive method with a qualitative approach was employed to analyze the collected data that arose from a questionnaire which targeted forty-six Third Year students and seven teachers, at the English Department of Ghardaia University. The results showed that Third Year students have favorable opinions on using them as guaranteed applications to check mistakes, acquire new vocabulary, and express and organize ideas. Nevertheless, teachers recommend their students to be responsible in dealing with those applications.

Keywords: Writing Performance; Technology; Artificial Intelligence; Applications; Grammarly; QuillBot

List of Abbreviations

%: Percentage

AI: Artificial Intelligence

AWE: Automated Writing Evaluation

CALL: Computer-Assisted Language Learning

CD-ROM: Compact Disc Read Only Memory

CF: Corrective Feedback

EA: Educational Applications

EFL: English as a Foreign Language

ET: Educational Technology

HOC: Higher Order Concern

ICT: Information and Communication Technology

IT: Information Technology

L2: Second Language

LMD: Licence, Master, Doctorate

LOC: Lower Order Concern

MALL: Mobile-Assisted Language Learning

M-Learning: Mobile Learning

N: Numbers

PEG: Page Essay Grade

PEU: **P**erceived **E**ase of **U**se

PU: **P**erceived **U**sefulness

Q: **Q**uestion

TAM: **T**echnology **A**cceptance **M**odel

TRA: **T**heory of **R**easoned **A**ction

UNESCO: **U**nited **N**ation **E**ducational **S**cientific **C**ultural **O**rganisation

WWW: **W**orld **W**ide **W**eb

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General Introduction

Introduction

Over the past century, there has been an increase in learning languages to cope with changes in the modern world and to fulfil personal and professional needs (Gabry et al., 2013). In general, learning is considered as a complex process of acquiring, establishing and improving knowledge through the use of language (*Language and Language Learning*, n.d). Language can be defined as a system of linked symbols and significant instruments to communicate with one another (Douglas, 2000), that represents a community identity and culture to exchange information and thoughts so as to contribute in social practices. Currently, the English language is one of the most widely used languages internationally because it is the most commonly spoken language in the world with almost 1.5 billion people around the world speaking it as a second language (Statista, 2023).

Besides, the demand to stay abreast of what matters in the world led people to do their best to master English. Consequently, mastering English as a language requires mastering its vital skills: reading, writing, speaking, and listening (Hashim, 2022) to achieve a high level of proficiency which in turn makes the language fluent and perfect. Writing as a skill, in particular, is considered a bit more important and more difficult than other skills and the least preferred among learners. It is a productive skill that involves interpreting insights, views, and sentiments in writing form (Dang, 2019). However, learners still struggle in creating an effective writing product.

In the midst of these challenges, so as to find possible solutions, technology is considered an essential source of providing assistance and various services that will lead learners to accomplish their academic tasks. By integrating it into education, technology contributed in improving traditional teaching methods and providing digital resources for students (Vikas, 2022). That led to the evolution of Educational Technology (ET) that is

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intended to be instrumental in learning (Koh & Lim, n.d.). Particularly, ET is manifested in the form of educational applications which aim to act as learning aids and a source to obtain proficiency where they are considered as a writing tool featured by predictive texts and Artificial Intelligence (AI)- based learning (Arnold et al., 2020, as cited in, Gayed et al., 2022), among which, Grammarly and QuillBot, are widely used.

Background of the Study

At first sight, the writing skill seems as an easy task for most EFL learners and it does not need much effort to produce a sophisticated language. Yet, when it comes to expressing their thoughts, interpreting their emotions, and conveying their opinions in a structured written form, they become confused as to where to start writing. Previous studies have reported that the writing skill is one of the most difficult for EFL learners (Suastra & Menggo, 2020). Clark's study (2009) stated that learners' difficulties in writing range from struggles in constructing compound sentences and lack of vocabulary to wordiness and writing mechanics negligence (Clark, 2009, as cited in, Omar & Shamsudin, 2022). In another study, Al-khairy (2013) clarifies that some students intend to produce their thoughts in their mother tongue, then translate them to English which make their writing of lower quality.

As a result, the aforementioned writing difficulties brought learners' attention to the use of some Educational Applications (EA) as assistance to their writing defect. In recent years, there has been an increasing interest in educational applications to respond to learner's needs and facilitate their learning process (Carbonell, 2021). In a study conducted by Ababa et al. (2021) which examined the utility of educational applications on students' academic performance, the results showed that EA had a beneficial effect to accomplish their academic tasks. Automated Writing Evaluation (AWE) is one of EA processes that focuses on evaluating writing automatically using an online checking system (Nova, 2018). Grammarly, as one of the current AWE programs in the 21st century, is regarded as an impressive writing

tool that can help learners and academics on their writing through grammar review, spell check, punctuation correction, and comprehensive and useful feedback provision to ensure that the writing is impactful and valuable (Grammarly, 2017, as cited in, Nova, 2018). Another AWE tool, Quillbot, is one of the most popular paraphrasing applications. It uses AI to suggest paraphrasing, grammar checking, summarizing, and even plagiarism detecting (Dale, 2020, as cited in, Kurniati & Fithriani, 2022).

Statement of Purpose

This study aims to explore the effectiveness of Grammarly and QuillBot for both learners who intended to find help with their writing difficulties and who care to acquire new writing skills. Besides, it aims to explore any noticeable improvement in their writing quality in terms of word choice, grammar, writing mechanics, etc. while using these applications as well as to explore how learners consider these applications as checking or learning tools.

Statement of Problem

For the majority of EFL learners, using applications has become a necessity and an inevitability because they offer facilities and assistance for their writing process, including grammar checking, spelling, and punctuation. In the midst of learners' lack of knowledge regarding how these applications can affect their performance either by enhancing their writing skills or by pushing them down the road of dependency, a significant problem arises that demands attention: investigating the effectiveness and impact of these applications in enhancing or undermining learners' writing skill.

Motivations

The significance of this study is to gain insight for EFL learners on the impact of using these applications on their writing performance; either to make them as rational or as excessive users. Besides, it is important for the teachers to have awareness about the difficulties that face learners during their writing process and the possibility of learners to

employ AWE in their writing as a tool to ease the strain on the teachers while assessing their writings. Furthermore, the application designers have a part in this study by taking into account the application shortcomings that affect the learners' writing quality.

Structure of the Dissertation

This dissertation generally follows the traditional-simple model. There is a general introduction, a theoretical part with two chapters, a practical part, and a general conclusion. The General Introduction presents a background of the study, statement of purpose, statement of problem, motivations, research questions, hypotheses, research methodology and structure of the dissertation along with limitations of the study and some definitions of terms.

The first chapter focuses on the academic writing. It starts with a definition of writing, and its types. Then, it delves into academic writing definition and its importance, its characteristics, and its approaches without forgetting the academic writing problems. As a final point, the study presents the students and teachers' lapses and their strategies in the field of writing.

The second chapter deals mainly with educational applications. It presents a definition of technology, it sheds more light on the integration of technology in education, focusing on defining a variety of terms such as Information Communication Technology (ICT), Technology Acceptance Model (TAM), Computer-Assisted Learning Language (CALL), Mobile-Assisted Learning Language (MALL), and Automated Writing Evaluation (AWE). Furthermore, since teachers' feedback plays a key role in teaching writing, the study aims to focus on the effectiveness of this element.

The practical part analyses and discusses the collected data from both students' and teachers' questionnaire about EFL learners using Grammarly and QuillBot to improve their writing performance.

To sum up, a general conclusion to summarize the whole components of the research was given.

Research Questions

Dealing with such a kind of research will lead to the following crucial questions:

1. What kind of impact does using Grammarly and QuillBot have on the writing performance of Third Year learners?

2. Do teachers recommend their learners to use Grammarly and QuillBot?

3. Do teachers distinguish between learners' original work and reviewed work?

Hypotheses

In order to answer the above questions, the following hypotheses are presented:

1. Third Year learners have positive views toward using Grammarly and QuillBot.

2. Teachers recommend their learners to use Grammarly and QuillBot.

3. Teachers can easily distinguish between learners' original work and reviewed work.

Research Methodology

With the aim of conducting a precise and trustworthy research for the reader, the study is based on both learners and teachers' views in order to accurately analyze the research hypotheses and collect the required information that fits the research needs.

The Population

Since the purpose of this study is to explore whether the use of Grammarly and QuillBot increases EFL learners' writing performance or not, Third Year learners were selected because they are more skilled at writing, they are most frequently required to present an academic piece of writing compared to other levels, and more proficient in their questionnaire answers. Besides, the teachers were selected according to specific features, such as their familiarity with their learners, their experiences in teaching, and since they teach the same case study that the research focuses on.

Sampling

The chosen samples for this study are both learners and teachers at the Department of English of Ghardaia University. Forty-Six learners of Third Year who had prior experience with these applications were precisely selected and 7 teachers were also precisely selected with different ages, modules, and degrees.

Method

Descriptive data collection methodology was adopted to describe the research findings, since   the research is new in our setting and its nature requires collecting data precisely.

Data Gathering Tools

In order to offer reliable results in this study, a questionnaire was used as a data gathering tool since it is the suitable tool for the chosen method that provides sufficient data for the research needs.

Limitations of the Study

While conducting this research, the work encountered some restrictions. The intention was to make 102 as a representative sample size with a 95% confidence level; however, things did not go as planned due to a lack of regular students' attendance at the university as well as their ignorance to answer some questions which affected the results. The sample was limited to 46. Additionally, since time was not enough for an experiment to strengthen the study or an observation, relying on a questionnaire for both students and teachers was the only option.

Definition of terms

Academic writing: is formal writing based on its standards, and characteristics to produce academic publications such as thesis, research, articles, reports, etc.

Writing Performance: The ability of an individual to express his feelings, thoughts, and feelings in a clear and sequential way, so that the reader can understand the writer's point of view

Educational applications: are software designed to facilitate the learning process to the users to access educational courses and resources simply and easily.

Artificial Intelligence: The ability of digital devices and computers to perform certain tasks simulates and resembles that of intelligent species, which aims to create systems that behave as human beings do in terms of learning and understanding.

Chapter One: Academic Writing

Introduction

Writing is seen as a crucial skill to learn, particularly for EFL learners who are required to complete ongoing academic writing projects in order to succeed in both personal and professional careers. EFL learners must possess specific knowledge that corresponds to their writing level in order to achieve this skill. In addition, teachers must provide suitable writing instructions to meet learners' expectations. Therefore, this chapter defines the writing skill generally and its types, explains academic writing and its significance, introduces its characteristic and approaches, identifies the problems that learners face, and highlights common lapses made by teachers and learners along with suggestions for resolving these difficulties.

1.1. Defining Writing

Writing is a commonly used notion in language teaching and learning, yet it is a concept difficult to define precisely, as Weigle (2002) clarifies: "this is not a simple task, since, as researchers in both first- and second-language writing have pointed out, the uses to which writing is put by different people in different situations are so varied that no single definition can cover all situations." (p.3). From a communicative side, writing is considered a significant way to interact because it enables the writer to convey his thoughts, views, and emotions to the reader in a scripted language. Lado (1983) views writing as mediator to exchange language and thoughts. Similarly, Hayes (1996) confirms that:

> Writing is a social act and is one of many forms of communication. It is a means by which the writer can share information and thought with others. Usually, it is done within a specific context, e.g. writing e-mails to friends; making a shopping list for yourself; or showing your knowledge and understanding of what you have learned in an essay. (as cited in, Price & Maier, 2007, p.280)

Byrne (1991), by contrast, states that writing is a set of symbolic graphs combined together to form words and words arranged to shape sentences then comprehensible texts. On the other hand, Celce-Murcia (2001) writes that: "writing is the ability to express one's ideas coherently and accurately" (p.205). It is a significant achievement in second or foreign language. Similarly, writing is seen as the act of producing correct sentences by using correct grammar (Widowson, 1978, as cited in, Filali, 2019).

However, Nunan (1989) views writing as a thinking process: "an extremely complex, cognitive activity for all which the writer is required to demonstrate control of a number of variables simultaneously" (p.36) represented in content, format, sentence structure, vocabulary, punctuation, and spelling.

1.2. Types of Writing

Regardless of the other types of writing and their significance for EFL learners, many English departments made progress in the writing aspect by designing new programs, arranging new modules, and creating new writing types to improve EFL learners' writing skill, among them are the three types listed below.

1.2.1. Critical Writing

Critical writing is developing one's critical thinking in the form of evidence and arguments that support the way one understands the topic and how to convey it to the readers. In order to build strong points of view and to have a deep understanding, the writer needs to master critical skills that involve reflecting, researching, making notes, and reading as well as writing to compose a strong point of view (University of Western Australia, n.d.). Critical writing, allows EFL learners to apply their own judgments about the trendy phenomenon, draw conclusions on ambiguous areas of knowledge, as well as analyse and evaluate an interesting event through providing evidence and notable points of view (University of Birmingham, n.d.).

1.2.2. Creative Writing

From the notion creative, the reader can expect the nature of this writing. According to Oxford Dictionary of English (n.d.), creative "involve[es] the use of skill and the imagination to produce something new or a work of art". Based on the definition, creative writing is the act of using humans' imagination insightfully and putting it down on paper (Nemouchi, 2019). To clarify, creative writing is not a talent gifted for a particular category, but a skill that can be developed through following an effective writing process to improve their rhetoric and writing skills (Nemouchi, 2019). Similarly, Larkin (2009) views the practice of creative writing as a craft, not just a passion; the personableness of one's writing and the pursue of the writing process all contribute to producing writing texts (as cited in Abdalla, 2019). Ray Bradbury argues that:

> If you want to write, if you want to create, you must be the most sublime fool that God ever turned out and sent rambling. You must write every single day of your life. You must read dreadful dumb books and glorious books, and let them wrestle in beautiful fights inside your head, vulgar one moment, brilliant the next. (as cited in goodreads.com)

1.2.3. Academic Writing

Academic writing plays a vital role in enhancing EFL learners' writing quality from basic to professional. They are required to master academic writing in high school and college classes to meet their academic needs (Oshima & Hogue 2007). Hence, they have to perfect some academic writing skills such as arranging words in a sentence, including significant ideas, and using accurate mechanics (Ratnawanti et al., 2018). Academic writing features a clear, concise, and direct aspect to communicate ideas clearly and concisely.

1.3. Academic Writing and Its importance

Etymologically, the word "academic" is borrowed from the Greek "Akadēmia" and from the Latin word "Academeia". It appeared in the mid-15th century. Originally, it came from the name of the public garden where Plato taught (Etymonline, n.d.). According to the Oxford Dictionary of English, academic "is related to an educational or scholarly institution or environment" (n.d.). It is a worthy competence that EFL learners are expected to accomplish (Ratnawanti et al., 2018). Thus, universities and colleges require frequent academic work to earn targeted degrees.

Since each academic presented their opinions on academic writing from different angles, academic writing did not receive a definite definition. Valdes (2019) sees academic writing as a formal style that is produced for educational purposes, in which the writer's paper should not be considered a separate task while taken into account the academic reader's expectations through determining the specific purpose of writing (Filali, 2019). So as to reach the aforementioned qualities, the writer needs to master conventions of style referencing and layout of academic writing techniques (Nemouchi, 2019). Academic writing proved an important step in the academic research process, enabling researchers to report situations of thinking, experience, observation, application, and testing, etc. (Akaya & Aiden, 2018).

Fang (2021) argues that academic writing is useful for producing, transmitting, evaluating, and analysing knowledge. Furthermore, writing in an academic style is important for academic performance as well as mastering a discipline. Mastering academic writing provides resources, knowledge creation, identity development, disciplinary practices, social positioning, and career advancement.

1.4. Characteristics of Academic Writing

According to Birhan (2017), academic writing in English is a linear, accurate, clear, and understandable, by highlighting one central idea or theme without vagueness or repetitions. In

order to obtain the quality academic paper, EFL learners must take into consideration a number of characteristics as proposed by Birhan (2017): complexity, objectivity, formality, explicit, hedge and coherence.

1.4.1. Complexity

As it is commonly known, written language is more complex than spoken language. It has longer words, dense lexicalilty, and more varied vocabulary. It uses more noun-based phrases, and more grammatical complexity, including more subordinate clauses. Tribble explains that "lexically dense nominalised styles make it possible to give prominence to certain categories of information and construct a distance in personal relationships with the reader" (1996, p.21) this style enables to emphasize more on the information transmitted between the author and the reader.

1.4.2. Objectivity

Academic writing is, in general, objective. Writers are required to present their views objectively, deal with the topic from a balanced perspective, and support them with appropriate information to be credible.

1.4.3. Formality

Academic writing must be written in a proper formal style (Jordan, 1999, as cited in, Birhan, 2017). To value the standards and the qualities of academic writing, it should contain specific grammatical patterns, organization, and an argument, while avoiding colloquial words and personal expressions.

1.4.4. Explicitness

Explicitness is essential in academic writing. It refers to the clear construction of the introduction, body, and conclusion in an academic paper. Writers are expected to present ideas and paragraphing in a clear, relevant way to include number of substitute points of view and to provide a sense of argumentation.

1.4.5. Hedge

Hedging in academic writing is considered one of the subjects of interest to linguists (Skelton, 1988, as cited in, Birhan, 2017). It stands for the expressions of tentativeness and possibility in language use. Birhan claims that hedging "represents an absence of certainty and is used here to describe any linguistic item or strategy employed to indicate either a lack of commitment to the truth value of an accountant proposition or a desire not to express that commitment categorically" (2017, p.106). Hedges can help writers avoid making claims that they cannot support with evidence and maintain an objective tone in their writing.

1.4.6. Coherence and Cohesion

Academic writing requires a smooth transition of ideas or the effective use of linking words to connect ideas within and between sentences and paragraphs, as well as an excellent usage of "signposting" words to demonstrate the evolution of arguments. That's to say "cohesion implies the interconnection of words, phrases, clauses and sentences as well as paragraphs through markers of additions whereas coherence implies the presence of consistent sense and flow of ideas among paragraphs" (Birhan, 2017, p.105) simply, Cohesion helps to create a clear and logical structure within a paragraph, while coherence ensures that the overall argument is easy to follow and makes sense.

1.5. EFL Writing Approaches

According to Krashen (1984), writing skills teaching had not brought the researchers' attention until the beginning of the last decade of the twentieth century (as cited in, Tribhuwan, 2020). With the increasing use of the English language around the world, considering it an international communication language, teaching writing skills has been given much value and focus by the researchers. Among the central interests is to provide different approaches to teaching writing effectively.

The term "approach" was used to describe college students' personal experiences of learning and the phenomonography of learning (Marton, 1981, as cited in, Lavell et al., 2002); whereas, writing approach has been used to refer to the relation between the convictions about writing and the patterns of writing strategies that they employ (Lavelle & Bushrow, 2007). The followings are the three most common approaches: The product approach, the process approach, and the genre approach. Different scholars asserted that each of these approaches has its own strengths and they are complementary to one another (Grami, 2010; Hayland, 2002; Badger & White, 2000, as cited in, Tribhuwan 2020). Hence, this new trend has an emphasis on shifting away from sentence structure and grammar drills toward usage and text organization (Namouchi, 2014).

1.5.1. The Product Approach

The product approach emerged in the 1970s. It stands for the final result of the learners' writing and evaluates it through several criteria including "vocabulary use, grammatical use, and mechanical considerations such as spelling and punctuation, as well as content and organization" (Brown, 1989, p.320). According to R.V White (1988), different phases are stated in three steps. The first step allows learners to explore the model text, where they examine the rules of language and the structure of sentences. The second step is to use the model text elements, such as rules and vocabulary. The third step is to generate a parallel text similar to the model (as cited in, Ben Aissa, 2018).

Crawford (2008) stated some positive effects of the product approach that are worthy of mention. Following the product approach enriches learners' linguistic knowledge by providing them with the way texts are organized, methods, theories, materials, and instructional practices that satisfy the students' needs (Nemouchi, 2019). However, this approach has not been without criticism either. Particularly in the notion of creation, the imitation of the model text hinders learners' creativity and self-expression (Khadraoui, 2016).

Besides, Escholz (1980, p.232) views this approach as: "satisfying and inhibiting writers rather than empowering them or liberating them" (as cited in, Nemouchi, 2014, p.40).

1.5.2. The Process Approach

Due to the infectiveness of the previous approach, a new approach emerged in the 1980s called the process approach. This new trend emphasizes the systematic process of generating ideas in successful way (Tribble, 1996, as cited in, Tribhuwan, 2020). Nemouchi (2014) states the following four stages as the current ones. First, the prewriting stage is related to collecting information through reading, discussing, and problem solving, etc., to accommodate the topic and brainstorm their ideas and knowledge. Second, the drafting stage revolves around developing ideas on paper, where the focus is on the content rather than the writing mechanics. Third, the revising stage involves the organization or the adjustments of ideas, syntax, and sentence structure in an appropriate way. Finally, the editing stage is about the correctness of errors and mistakes associated with writing mechanics, grammar, lexical, and syntactic changes.

In spite of the extent of facilitation and admission this approach gained, it has been criticized. Badge and White (2000) assume that all writers follow the same process, regardless of what is written or how it is produced, and it places little emphasis on the writing's purpose and social context. Moreover, Avellino (2012) views the process approach as consuming time to produce a final draft and not an easy task compared to the product approach (as cited in, Ben Aissa, 2018).

Figure 1

The Process of Writing

| being motivated to write | → | getting ideas together | → | planning and outlining | making notes | → | making a first draft | → | revising replanning redrafting | → | editing and getting ready for publication |
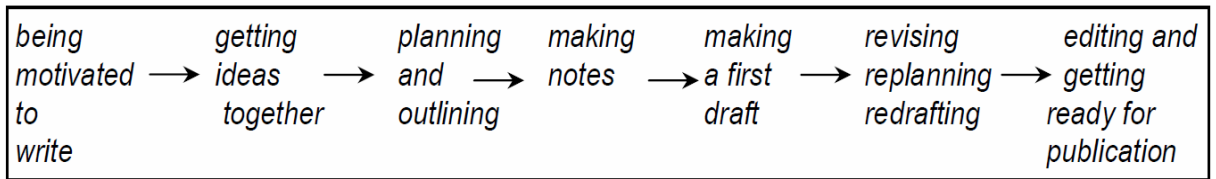
Note. Adapted from "Writing", by Hedge, T., 2005, p. 51, New York: Oxford University Press.

1.5.3. The Genre Approach

Since the 1980s, the genre approach has appeared to be a fundamentally useful approach in Britain and the United States in EFL classes. Byran (2004) states that the genre approach is: "based on examples of a particular genre. By framework it is meant guiding students. The genre framework supports students' writing with guiding principles about how to produce meaningful passages" (p.234).

Evans (1997) suggests different stages in three steps to achieve a specific purpose. The first step is to present and analyze a genre modal to work on. The second step involves completing exercises that manipulate connected language forms. The third step considers the production of texts as a result of the previous steps.

1.6. Academic Writing Problems

EFL learners agree that writing is not a simple cognitive activity; instead, it is a complex mental production (Al Badi, 2015), which needs: "careful thought, discipline and concentration" (Grami, 2010, p.9, as cited in Al Badi,2015, p.66). Hence, this complexity gave rise to several problems and difficulties for EFL learners during their writing process. Bryne (1988) categorized these difficulties into three main problems (as cited in, Dwipratiwi, 2012)

1.6.1. Linguistic Problem

It is intended to address the lack of proficiency in using linguistic components due to learners' lack of interest (Byren, 1991; Harmer, 2008) and methodological inappropriacy (Ahmed et al., 2013; Javed et al., 2013; Siddiqui, 2007, as cited in, Fareed et al., 2016). As a result, their writing has become of lower quality and more insignificance. The source of this problem lies in the difficulty in monitoring grammar, vocabulary, language use, and choice of sentences.

1.6.2. Cognitive Problem

It refers to the misunderstanding and non-use of the appropriate formal instructions and certain language structures which lead to ineffective communication in writing. In this case, the cognitive difficulties include spelling, punctuation, capitalization, and paragraphing.

1.6.3. Psychological Problem

With the absence of direct interaction and feedback from the reader, the writer finds difficulties during writing. Furthermore, Haider (2012) and Hyland (2003) add another problem which is mentioned below.

1.6.4. Pedagogical Problem

Actually, this problem is the responsibility of two parts: teachers and pedagogical institutions. Firstly, incompetent teachers result in lack of motivation and lack of effective feedback for the learners. Secondly, the use of traditional approaches, insufficient time for teaching writing and lack of material support work together to produce incompetent learners in writing skill (as cited in, Fareed et al., 2016, p.82).

1.7. Lapses and Strategies

1.7.1. Lapses

Writing still tops the list of the most challenging skills to teach and learn despite the variety of approaches and methods available. That refers to some errors and gaps made by both teachers and learners that led to dissatisfaction.

1.7.1.1. Teachers' Lapses. The followings are among teachers' slightest mistakes that are made in their classrooms. Firstly, disregarding sample which refers to teachers' negligence in providing writing examples deprive learners to understand the tasks at hand or to inspire them to use higher level expressions and produce quality writing (Top Score Writing Blog, 2021). Secondly, drafting delay, where the application of the course instruction is delayed until the end of the unit, leads learners to lose track of their prior knowledge because they have fewer opportunities to apply and practice (Sears, 2022). Thirdly, overcorrecting, as it is important to be cautious when making discouraging comments while correcting learners' writing attempts, as excessive making up on their papers in red ink diminishes the worth of their efforts because over verifications on writing mechanics undermines learners' confidence and that make them think that they have poor writing (Pudewa, 2000). Finally, teaching writing not the writer, by placing the emphasis on teaching the fundamentals of writing rather than analyzing the needs of the learners. This way, the writing course is neither worthwhile nor productive (Louella, 2020).

1.7.1.2. Learners' Lapses. On the other hand, it is undeniable that learners lead themselves to have weaknesses in their writing due to several lapses, as John Norrish (1987) proposes (cited in, Afriani, 2018). Firstly, careless learners show a lack of motivation and interest in applying language rules, and they do not even bother themselves to know. Secondly, first language interference, which refers to the cognitive process that occurs in a learner's mind in generating ideas influenced by their first language, is another lapse. Thirdly,

translation is one of the lapses learners make in which they translate their first language sentence into the target language; word for word. The final one is unconfident writers, where learners are not convinced that their writing will achieve the level of good writing quality because of prior criticism and developing thoughts, even though they are skilled at writing (KHTS Articles, 2021).

1.7.2. Strategies:

After examining the aforementioned lapses, it is vital to offer some suggestions for strategies that might help teachers and learners improve their proficiency to teach and learn writing.

1.7.2.1. Teachers' Strategies. According to Haynes and Zacarian (2010), teachers need to adopt the following strategies. Initially, they should make lessons visual. In order to capture their learners' attention and give some credibility to the content presented, teachers are required to use visual materials in their EFL classrooms. Additionally, using cooperative learning strategies encourage small groups of learners to exchange information and develop their language skills.

Subsequently, for the purpose of conveying meaning to learners, teachers should speak more slowly and include gestures and body language to provide comprehensible input. Finally, vocabulary preview, by providing definitional and contextual terminology, enables learners to comprehend and get an understanding of how to produce written texts (as cited in Febriyanti & Saragih, n.d.).

1.7.2.2. Learners' Strategies. Besides, learners can improve their writing performance by using the strategies Oxford (1990) suggested (as cited in, Ould Si Bouzian, 2020). Firstly, cognitive strategies include adopting a set of procedures for gathering, organizing, summarizing, and analyzing information. The latter, in particular, helps learners in deal with information and later becomes ingrained as a habit whenever they begin to write.

This helps them become skilled in the writing process to make it easier to accomplish the task's goal.

Secondly, compensation strategies are another set of strategies learners use to overcome their writing lapses. They refer to the use of language in alternative ways when there is a missing vocabulary that expresses the meaning of the target lexical term as closely as possible. Thirdly, effective strategies focus on regulating emotion, inspiration, attitudes, and motivation for lowering anxiety and boosting self-confidence. Finally, reading is a key to crafting writing, which enables subconsciously absorbing syntax, grammar, writing mechanics and structure (Petelin, 2021).

Conclusion

Since writing is an effective instrument to convey one's ideas, emotions, thoughts, and feelings, EFL learners should examine the critical position they are in because writing is like a mirror to express what is wandering inside. Also, teachers should be held accountable for giving learners appropriate instructions that are tailored to their needs. So teachers and learners must work hand in hand to remove these barriers.

Chapter Two: Educational Applications

Introduction

Since the world is witnessing radical changes in various fields on account of several reasons, among them technology, education has had its share of this change. The integration of technology into education resulted in an effective and dynamic learning environment, particularly for EFL learners who are aiming to improve their writing skill by using a variety of techniques, including Educational Applications. The current chapter focuses on dealing with the technology aspect by highlighting the Information Communication Technologies (ICTs) as well as the Technology Acceptance Model (TAM). The importance of the integration of technology into education in the form of Computer-assisted Language Learning (CALL) and Mobile-assisted Language Learning (MALL) methods is another focal point of this chapter. Moreover, the chapter presents the role of Educational Applications (EAs) and Automated Writing Evaluation (AWE) by shedding light on Grammarly and QuillBot applications without missing the importance of writing assessment.

2.1. Definition of Technology

The numerous concepts and definitions of technology are the result of its dynamic nature, which includes the continuous introduction of new varieties and their subsequent improvements and modifications. Therefore, technology has been defined from different perspectives (Wahab et al., 2011). According to Kumar et al. (1999), technology encompasses two components: physical components, which are embodied in the products, tooling, equipments, blueprints, technique and process; and informational components, which are related to the knowledge or information to know-how in management, marketing, production, quality control, reliability, skilled labor, and functional areas.

Burglman et al. (1996), on the other hand, define technology as the theoretical and practical knowledge, skills, and tools that can be utilized to create products and services, as

well as, the system for producing and delivering them. According to Tepstra and David's (1985) perspectives, technology is seen as "a cultural system concerned with relationships between humans and their environment" (as cited in, Wahab et al. 2012, p.62) which means in response to human requirements in their surroundings, new technologies will be developed to make living more convenient.

2.1.1. Information and Communication Technologies (ICTs)

Information and Communication Technologies (ICTs) have been identified as critical factors influencing teaching and learning effectiveness around the world (Chen et al., 2015). Many international organizations and governments, including United Nations Educational, Scientific and Cultural Organization (UNESCO) have emphasized the importance of ICT and have attempted to incorporate it into Educational Systems (as cited in Chen et al., 2015, p.26). According to Blurton (2002, p.46), ICT is defined as "a diverse set of technological tools and resources used to communicate, create, disseminate, star, and manage information".

ICT comprise technologies such as mobiles, computers, and the internet (SafiulHoque & ShafiulAlam, 2010), robots and emails (Gokhe, n.d). ICTs play a key role in improving educational effectiveness and making the learning and teaching processes easier and more captivating. As a result, Chen et al. (2015) insist that "ICT knowledge is necessary at all educational levels for teachers and students regardless of subjects, thoughts and degrees obtained" (p.28), which has become essential to cope the digital age to access educational resources, and to keep informed about the latest updates concerning their field of study.

2.1.2. Technology Acceptance Model (TAM)

One of the most popular models to explain user acceptance behavior is the Technology Acceptance Model (TAM) which was first presented by Davis (1986). The Theory of Reasoned Action (TRA) in particular and social psychology theory in general serve as the foundation of this model (Fishbein & Azjen, 1975, as cited in Ma & Liu, 2005). TAM

was created in order to predict and explain acceptance of computer technology, to describe an individual's Information Technology (IT) acceptance behavior, and to comprehend the causal relationships between users' internal beliefs, attitudes, and intentions (Amadu et al., 2018).

The TAM is incredibly functional in terms of education, especially for electronic learning and mobile learning (Zaineldeen et al., 2020). When users are given a software package, a variety of factors or variables influence their decisions regarding how and when to use it (Masrom & Hussein; 2008). Accordingly, Davis (1989) introduced the TAM's preliminary constructs in terms of two main factors: perceived usefulness (PU) and perceived ease of use (PEU).

Perceived Usefulness (PU). It is "the degree to which a person believes that using a particular system would enhance his or her job performance" (Davis, 1989, p.320). In a simple term, "perceived usefulness" refers to how much a person believes that utilizing a specific system will enable them to perform their job more effectively." (Davis, 1989, p.320).

Perceived Ease of Use (PEU). It is "the degree to which a person believes that using a particular system would be free from effort" (Davis, 1989, p.320). In other words, perceived ease of use refers to the extent to which someone thinks using a specific system will be easy and effortless. It differs from perceived usefulness, which measures how much a person thinks the system will aid them in achieving a goal.

Simply put, User acceptance and utilization of a technology or system is determined by whether or not he considers it useful and easy to use.

Figure 2

Technology Acceptance Model (TAM)
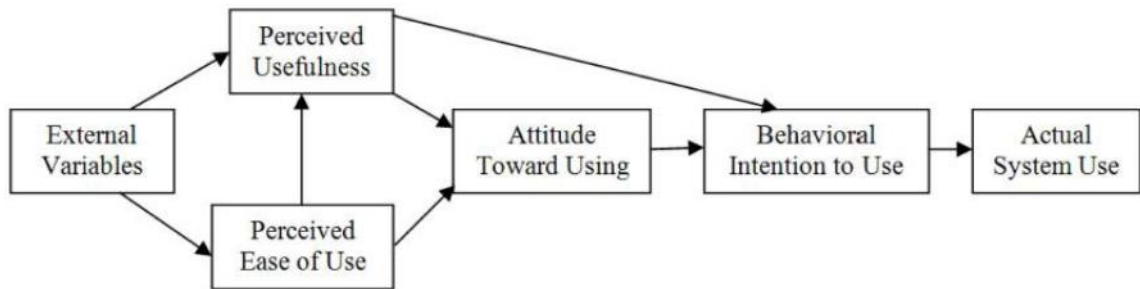
Note. Adapted from "Perceived Usefulness, Perceived Ease of Use, and User Acceptance of Information Technology", by Davis, F, 1989, Management Information Systems Research Center, University of Minnesota.

2.2. The Integration of Technology in Education

Technology is ubiquitous; nearly every aspect of human lives is impacted by technology, especially education. The integration of technology into education has revolutionized the teaching and learning quality in the last ten years. It can help to acquire knowledge, skills, and gain competencies to cope with 21stcentury needs (Rathore & Sonwat, 2015), and "it opens another door on how learning process become more conducive, interactive, and fruitful on both teachers and students" (Hero, 2019, p.102). However, Ellington et al. (1993) propose two distinct functions of educational technology use, termed the technology in education and technology of education.

The technology in education refers to using tools in education to present information, such as instructional media, hardware and software, whereas the technology of education "encompasses the intangible features from research and learning theories together with the hardware and software portions" (as cited in, Koh & Lim, 2008, p.104). Educational Technological (ET) tools are considered a vital instrument to integrate in EFL teaching and learning providing different technological materials such as the Computer-Assisted Language

Learning (CALL) and the Mobile-Assisted Language Learning (MALL) approaches (Meiloudi & Mebarki, 2015).

2.2.1. Computer-Assisted Language Learning (CALL)

The term CALL is an abbreviation for computer-assisted language learning. Levy (1997) has defined it as "the search for and study of applications of the computer in language teaching and learning" (p.1). It refers to the exploration and examination of how computers can be used in teaching and learning languages. The focus is on finding practical and effective ways to integrate technology into language education. Moreover, Torut (2000) argues that Computer Technologies can be used for: processing, presentation packages, guided drill and practice, tutor, simulation, problem-solving, games, multimedia Compact Disc Read Only Memory (CD-ROM), and internet applications such as e-mails, chats and the World Wide Web (WWW) for language learning purposes.

The use of computer-assisted language learning has grown significantly in recent decades as a result of its great facilitation capabilities, especially with the access of the internet (Lakhdar Hamina 2019). According to Barani (2013), "Although computers have been used since the first half of the 20th century, they were not used for educational purposes until the 1960s" (p.532).

The use of CALL can be beneficial for both learners and teachers in the process of teaching and learning a language. Especially for learners, CALL has been found to be an effective way of helping them develop their understanding of the language they are learning by providing them with engaging content and feedback on their progress (Lakhdar Hamina, 2019).

2.2.2. Mobile - Assisted Language Learning (MALL)

As an evolution of CALL, a new approach to language learning is emerging, particularly using mobile learning (M-learning) technology, which means "a device such as

personal digital assistance or smart phone that can store, access, create, allows modifying, organizing or otherwise manipulating data in various forms from a location without being required to be lathered to any particular spot" (Tyler, 2002). This new approach is the Mobile-Assisted Language Learning (MALL).

According to Miangah and Nezarat (2012), "MALL deals with the use of mobile technology in language learning. Students do not always have to study a second language in classroom. They may have the opportunity to learn it using mobile devices when they desire and where they are" (p.313). In other words, with MALL, learners are not restricted to a classroom setting and can learn the language whenever and wherever they want.

Kukulska-Hulme and Shield (2008) claim that "MALL differs from CALL in its use of personal, portable devices that enable new ways of learning, emphasizing continuity or spontaneity of access across different contexts of use" (p.273), while CALL refers to the application of various technologies to enhance collaboration and creativity in language learning. CALL prioritizes improving learner's social networking as one of its main goals (Beatty, 2010).

Language learners, now, have access to tools and resources that support motivation, autonomy, social interaction, and situated learning via mobile technology. With the aid of portable devices like smart phones, digital recorders, and cameras, language learners can communicate with others and access language learning resources at any place and time (Kim & Kwon, 2012).

2.3. Educational Applications (EAs)

Technology is being incorporated into education more and more to enhance it on all levels. There is still a lot to learn about the advantages it can offer to the teaching and learning process (Gavin & Hockly, 2007). As technology becomes more integrated into education, new devices and applications are becoming available to enhance the learning experience

CHAPTER TWO : EDUCATIONAL APPLICATIONS

(Luna-Nevarez & McGovern, 2018). This blending resulted in educational apps (Ababa et al., 2021).

The term "app" comes from application and refers to a type of software used on mobile devices. While applications have existed for personal computers for some time, the term app now primarily refers to software used on smart phones and other mobile devices (Zhang & Liao, 2015). EAs are instruments created to support online learning and teaching that enable the use of online tools to carry out conventional educational tasks (Ababa et al., 2021). They are revolutionizing the field of education and altering how students learn (Abdelbasset, 2022) since learning has become more accessible virtually (Ababa et al., 2021).

Prior to anything else, it is essential to get an overview of the beginning and the source of applications. Applications are part of software. According to Singh and Kumar, software is a group of applications that give users the ability to use computers and carry out specific tasks. Without software, hardware cannot be used because it regulates how computer peripherals operate. The software can be further divided into mainly two parts: Application software and System Software. System software is a subset of computer programs that offers a platform for the operation of hardware and software. It enables the use of system resources by computer programs and the resolution of computational issues (2018).

On the other hand, application software, also known as end-user programs or apps, is designed to assist users in completing tasks by allowing user inputs. It is separate from system software and is used after the user interacts with the system software. Examples of application software include word processing, spreadsheet, and presentation software (Singh & Kumar, 2018). It can be installed on a device or accessed online, and it can be a single program or a collection of smaller programs referred to as an application suite.

To delve deeply into the world of application software, software are also used in teaching, learning, and other areas of education and is known as educational software. The

term educational software describes computer programs made for teaching or self-study. They are used in the teaching-learning process by both teachers and learners. They are available in a variety of formats to meet various needs and situations. Educational software can be divided into two categories: content-free software and content-rich software (University of Telafer, 2019).

The term content-free software refers to computer programs that let users create their own text or multimedia files using word processing and graphics software. These programs also allow for audio recording and editing (using programs like Audacity) and concept mapping (using programs like C-Map, Free Mind) for planning essays, stimulating ideas, or visualizing data. Content-rich educational software is subject-specific and contains multimedia content like graphics, videos, sound, and animation presented in a structured way. Learners can re-run the software to achieve mastery of a concept. These software are used in schools as part of smart-classroom project and are copyrighted and proprietary (University of Telafer, 2019).

2.3.1. Automated Writing Evaluation (AWE)

In keeping with technological advancement and its significance in providing quick and thorough corrective feedback, several AWE tools have been employed as an alternative educational technique in second language (L2) writing classrooms The inception of AWE was in the 1960s, when it was known as Page Essay Grade (PEG) (Miranty & Widiati, 2021). According to Wilson and Andrada (2016) "AWE assesses written texts using automatic rating engines developed by computational linguistics" (as cited in Miranty & Widiati, 2021, p.127) AWE tools can evaluate various aspects of writing, such as lexical, syntactic, grammatical, semantic, and discourse levels, and provide quick and thorough evaluation results, including automated scores and written corrective feedback.

The assessment may cover lexical, syntactic, and grammatical levels as well as semantic and discourse levels (Chen & Cheng, 2008). AWE is viewed as a helpful means for both learners and teachers. From the learners' perspectives, it can increase learners' motivation, raise their awareness of the need to do multiple revision stages, provide an immediate score and written corrective feedback, and be less time-consuming (Miranty & Widiati, 2021).

Additionally, it enhances the learners' autonomy by using the score and feedback to have self-reflection and self-revision, which lead to relief of their writing anxiety and a resulting self-paced and personalized which refers to "The personalization of the evaluation process makes the students not worry about negative judgment from either teachers or peers" (Miranty & Widiati, 2021, p.127) which can reduce their anxiety about negative judgment from teachers or peers and this can motivate them to engage in self-reflection and self-revision, leading to improved writing skills. On the other hand, from teachers' perspectives, AWE helps them devote their efforts and time to evaluating text content and organization. AWE provides detailed evaluation results and feedback in grammar and writing mechanics (Miranty & Widiati, 2021). Overall, studies reveal that AWE is viewed as an "extra voice" and "extra helper" (Li, 2021, p.5), a "second pair of eyes" (Grimes & Warschauer, 2010, p.21), and a "good partner with the classroom teacher" (Wilson et al., 2021, p.5).

2.3.1.1. Grammarly. According to the last reports, Grammarly gains recognition by TIME as one of the 100 most influential companies and by Fast Company as one of the world's most innovative AI companies (Grammarly, 2023). In 2009, Grammarly was invented by Alex Shevchenko, Max Lytvyn, and Dmytro Lider, with Brad Hoover playing a critical role in the process (Grammarly, 2023). It is considered one of the AWE programs that can be implemented in the EFL writing class; as an online website for proofreading that can offer

correction for spelling, punctuation, synonyms, grammar, and the detection of plagiarism (Ghufron, 2019). Moreover, as explained by Zoe:

> Grammarly is more than a grammar check, more than a spell check, and more than a punctuation corrector. It's a comprehensive writing tool that helps you write clear, flawless text that will impress your readers. With Grammarly, you'll build writing skills while you're correcting grammar, spelling, and punctuation mistakes as well as sentences structure problems, misused words, typos, and more" (2021).

The users can access Grammarly in multiple ways: through mobile device, productivity software plug-in, web app, and browser extension as either free or premium. The free version offers feedback on grammar, punctuation, spelling, conventions, and conciseness. Besides, it provides an overall performance score, ranges from 1 to 100, that indicates the level of writing quality (Koltovskaia, 2022).

However, the $30 monthly subscription for the premium version offers more functionality than the free version by recognizing more than 400 types of checks and features such as tone, sentence structure, plagiarism, and citations (Grammarly, 2023). Additionally, "it provides indirect feedback (i.e. it indicates that an error has been made by underlining the error), a metalinguistic explanation (i.e. it gives a brief grammatical description of the nature of the error), and direct feedback (i.e. it gives a correct form or structure)" (Koltovskaia, 2022, p.4).

As every coin has two sides, Nova clarifies a variety of strengths and weaknesses for Grammarly in evaluating academic writing. Firstly, Grammarly is beneficial in "facilitating access to learning feedback", which gives the opportunity for learners to learn from their mistakes and make self-revision. Secondly, "the ease of access" refers to the clarity of the guidelines interface. Thirdly, "speed of evaluation" means the checking process is resolved immediately. It reduces the time needed to assessing and revising their academic writing.

Finally, "free services" are viewed as attractive features that polarize users' interests. The weaknesses of Grammarly include "misleading feedback", "excessive checking of reference lists", and "inabilities to check context and written content" (2018, p. 87).

Figure 3

Grammarly Main Interface.
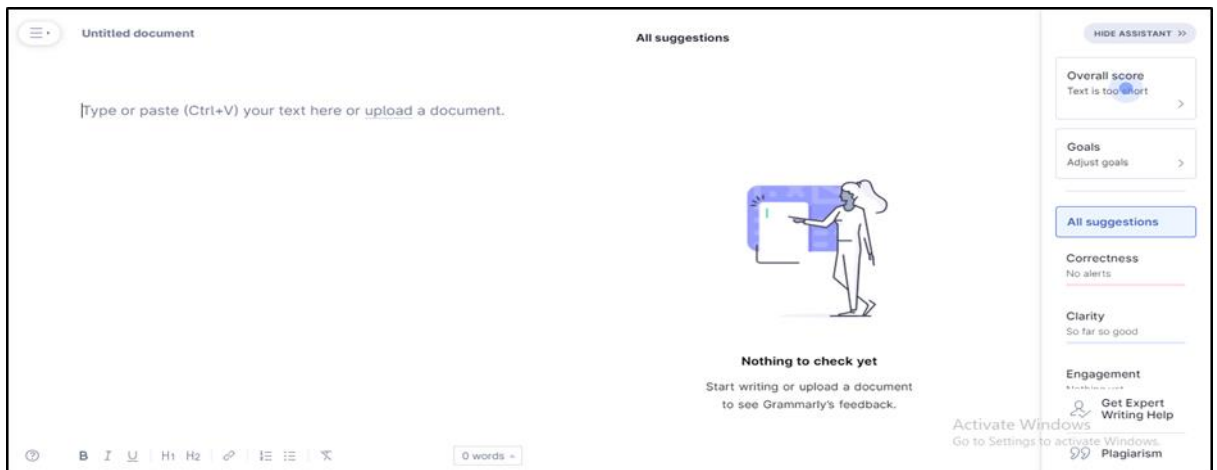
Note. Reprinted from "Grammarly", by Lytvyn, M., Lider, D., & Shevchenko, A, (2023, March 23). Retrieved from https://app.grammarly.com/ddocs/2068076319

2.3.1.2. QuillBot. With the advancement of technology, the writing process can be made easier with the use of Quillbot, which is a digital tool that utilizes artificial intelligence to enhance writing quality. Besides using AI, which seeks to create machinery that can carry out tasks just like people, AI-powered tools, such as assessment, tutoring, content generation, and feedback, can be used to improve teaching and learning processes. One such AI-based tool is Quillbot (Kurniati & Fithriani, 2022), which was developed in 2017 by Rohit Gupta, Anil Jason, and David Silin; three computer science students. They have been constantly improving the product by adding new features and enhancing its quality daily (Kusuma, 2020).

It is an online tool used to help paraphrase writing to avoid plagiarism, summarize long sentences and improve grammar, in order to make writing looks better and more

professional (Williams & Davis, 2017). This application is commonly used by learners, writers, bloggers, teaching staff, etc. (Chapelle & Sauro, 2019). It is available in two versions: a free version and a premium version. The maximum number of characters that can be paraphrased in the free version is 400; in the premium version, this number can be increased to 10,000. The tool quickly and efficiently paraphrases English sentences (Fitria, 2021) and the premium plan is offered for $14.99 a month (QuillBot, 2023).

QuillBot has seven useful features and different modes for paraphrasing texts, including the Standard Mode which enhances the original meaning of a text while also giving it a more contemporary and real sound. In order to avoid changing the text's meaning, it accomplishes this by balancing the changes made to it. The Fluency Mode helps make texts look natural and grammatically correct in English. The feature makes only minor changes to the text while still keeping the original meaning intact.

The Creative Mode changes the text as much as possible, which can alter the overall meaning; The Formal Mode makes the text sound appropriate for formal audiences; the Shorten Mode reduces word count while retaining meaning; and the Expand Mode adds more words to increase the overall length. Standard and Fluency are the only modes available to free users; all other modes are accessible to premium users (Fitria, 2021).

By utilizing this program, QuillBot users can gain access to a number of benefits, including the ability to test out QuillBot features without having to register or create an account. Additionally, it provides the users the opportunity to open a free account with generous free account usage. Moreover, downloading the output is simple with the export feature. QuillBot also has a clear, contemporary interface with no learning curve exists (Massilah, 2023). However, it has some limitations such as the availability of just two writing modes for free accounts. Choosing the best synonyms and sentence structures frequently

requires manual intervention. Also, in purchasing the premium version, the money-back

guarantee is valid for 72 hours, which is a short time to test the software (Agar, 2022).

Figure 4

QuillBot Application Interface.
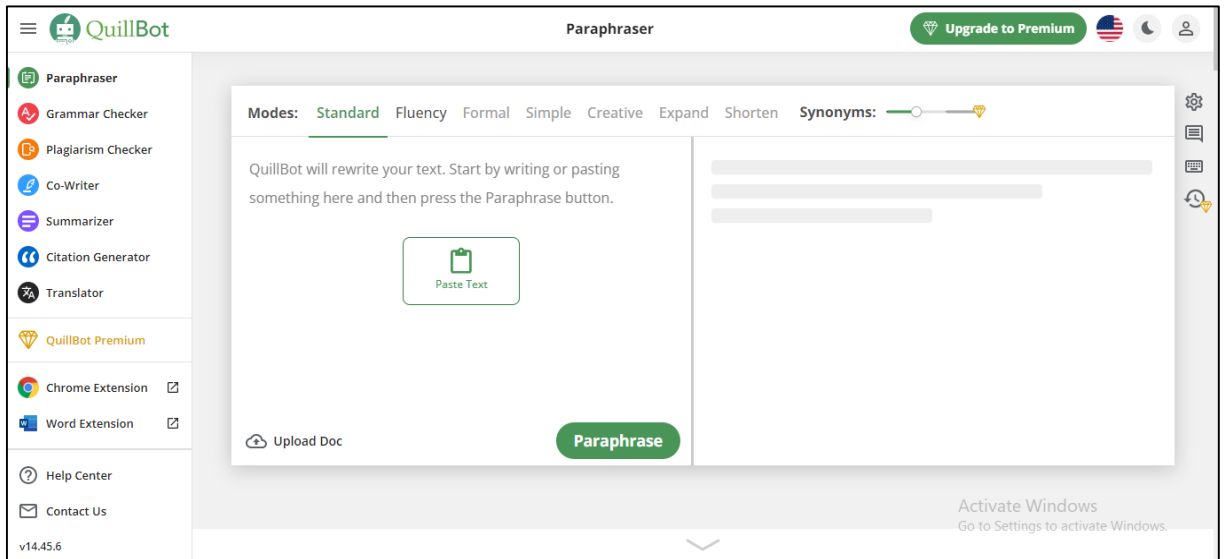
Note. Reprinted from "QuillBot", by Gupta, A, (2023, March 23). Retrieved from

https://quillbot.com/

2.4. Writing Assessment

One of the methods EFL learners employ to assess their writing performance quality is

to submit their writing work for correction. Ghufron (2019) clarifies that Corrective Feedback

(CF) is an unavoidable instructional approach used by teachers in the EFL classroom,

especially for EFL writing. It can be used to draw attention to mistakes made in EFL writing

assignments, including grammar, spelling, and diction errors in which teachers use the

technique to comment, critique, and inductively educate learners on their work. Corrective

Feedback has become a requirement for both teachers and learners, and has been practiced for

centuries in exercises, test papers, and throughout courses.

There are several kinds of corrective feedback that can be provided by the teachers in

the form of direct and indirect feedback. The direct feedback refers to the verbal reaction of

the teacher to the learners' grammatical errors during the teaching process; however, the indirect feedback lays on the teachers' indications through highlighting, underlining, circling, or coding. This variety of the teacher's feedback helps EFL learners to boost their writing skills, writing accuracy, self-confidence through self-correction, generates cognitive beliefs, and promotes learning (Ghufron, 2019).

On the other hand, Koltovskaia (2022) adds that" teacher['s] feedback [is] divided into two feedback levels: "higher-order (level) concerns (herein HOCs) and lower-order (level) concerns (herein LOCs)" (p.6). HOCs were operationalized as discourse-level feedback, which includes content, organization, coherence and cohesion, whereas LOCs were operationalized as form-level feedback, including vocabulary, grammar, syntax, morphology, and mechanics. Many scholars suggest that AWE can be considered as a" source of feedback that can complement teachers' response to Second Language (L2) writing" (Koltovskaia, p.1), where AWE can handle LOCs and has the potential to free up teachers' time to focus on higher-order concerns (HOCs).

Conclusion

Educational applications are a double-edged sword when it comes to EFL learners' writing performance. EFL learners must have a sufficient level of consciousness about how to benefit from such applications without falling into the trap of dependency in order to achieve the desired results.

Chapter Three: Research Methodology

Introduction

The current study investigates the use of Grammarly and QuillBot among EFL learners in their writing performance. As a result, this chapter is devoted to the practical and analytical findings and results obtained. It also outlines the research design, population and sample size, and data collection tools. Finally, the chapter presents the data that has been collected and discussed in order to assess the validity of the study hypotheses and derive logical conclusions and interpretations.

3.1. Research Design

In order to achieve the intended research objective, a specific research design that suits the study goal was selected, which is an investigation, to see if utilizing Grammarly and QuillBot could improve learners writing performance. Therefore, for the sake of describing and analyzing various views about Grammarly and QuillBot, the descriptive method has been chosen. Besides, a qualitative approach is usedto collect the data required for the completion of this study.

3.2. Population and Sample

The targeted population of the current study comprised Third Year students of Englishat at the University of Ghardaia. The reasons for selecting the following population are due to the fact that Third Year students are more skilled at writing, more proficient in their questionnaire responses, and the most frequent users of Grammarly and QuillBot compared to other levels based on the result of a preliminary questionnaire that was conducted by the researchers. Furthermore, the teachers were chosen based on specific features, including their familiarity with their students, their teaching experiences, and their ability to teach the same case study that our research focuses on.

To collect valuable data, forty six (46) students were precisely selected as a representative sample for the current study in addition to seven (7) teachers who were also precisely selected from the same department, with varying ages, modules, and degrees.

3.3. Data Collection

In order to fit the research needs, test the research hypotheses, and answer the research questions, a questionnaire was chosen as a data collection tool. It is intended for both teachers and students to investigate the effectiveness of Grammarly and QuillBot in enhancing EFL learners' writing performance.

3.3.1 Students' Questionnaire

3.3.1.1 Administration of the Questionnaire. The questionnaire was administered toThird Year LMD students in the English Department at Ghardaia University. they were selected randomly, with a variety of ages ranging between boys and girls. The study intended to investigate EFL learners' writing performance using Grammarly and QuillBot. In an effort to get the most responses from the students, the questionnaire was distributed during our supervisor's session since she teaches them. While 102 copies of the questionnaire were intended to be given to students in the Third Year LMD , only 76 responses were obtained. In the end, out of the 76 students making up the whole population, 46 questionnaires were selected as the study's representative sample size.

3.3.1.2. Description of the Questionnaire. The questionnaire is designed to explore the effectiveness of Grammarly and QuillBot among learners who intend to find help with their writing difficulties. Basically, the questionnaire includes twenty-one open-ended and multiple-choice questions separated into three main sections, with every section arranged with a particular aspect as follows:

Section one: Personal information (Q1- Q5): It provides broad information on the students level of writing, and their perspective on writing skills in general.

Section two: Academic Writing (Q6- Q12): it aims to gather opinions and recommendations regarding academic writing, its difficulties, and how it can be improved.

Section three: Students' Attitudes toward using Grammarly and QuillBot (Q13-Q21): it contains nine questions that indicate how familiar learners are with those applications, their effectiveness, and the quality of the feedback provided by them.

3.3.1.3 Analysis of the Questionnaire

Section One: Personal Information

Q1: How do you consider your level in writing?

Table 1

Students' Writing Level

	Very good	Good	Average	Poor
N	6	28	12	0
%	13%	61%	26%	0%

Graph 1

Students' Writing Level
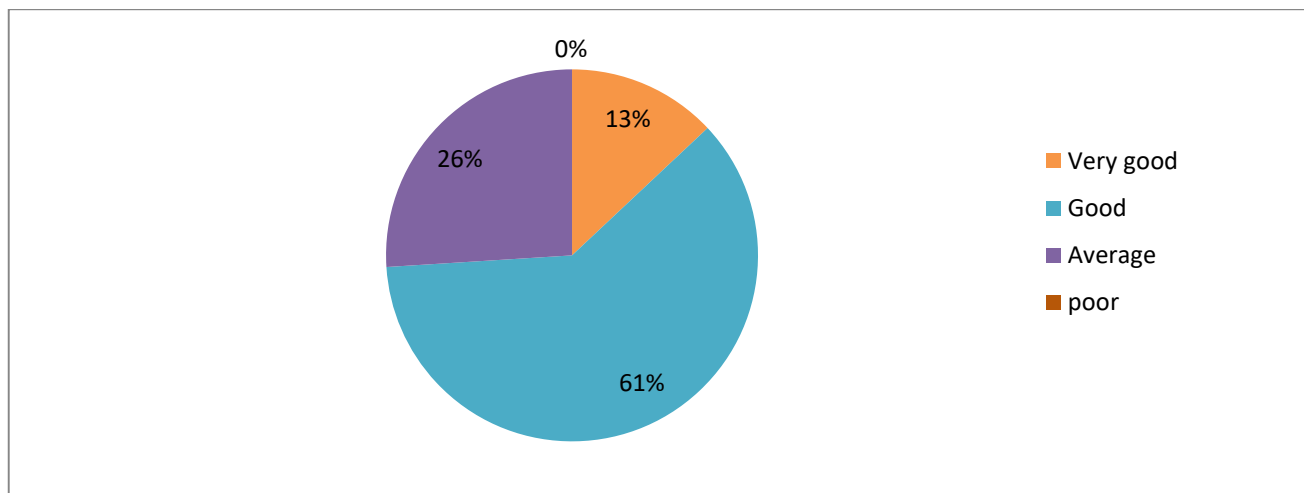
As illustrated, 61% of the students consider their level of writing as good, 26% as average, and 13% of the participants estimate that they have a very good level. None of the participants chose the fourth option to indicate their level.

Q2: In your opinion, what is the appropriate order of the following skills in terms of difficulty?

Table 2

Students' Perceptions on the Most Difficult Skills

	Speaking	Writing	Reading	Listening
N	17	10	5	14
%	37%	22%	11%	30%

Graph 2

Students' Perceptions on the Most Difficult Skills
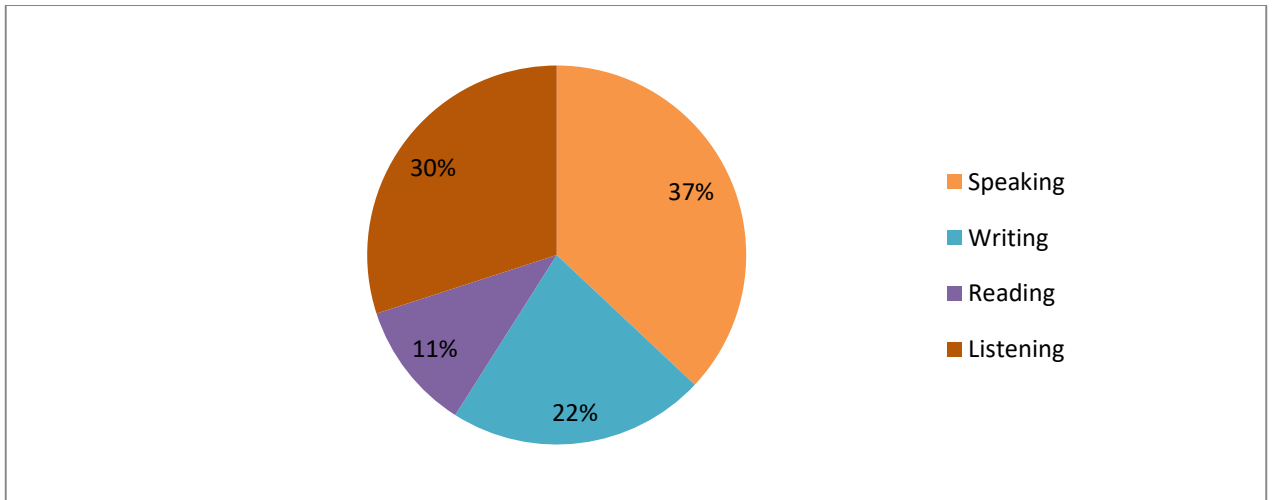
As the graph shows, 17 of the students have speaking difficulty with 37%, and listeningis a challenging skill with 30% for 14 students, while writing received 22% as a difficult skill to master among 10 students, whereas only 5 students considered reading the most difficult skill with 11%.

Q3: How do you find the writing tasks?

Table 3

Students' Opinions on the Writing Tasks

	Very easy	Easy	Difficult	Very difficult
N	8	32	6	0
%	17%	70%	13%	0%

Graph 3

Students' opinions on the Writing Tasks
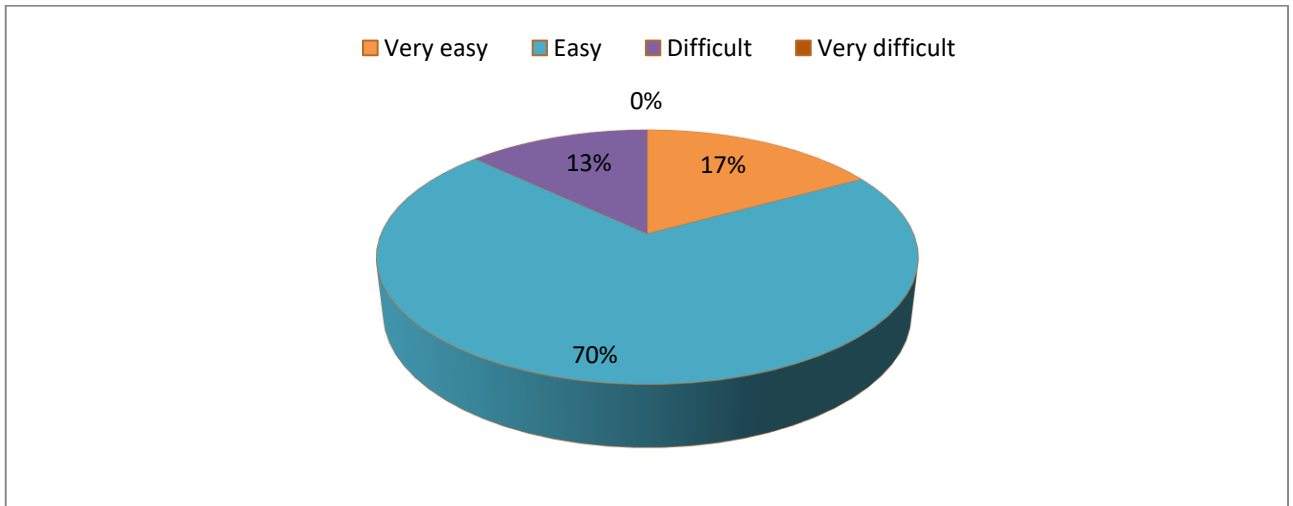
This question seeks to measure the difficulty of the writing tasks. Writing tasks are considered easy by 70% of the students, very easy by 17%, and difficult by 13%. None of the students find writing tasks very difficult.

Q4: How often do you write in a week in class?

Table 4

Students' in-Class Writing Frequency per Week

	Always	Often	Sometimes	Rarely	Never
N	8	9	18	7	4
%	17%	20%	39%	15%	9%

Graph 4

Students' in-Class Writing Frequency per Week
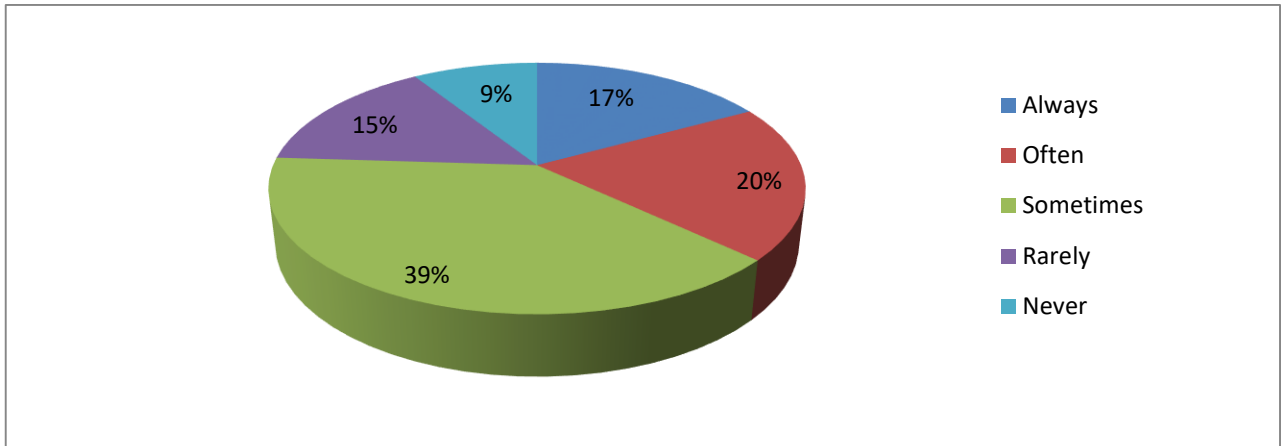
According to the graph, 39% of the students sometimes write in a week in class, 20% of them write often in class, and 17% of students always write in class, while 15% of them rarely write, whereas 9% of them never write in class.

Q5: Do you find the writing session boring?

Table 5

Students' Evaluation of the Writing Session

	Yes	No
N	6	40
%	13%	87%

Graph 5

Students' Evaluation of the Writing Session
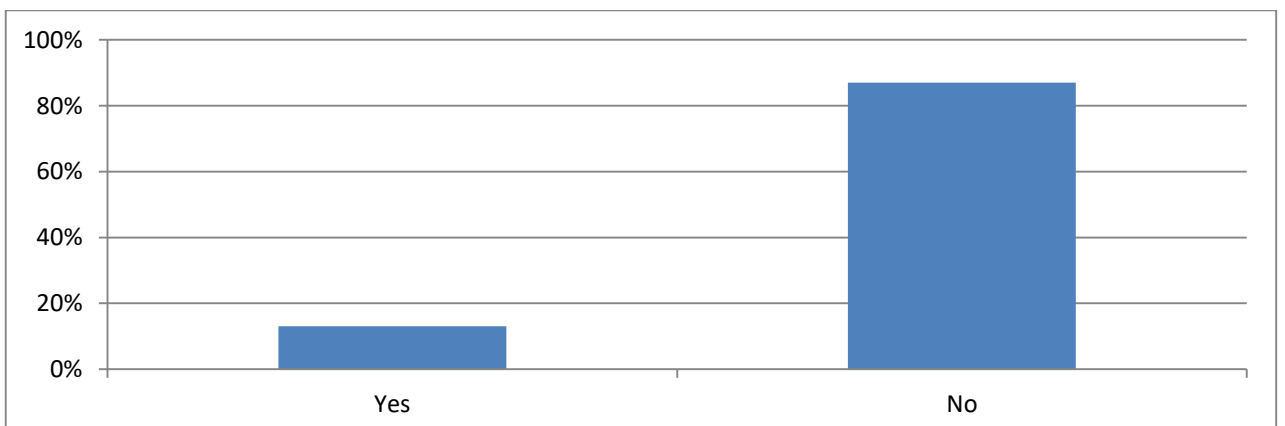
This question aims to assess the quality of the writing sessions. A majority of the students, with 87%, do not find the writing session boring, whereas 13% of the students consider the opposite. The majority of the students enjoyed the writing session due to the teacher's role, learning through groups and presuming enrichment in their language level. They also note that they were able to express themselves, share their ideas, use their imaginations, and develop their ability to put their thoughts into words through writing sessions.

Besides, it is important to them since it is related to their academic career in particular and to their daily lives in general. Whereas, the others consider writing a boring session due to lack of motivation to write and prefer speaking over writing.

Section Two: Academic Writing

Q6: Do you think your academic writing has improved over the last three years?

Table 6

Students' Review of Their Academic Writing Improvement

	Yes	No
N	39	7
%	85%	15%

Graph 6

Students' Review of Their Academic Writing Improvement
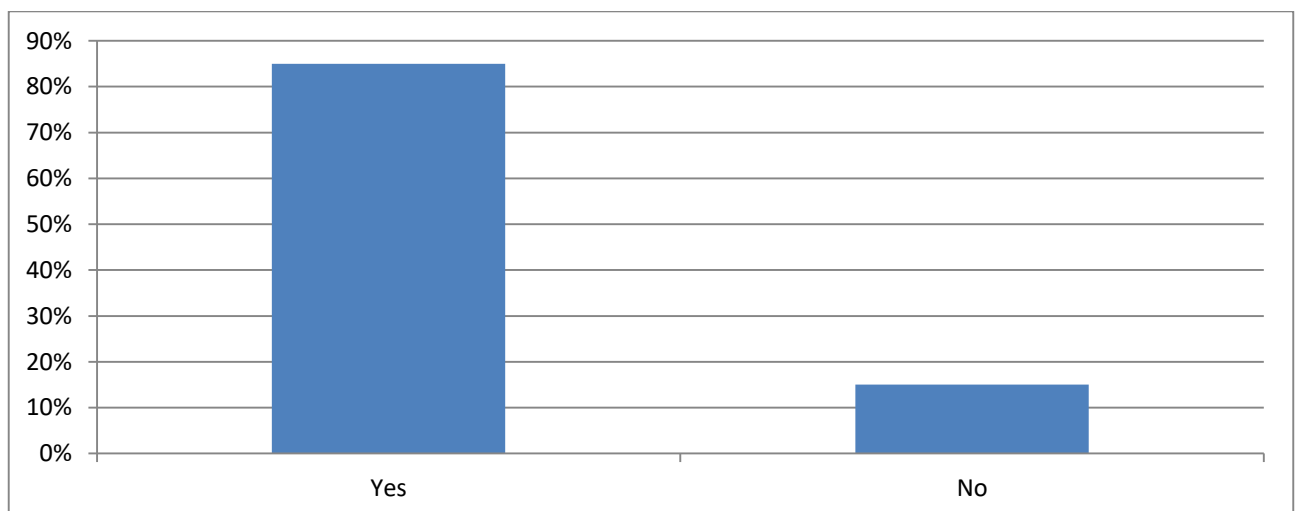
The majority of the students, with 85%, noticed improvements in their academic writing over the last three years; on the other hand, 15% of them did not notice any improvement. Students justified their improvement in writing with the appropriate curriculum, their own efforts, and the involvementof the teacher. Whereas the rest of the students admit that lack of motivation and lack of practice are the main barriers preventing them from noticing anyimprovement.

Q7: Was your progress in academic writing due to?

Table 7

Students' Academic Writing Progress

	Own efforts	Instructional support
N	31	15
%	67%	33%

Graph 7

Students' Academic Writing Progress
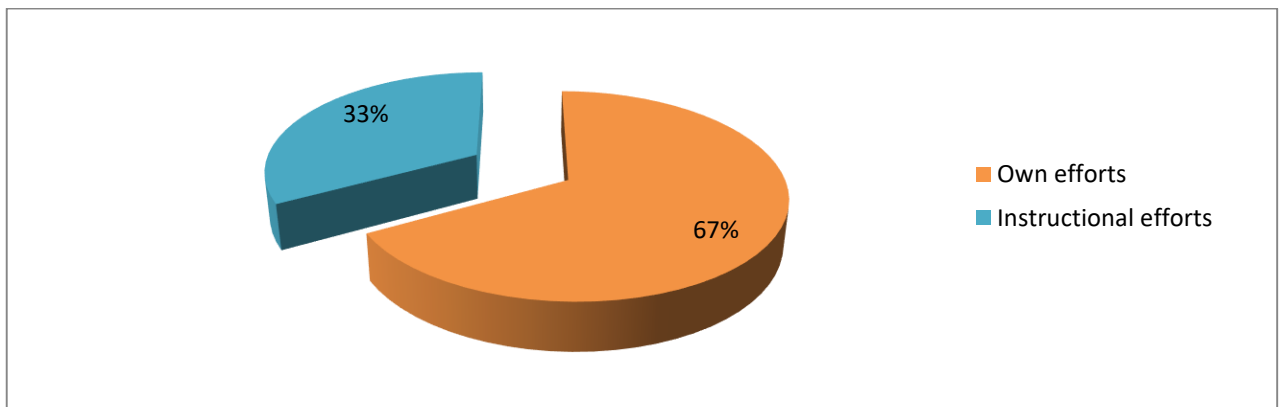
The graph above shows that 67% of the students progressed in academic writing due to their own efforts, while 33% of them progressed due to instructional support.

Q8: Do you have some difficulties while writing?

Table 8

Students Writing Difficulties

	Yes	No
N	31	15
%	67%	33%

Graph 8

Students Writing Difficulties
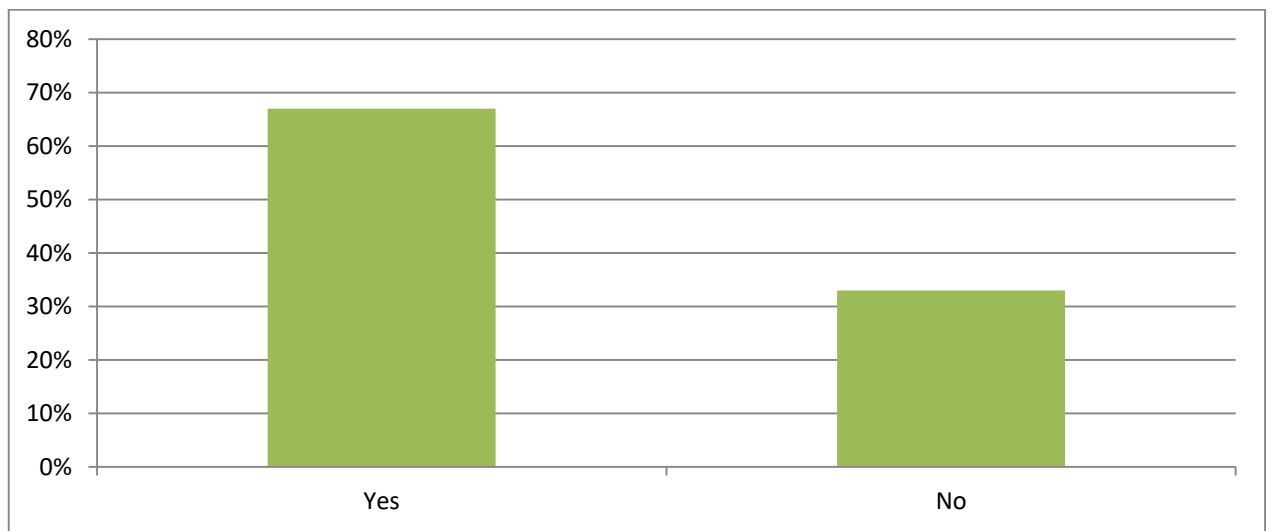
The aim behind asking such a question was to know whether students face difficulties while writing or not. The results show that 67% of them face difficulties during their writing, while 33% of them don't.

Q9: What are the main difficulties that you have?

Table 9

Main Students' Writing Difficulties

	The organization of the production	Vocabulary	The organization of ideas	Grammar	Conventions of ideas	Others
N	6	6	4	16	12	2
%	13%	13%	9%	35%	26%	4%

Graph 9

Main Students' Writing Difficulties
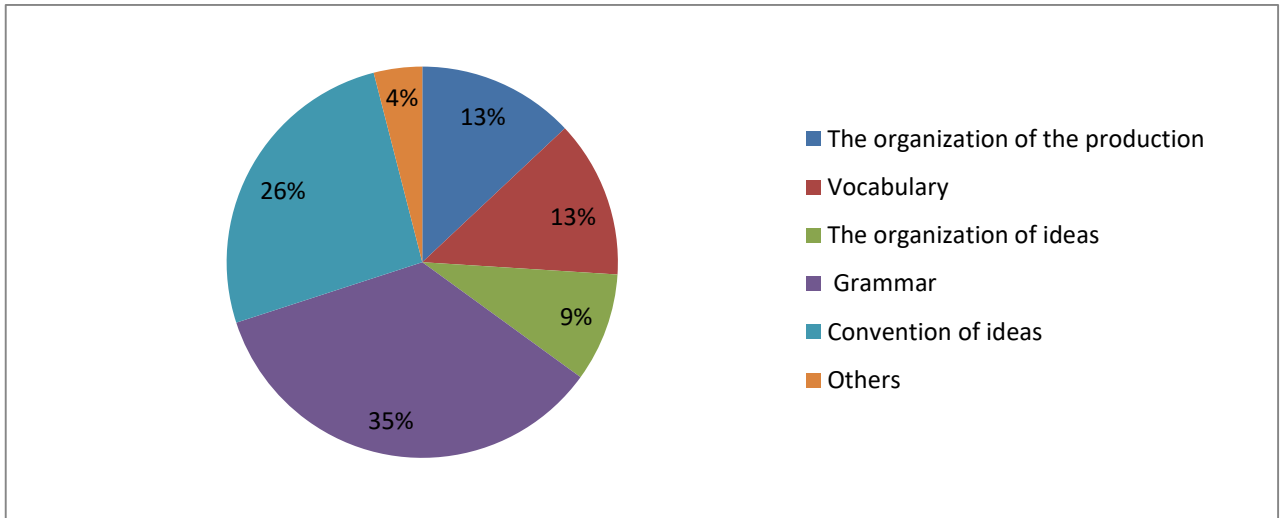
Students face difficulties in grammar with 35%, 26% was for conventions of ideas, the

organization of the production and vocabulary shared the same percentage with 13%, and 9%

of them struggle with the organization of ideas. Meanwhile, students with 4% add other

difficulties such as spelling mistakes and brainstorming.

Q10: Do you think that these difficulties are due to?

Table 10

Reasons behind Students Writing Difficulties

	Insufficient time	Teacher's role	Lack of motivation to write	Your level in writing	Others
N	6	6	17	17	0
%	13%	13%	37%	37%	0%

CHAPTER THREE : RESEARCH METHODOLGY

Graph 10

Reasons behind Students Writing Difficulties
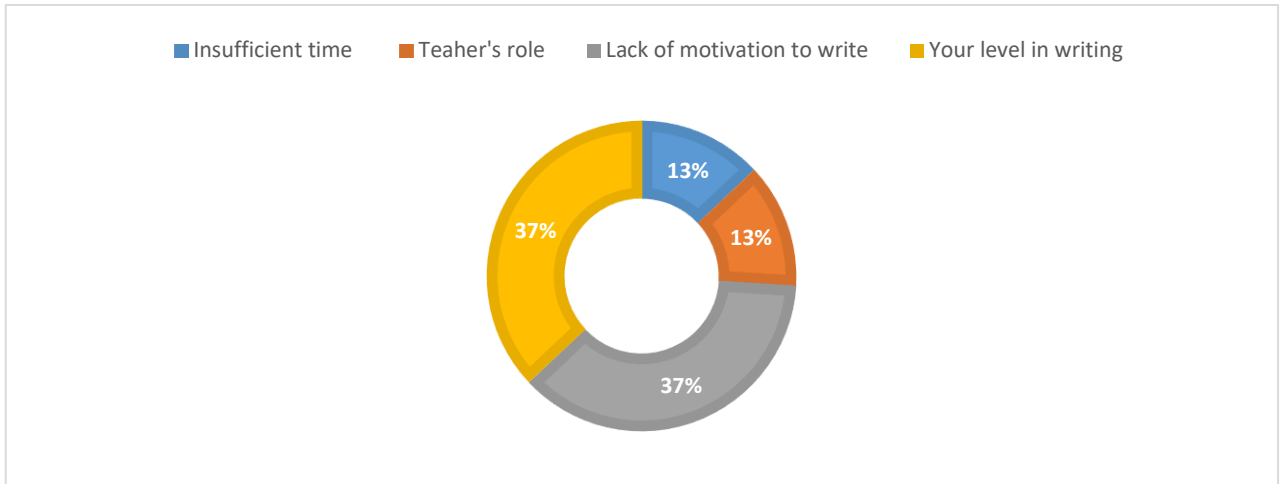
The analysis of the results shows that 37% of the reasons for students' difficulties are lack of motivation and their level of writing, while insufficient time and teacher's role shared the same result with 13%.

Q11: What tools do you use to overcome your writing difficulties?

Table 11

Students Preferred Tools to Overcome Writing Difficulties

	Educational applications	Dictionaries	Books
N	22	12	12
%	48%	26%	26%

Graph 11

Students Preferred Tools to Overcome Writing Difficulties
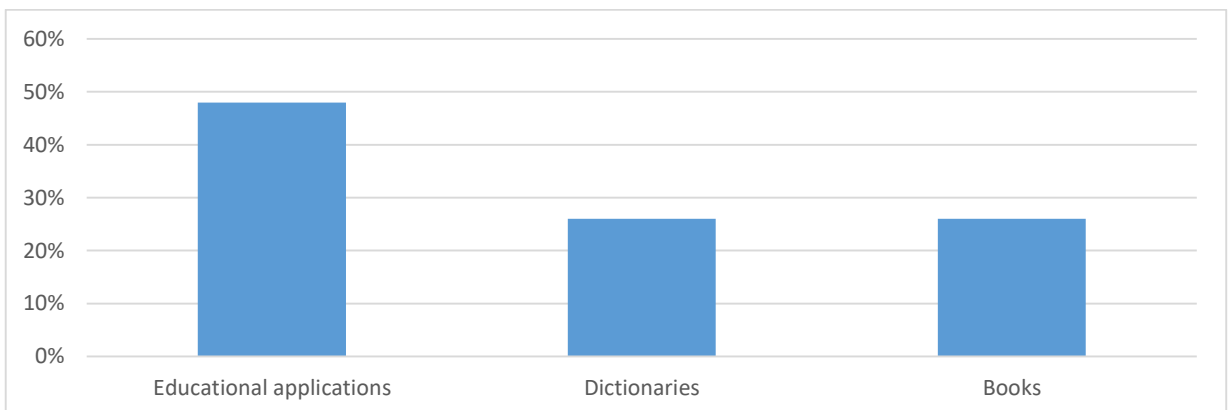
The majority of the students, with 48%,preferred to use educational applications to overcome their writing difficulties, while 13% chose to use dictionaries and books.

Q12: According to you, what can you recommend to improve the effectiveness of the writing session?

Table 12

Students Recommendation to Improve the Writing Session

	Answered	Skipped
N	17	29
%	37%	63%

Graph 12

Students Recommendation to Improve the Writing Session
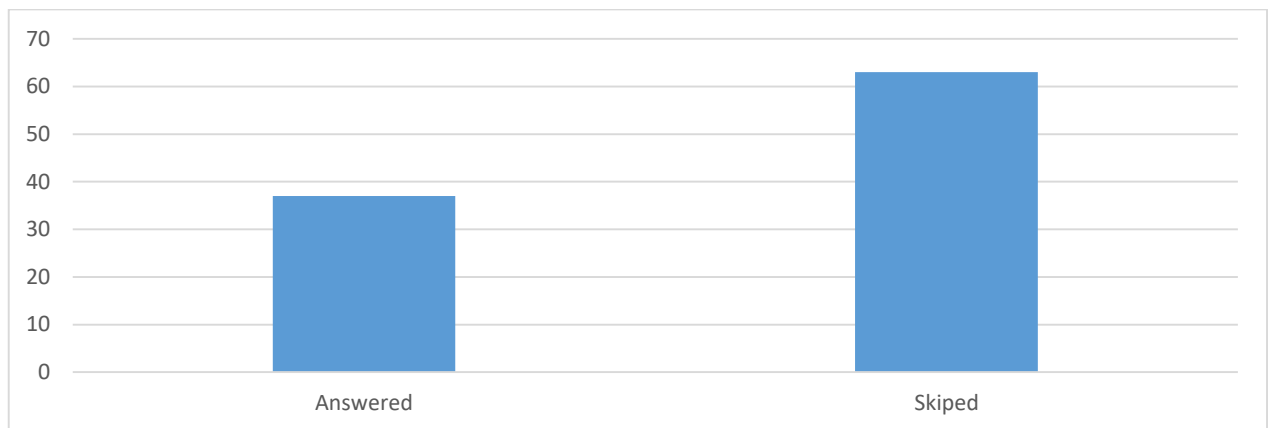
This question aims to provide some students' recommendations to improve the effectiveness of the writing session. Students with 37% suggest:"more you read, more you write". Also, practicing more writing tasks in class under the teacher's supervision. Besides, the awareness of vocabulary and grammar adds value to the writing session. Adopting new methods of teaching and correcting, besides extrinsic and intrinsic motivation, are some of the other recommendations that were suggested by students.

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Section Three: Students Attitude towards Using Grammarly and QuillBot

Q13: What do you use QuillBot and Grammarly for?

Table 13

Students' Purposes of Using Grammarly and QuillBot

	Grammar checking	Paraphrasing	Mastering writing mechanics	Summarizing	Others
N	20	11	4	9	2
%	43%	24%	9%	20%	4%

Graph 13

Students' Purposes of Using Grammarly and QuillBot
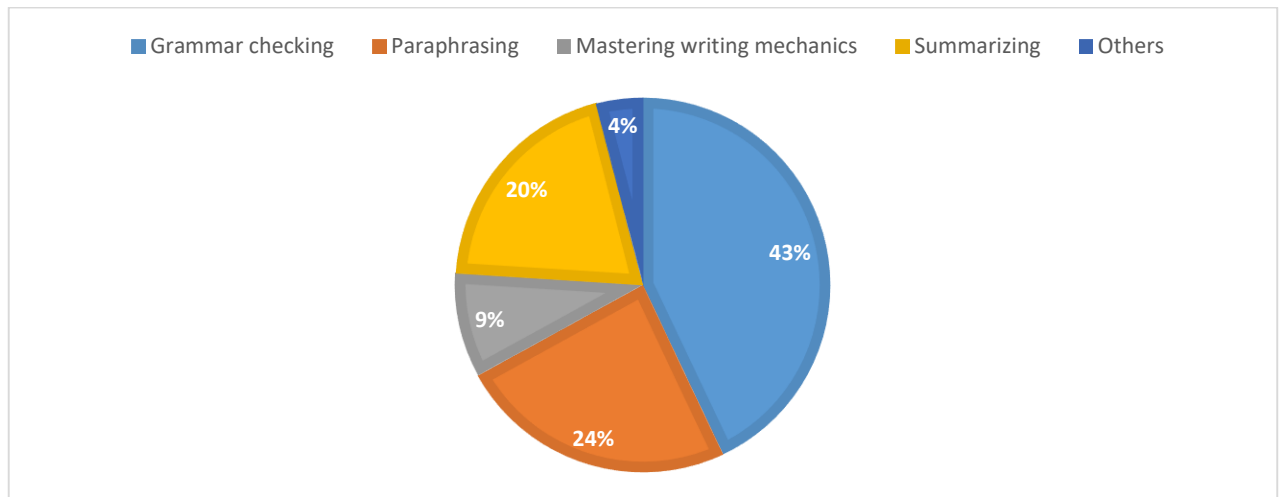
   The graph above illustrates the purposes of students for using Grammarly and

QuillBot. The results indicate that 43% of the students use them for grammar checking, 24%

to paraphrase, 20% for summarizing, and 9% for mastering writing mechanics.

However, only 2 students making up 4% of the sample admitted that they do not use

Grammarly and QuillBot.

Q14: Why do you use those applications?

Table 14

Students' Reasons behind Using Grammarly and QuillBot

	Insufficient teacher feedback	Laziness	Lack of time	Others
N	9	12	21	4
%	19%	26%	46%	9%

Graph 14

Students' Reasons Behind Using Grammarly and QuillBot
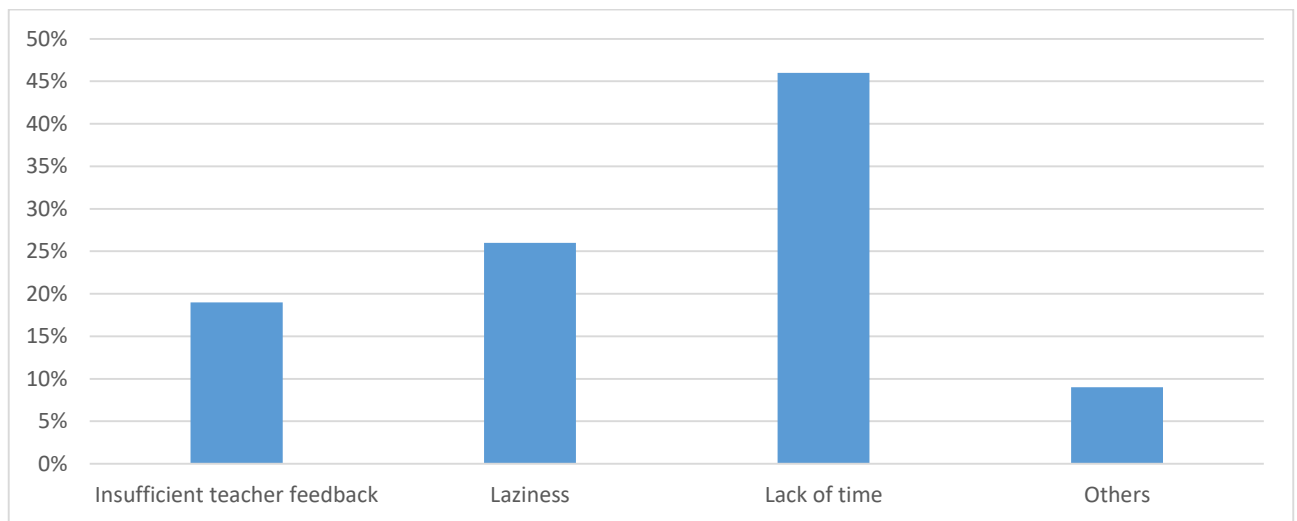
  The aim of this question is to know the reason behind using such applications. From the above graph, 46% of the students stated that they use those applications due to a lack of time.Laziness received 26% of the votes as a reason to use those applications, while 19% cited insufficient teacher's feedback. 9% of them answered differently, in which 7% mentioned that they do not use such applications in their writing, and 2% said they use them just to make sure of their writing.

Q15: Do you view QuillBot and Grammarly as?

Table 15

Students' Views on Grammarly and QuillBot

	Learning tool	Checking tool	Both
N	12	30	4
%	26%	65%	9%

Graph 15

Students' Views on Grammarly and QuillBot

The graph above illustrates how students view Grammarly and QuillBot in terms of their experience with those applications. The majority of the students, with 65%, consider those applications a checking tool, whereas 26% of them find them a learning tool. Meanwhile, students who views Grammarly and QuillBot as checking and learning tools are estimated at9%.

Q16: Would you say your writing has improved since utilizing such apps?

Table 16

Students' Opinions on the Effectiveness of Using Grammarly and QuillBot

	Yes	No
N	28	18
%	61%	39%

Graph 16

Students' Opinions on the Effectiveness of Using Grammarly and QuillBot
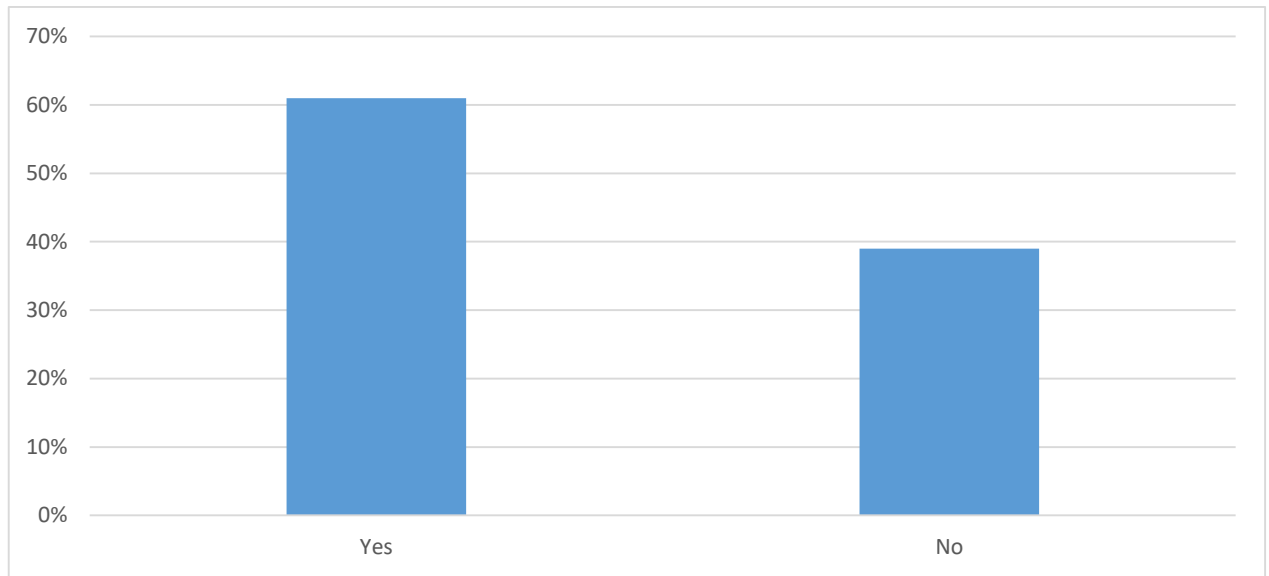
This question is to investigate the effectiveness of Grammarly and QuillBot according to students' views. 61% noticed an improvement in their writing after using those applications, justifying their answers as helpful, effective, and guaranteed applications to checking mistakes, acquiring new vocabulary, and expressing and organizing ideas; while39% denied any improvement had taken place in their writing.

Q17: Do you fully use the provided answer by QuillBot and Grammarly without any changes made by you?

Table 17

Students' Extent of Using Grammarly and QuillBot Answers

	Yes	No
N	12	34
%	26%	74%

Graph 17

Students' Extent of Using Grammarly and QuillBot Answers
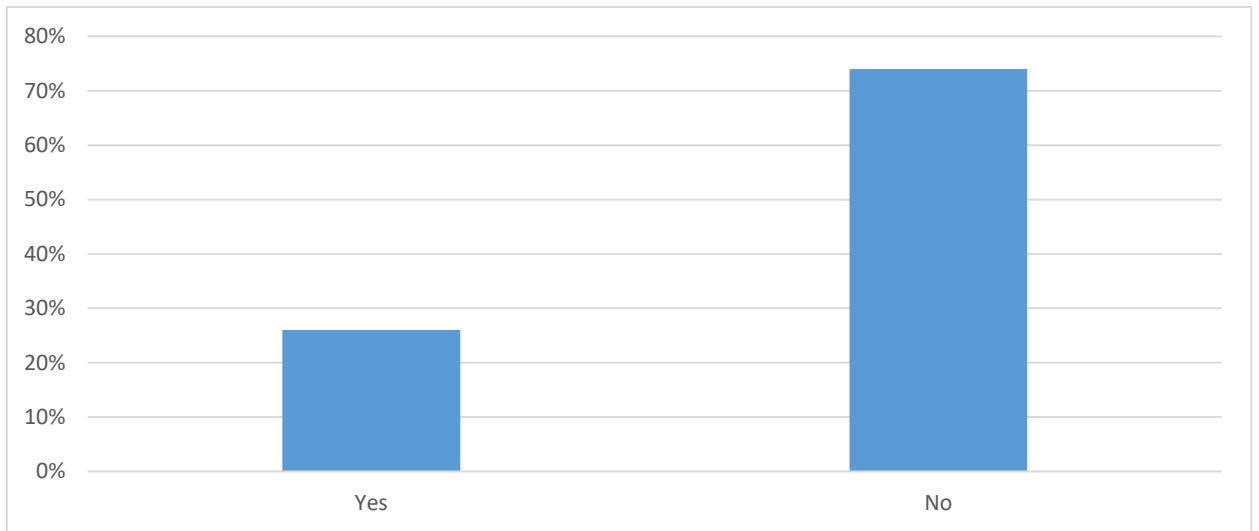
As it is expected from the question, 74% of the students claimed that they did not fully use the provided answer by Grammarly and QuillBot. Meanwhile, 26% acknowledged that they use the answer as it is provided.

Q18: To what extent do you trust your writing without using these applications?

Table 18

Students' Writing Confidence without Using Applications

	Strongly trust	Trust	Distrust	Strongly distrust
N	5	33	7	1
%	11%	72%	15%	2%

Graph 18

Students' Writing Confidence without Using Applications
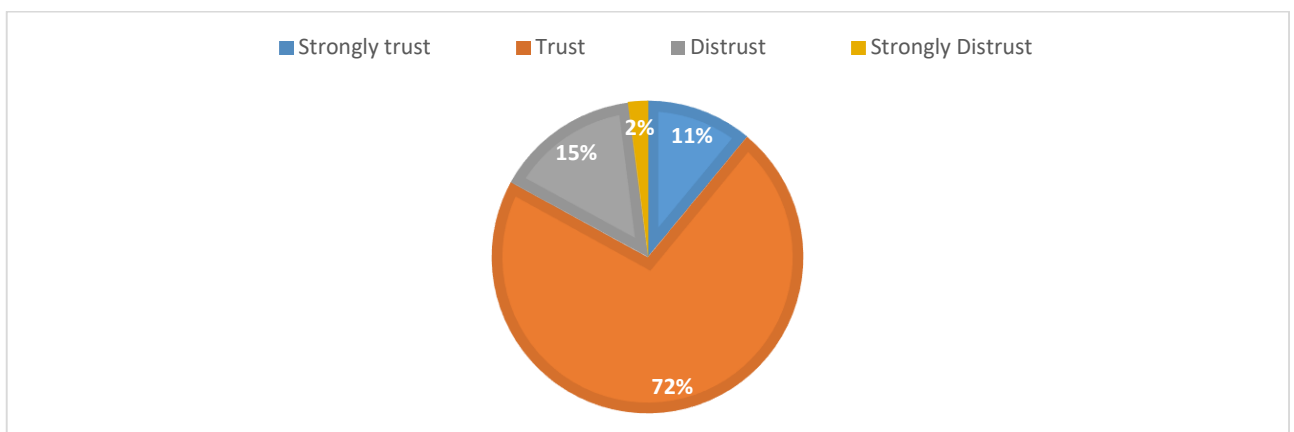
The results of the graph show that 72% of students trust their writing without using Grammarly and QuillBot. 11% of them strongly trust their writing. However, students who distrust their writing are 15%, while 2% strongly distrust their writing without using those applications.

Q19: Despite having previously utilized Grammarly and QuillBot, are you having trouble in writing during your exam?

Table 19

Students Difficulties with Writing during Exams despite Using Grammarly and QuillBot

	Yes	No
N	16	30
%	35%	65%

Graph 19

Students Difficulties with Writing during Exams despite Using Grammarly and QuillBot
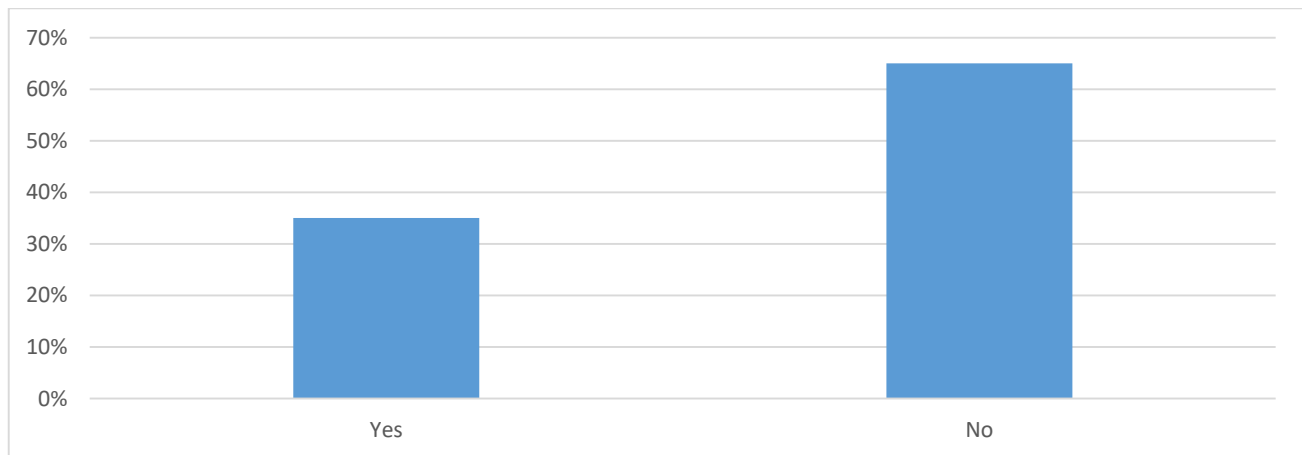
This question seeks to know if students are still having trouble writing during their exams despite having previously utilized Grammarly and QuillBot. The results show that 65% of the students do notfind any trouble writing during exams; however, 35% of the students are still struggling with exams when writing.

Q20: Do you prefer your writing feedback be in?

Table 20

Students' Preferred Feedback Form

	Written form	Oral form	Both
N	25	18	3
%	54%	39%	7%

Graph 20

Students' Preferred Feedback Form
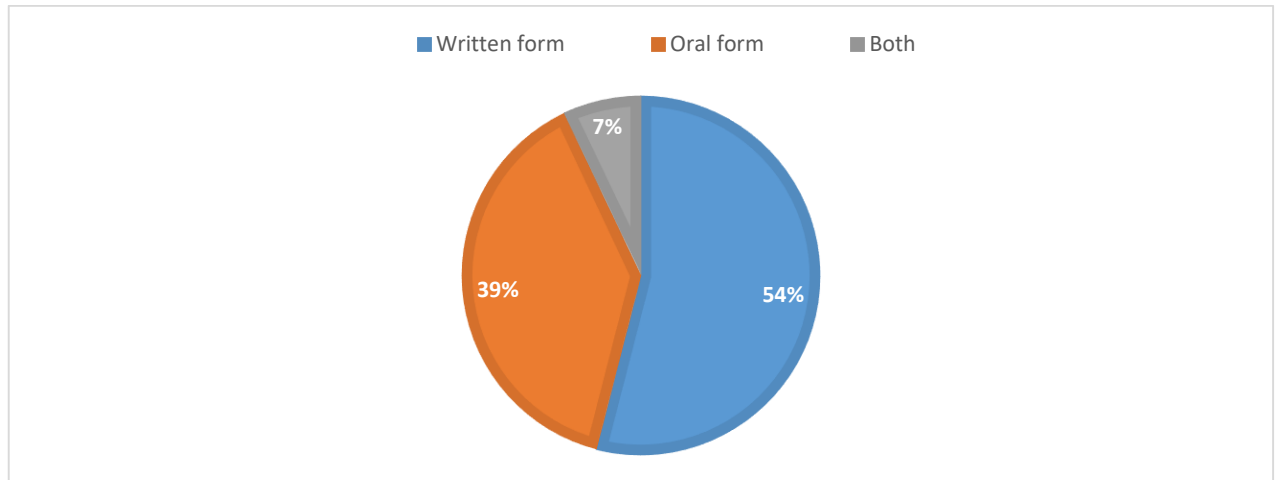
The result achieved from the above graph reveals that most of the students, with 54%, prefer feedback in written form, justifying their position as it is easy to memorize, a chance to discover their mistakes in an organized and detailed way, and they consider it a less harsh and soft way to receive their feedback, while39% prefer their feedback to be in oral form, justifying it as easier to remember and easier than writing. 7% of the students would rather receive their feedback in both written and oral forms.

Q21: Which do you value more?

Table 21

Students' Valued Feedback

	Teacher's feedback	Applications' feedback	Both
N	31	13	2
%	68%	28%	4%

Graph 21

Students' Valued Feedback
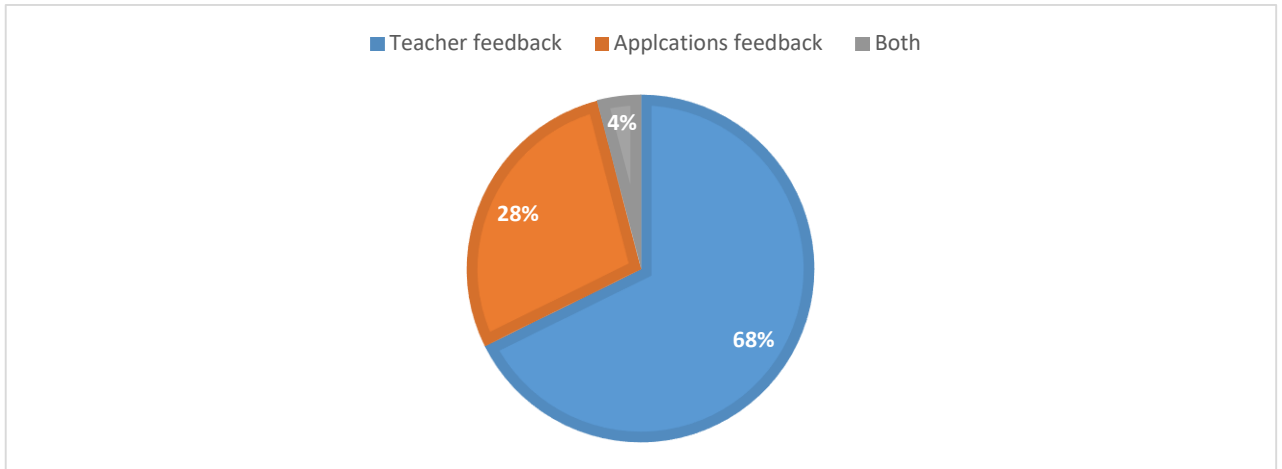
The aim of this question is to see which feedback the students value more. Students with 68% value teachers' feedback more than applications feedback with 28% whereas 4% of the students can not eliminate both of them.

3.1.1.4. Discussion of the Students' Questionnaire. The chapter provides

the analysis of the students' questionnaire results which were administered to Third Year students to investigate their writing performance using Grammarly and QuillBot. According to the findings, academic writing is considered challenging for students. Additionally, Grammarly and QuillBot succeed in enhancing the student's academic writing.

Analyzing the first section, which deals with personal information, indicates that Third Year students have a good level in writing since they consider speaking and listening to be the most difficult skills compared to writing. As a result, the majority of the students find the writing tasks easy, even though they write sometimes in a week in a class. This is attributed to the enjoyment of most students in the writing session due to the teacher's role, learning through groups, and presuming enrichment in their language level, in which they consider it a chance to express themselves, share their ideas, use their imaginations, and develop their ability to put their thoughts into words through writing sessions.

Furthermore, most of them are between 20 and 25which makes them competent in their studies and not preoccupied with other pressing engagements and allows them to make more effort to perform better in their academic careers. Females, especially, took a greater part in mastering the writing skill compared to males, which indicates that they are interested and serious about their education.

Concerning the second section, it is centered on taking a closer look at the students' academic writing situation. The majority of the students have noticed an improvement in their academic writing over the last three years, crediting this progress to their own efforts, the appropriate curriculum, and the involvement of the teacher. Even though a significant part of them encounters difficulties related to academic writing in terms of grammar and conventions of ideas (punctuation, capitalization, etc.) due to their level of writing and lack of motivation to write.

As a result, they use educational applications as a tool to overcome their writing difficulties. Besides, they contribute with recommendations to improve the effectiveness of the writing session, such as focusing more on reading, practicing more writing tasks in class under the teacher's supervision, being aware of vocabulary and grammar that will add worthiness to writing sessions, adopting new methods of teaching and correcting, besides increasing the extrinsic and intrinsic motivation.

The interpretation of the third section about students' attitude toward using Grammarly and QuillBot proved that students use those applications for grammar checking and paraphrasing purposes on account of lack of time and laziness. Despite the fact that the majority of them consider Grammarly and QuillBot more of a checking tool than a learning tool, they emphasize an improvement in their writing since utilizing those applications. These apps are regarded as guaranteed applications to check mistakes, acquire new vocabulary, and express and organize ideas.

Additionally, with all the advantages presented by Grammarly and QuillBot, students confirm that those applications make them more confidentin their writing, less troubled with writing during exams and more skilled as they do not fully rely on the answers provided by the applications. Moreover, in the stage of writing assessment by the teacher, students value teacher's feedback more than applications feedback, which should be in a written form.

In light of the findings, it can be concluded that Third Year students have a good level of academic writing, despite facing some difficulties. This did not prevent them from seeking solutions to overcome their difficulties.In parallel, with the spread of artificial intelligence, students are finding access to educational applications at their fingertips. As a result,their writing performance was positively affected by the educational applications.That is to say, the obtained results are consistent with our research hypothesis that Third Year students have a favorable opinion on utilizing Grammarly and QuillBot.

3.3.2. Teachers' Questionnaire

3.3.2.1. Administration of the Questionnaire. The questionnaire was administered to nine teachers who teach Third Year students only in the English Department of Ghardaia University. Anattempt was made to gather different teachers' opinions about the effectiveness of Grammarly and QuillBot on EFL learners' writing performance. The questionnaire was delivered via email to nine teachers individually through a Google Form; only seven responses were received. Nevertheless, the teachers were cooperative by sharing their experience with us, in which they answered the questionnaire in a short period of time.

3.3.2.2. Description of the Questionnaire. With the purpose of providing further information and reaching the desired goals of the following research, we designed a valuable teachers' questionnaire to investigate the effectiveness of Grammarly and QuillBot in enhancing EFL learners' writing performance. Substantially, the questionnaire consisted of

twenty open-ended and multiple-choice questions divided into four main sections, each with a particular aspect, as follows:

Section one. Academic Writing (Q1- Q7): It attempts to capture teachers' views on their students' proficiency in academic writing, the most of mistakes they committed, and the reasons behind them.

Section two. Educational Applications "Grammarly and QuillBot" (Q8-Q11): It reveals the teachers' familiarity with educational applications, their degree of trust in the services provided by them, as well as their perspectives on the influence educational applications have had on English teachers and their students.

Section three. Teachers' Attitudes toward Educational Applications "Grammarly and QuillBot" (Q12-Q16): It aims to gather information about the effectiveness of Grammarly and QuillBot on the students' writing performance through teachers' opinions.

3.3.2.3. Analysis of the Questionnaire

Section One: Academic Writing

Q1: The actual level of most of your students in writing is:

Table 22

Teachers' Views on Ttheir Students Writing Level

	Beginner	Intermediate	Advanced
N	3	0	4
%	43%	0%	57%

Graph 22

Teachers' Views on Their Students Writing Level
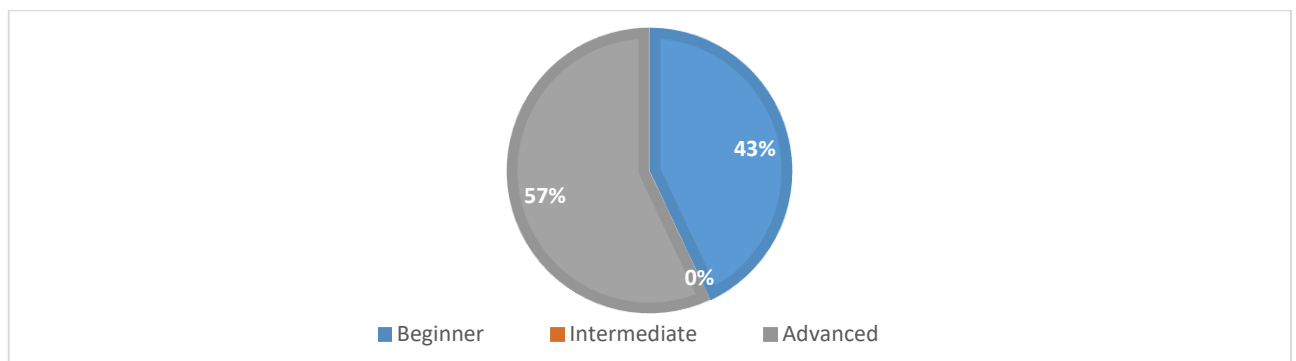
The current questions reveal how to evaluate the students level of academic writing through their teacher's views. While 57% of the teachers considered their students to be at an advanced level in writing, 43% believed their students are still beginners. The intermediate level did not represent any student level.

Q2: When you ask your students to write an assignment they are:

Table 23

Teachers' Evaluation of Students Writing Assignments Interest

	Very interested	Interested	Bored	Not interested
N	0	2	5	1
%	0%	25%	62.5%	12.5%

Graph 23

Teachers' Evaluation of Students Writing Assignments Interest
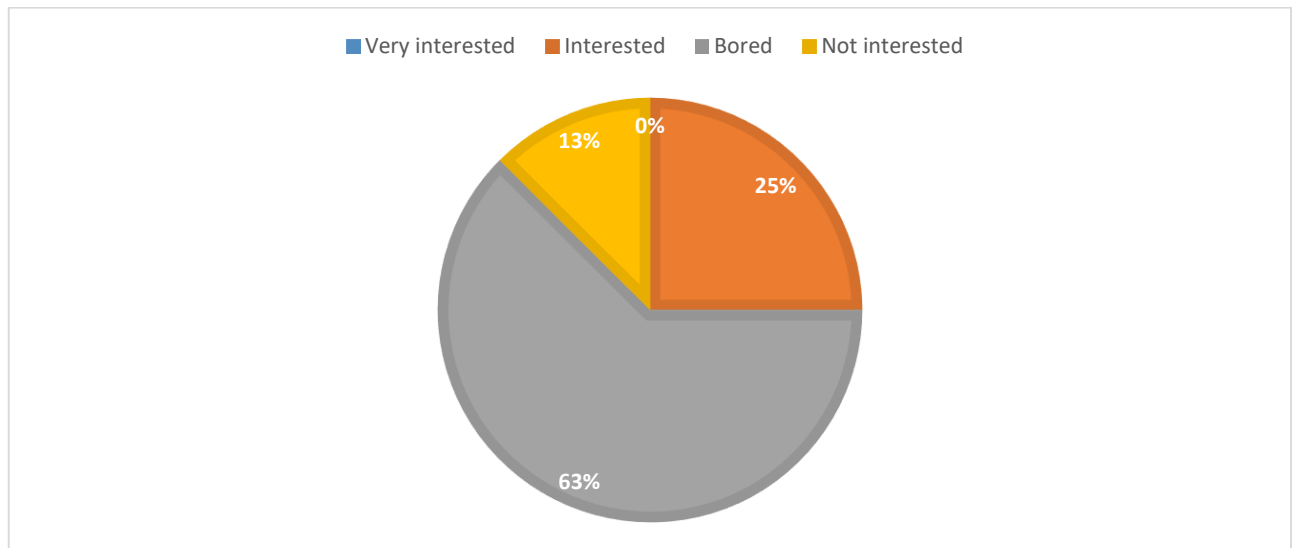
As illustrated, 62% of students feel bored when receiving writing assignments, and 13% of them are not interested at all. On the other hand, 25% of the students are interested in writing assignments, whereas no one is excited or very interested in writing.

Q3: What kind of mistakes students make in their writing?

Table 24

Teachers' Remarks on Students Writing Mistakes

	Grammar	Vocabulary	Spelling	Punctuation	Others
N	7	5	4	6	1
%	30.4%	21.8%	17.4%	26.1%	4.3%

Graph 24

Teachers' Remarks on Students Writing Mistakes
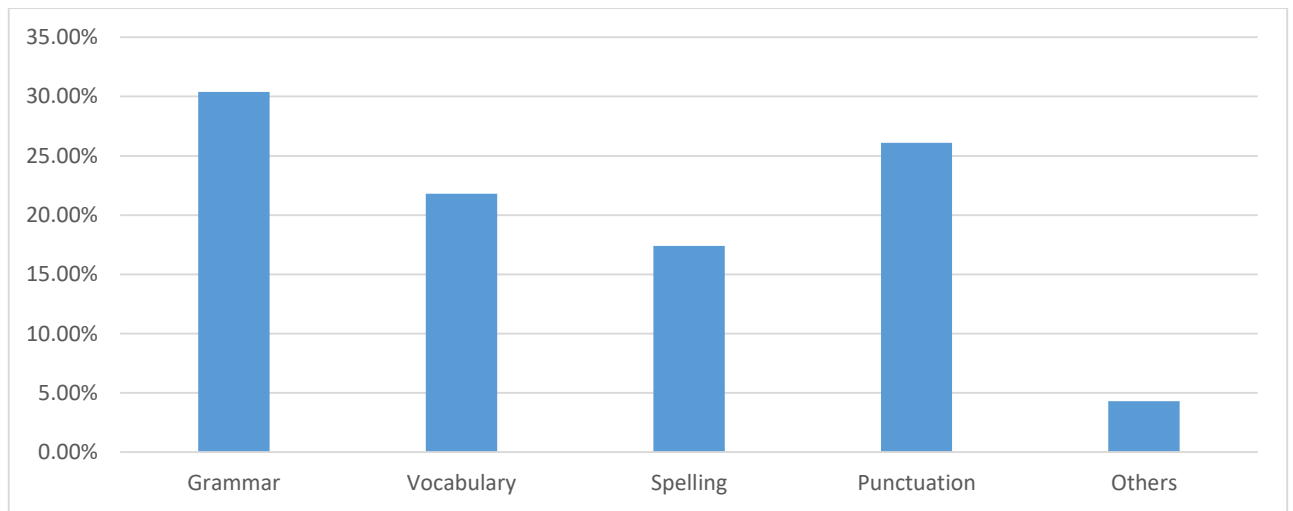
As the graph shows, most of the teachers with 30.4% confirm that students make mistakes in grammar, 26.1% in punctuation, 21.8% in vocabulary, and 17.4% in spelling. One teacher with 4.3% adds lack of coherence and cohesion as a kind of students' writing difficulty.

Q4: What are the reasons behind these mistakes?

Table 25

Teachers' Perceptions on Their Students Writing Mistakes

	Teacher's role	Insufficient time	Lack of motivation	Others
N	2	3	6	3
%	14.3%	21.4%	42.8%	21.4%

Graph 25

Teachers' Perceptions on Their Students Writing Mistakes
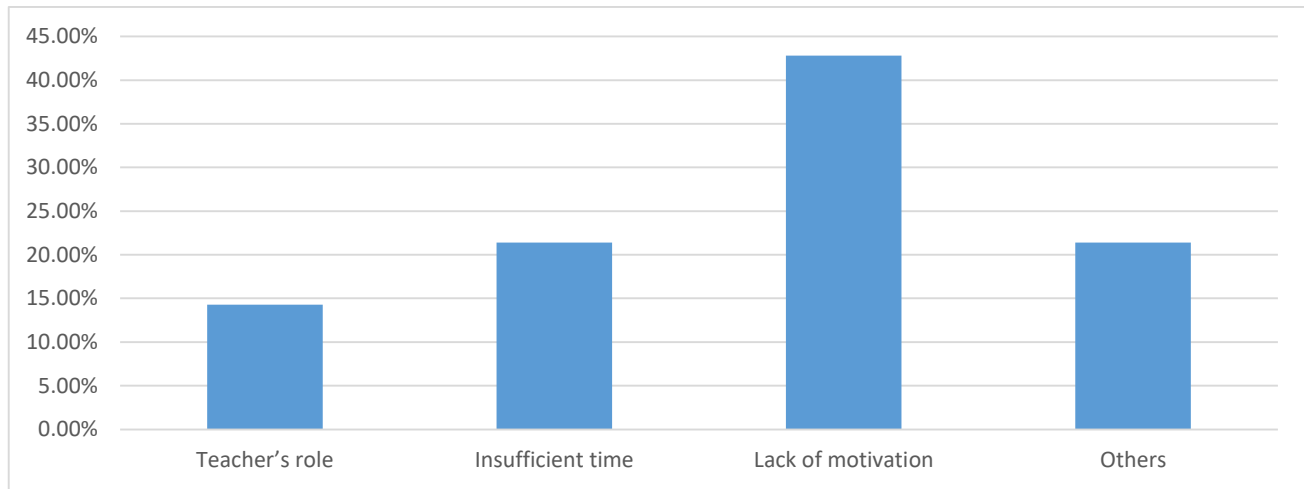
The result presented on the above graph aimed to seek the reasons behind students' writing mistakes from a teacher's point of view. Lack of motivation received 42.8% of the teachers' responses; 21.4% considered these mistakes to be made because of insufficient time, and 14.3% of the answers were due to the teachers' role. Additionally, 21.4% added other reasons such as lack of practice, lack of basics, and not enough effort from the students.

Q5: Do you think learners' take into consideration teachers' feedback?

Table 26

Teachers' Predictions on Whether Learners Take into Consideration Their Feedback.

	Yes	No
N	5	2
%	71%	29%

Graph 26

Teachers' Predictions on Whether Learners Take into Consideration Their Feedback.
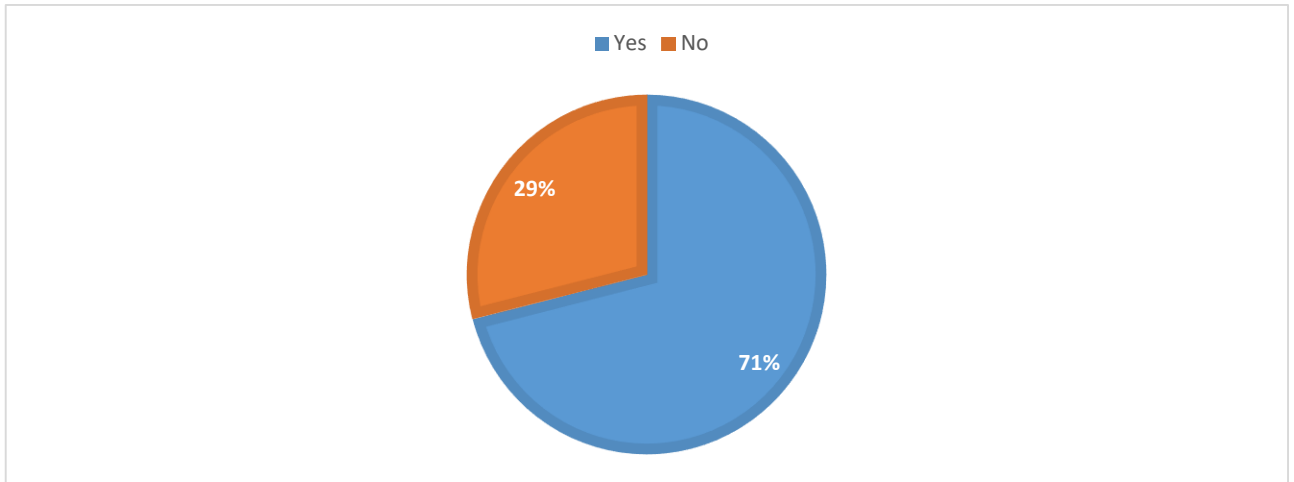
The majority of the teachers with 71% believe that their students take teacher's feedback into consideration, whereas only 29% do not.

Q6: Writing in second language is an easy task to teach?

Table 27

Teachers' Opinions on Teaching Writing in Second Language

	Yes	No
N	0	7
%	0%	100%

Graph 27

Teachers' Opinions on Teaching Writing in Second Language
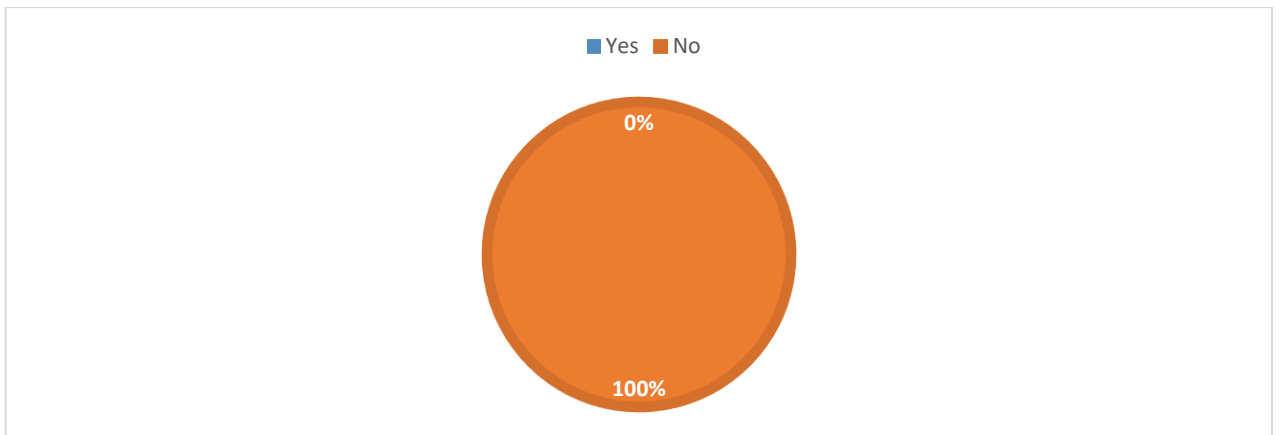
All the teachers agreed that teaching writing in a second language is not an easy task.

The teachers justified their answers with the following: students lack of motivation, readiness,

mastering language aspects, and reading. Besides, they added the influence of the first language, and the fact that different styles between FL and SL makes it difficult to teach writing in SL.

Q7: As a teacher, what qualities do you look for in good writing?

Table 28

Teachers Preferred Good Writing Qualities

	Grammar	Coherence and Cohesion	Writing Mechanics	Clarity
N	4	6	5	5
%	20%	30%	25%	25%

Graph 28

Teachers Preferred Good Writing Qualities
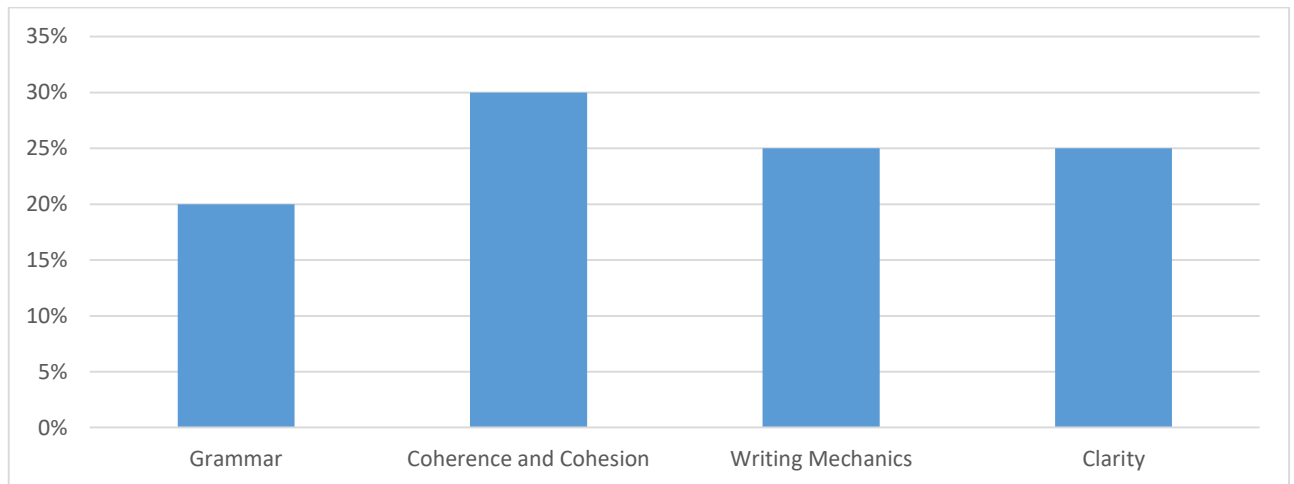
This question aims to highlight the qualities that the teacher looks for in students' writing. Coherence and cohesion were the main concern for the teachers with 30%. writing mechanics and clarity gained 25% of the total answers as one of the qualities teachers care for. Unexpectedly, grammar was not among the teachers' top interests since it received only 20% .

Section Two: Educational Applications "Grammarly and QuillBot"

Q8: Are you familiar with using educational applications in writing?

Table 29

Teachers Familiarity with Educational Applications

	Yes	No
N	4	3
%	57%	43%

Graph 29

Teachers Familiarity with Educational Applications
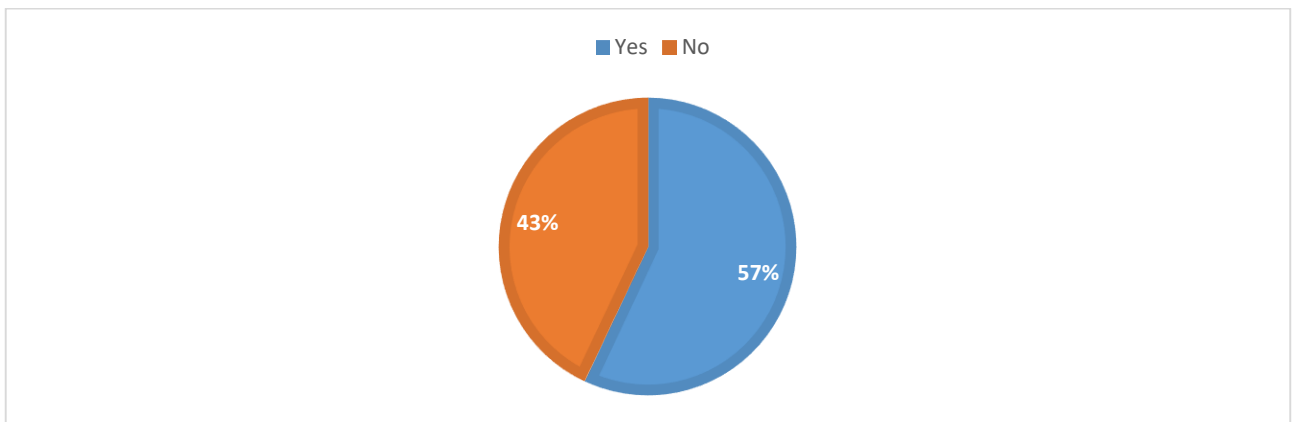
Most of the teachers are familiar with using educational applications in writing with

57% whereas 43% of them are not.

Q9: Do you use Grammarly and QuillBot?

Table 30

Teachers' Usage of Grammarly and QuillBot

	Yes	No	Others
N	2	5	1
%	25%	62.5%	12.5%

Graph 30

Teachers' Usage of Grammarly and QuillBot
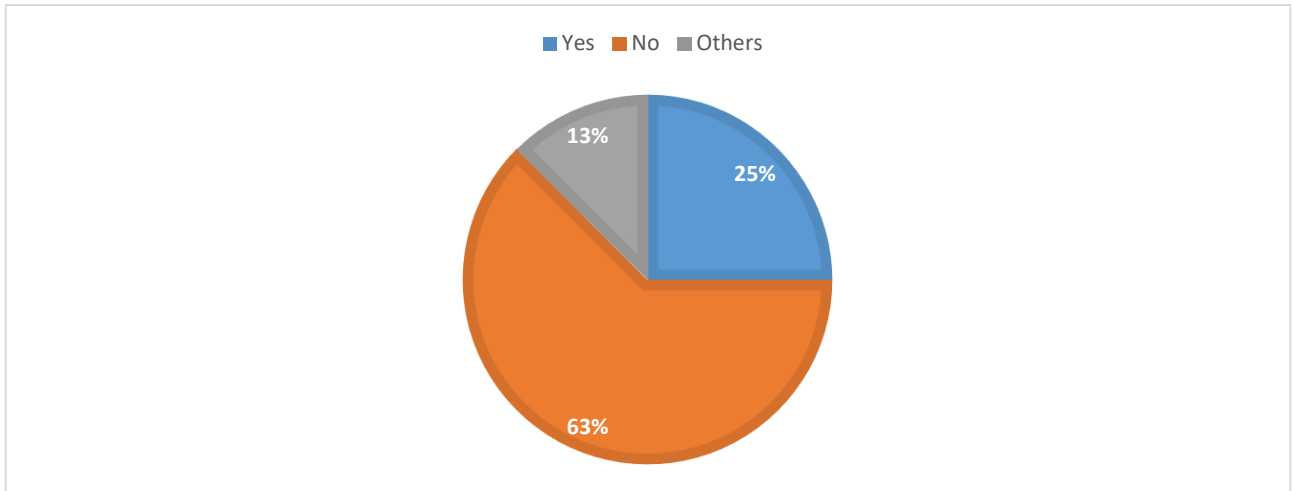
A significant part of the teachers with 62.5% do not use neither Grammarly nor QuillBot, while 12.5%revealed using other applications such as "Ginger". On the other hand, only 25% of the teachers use them.

Q10: Do you trust the services these applications provide to students?

Table 31

Teachers' Trust Level on the Applications Services

	Yes	No
N	4	3
%	57%	43%

Graph 31

Teachers' Trust Level on the Applications Services
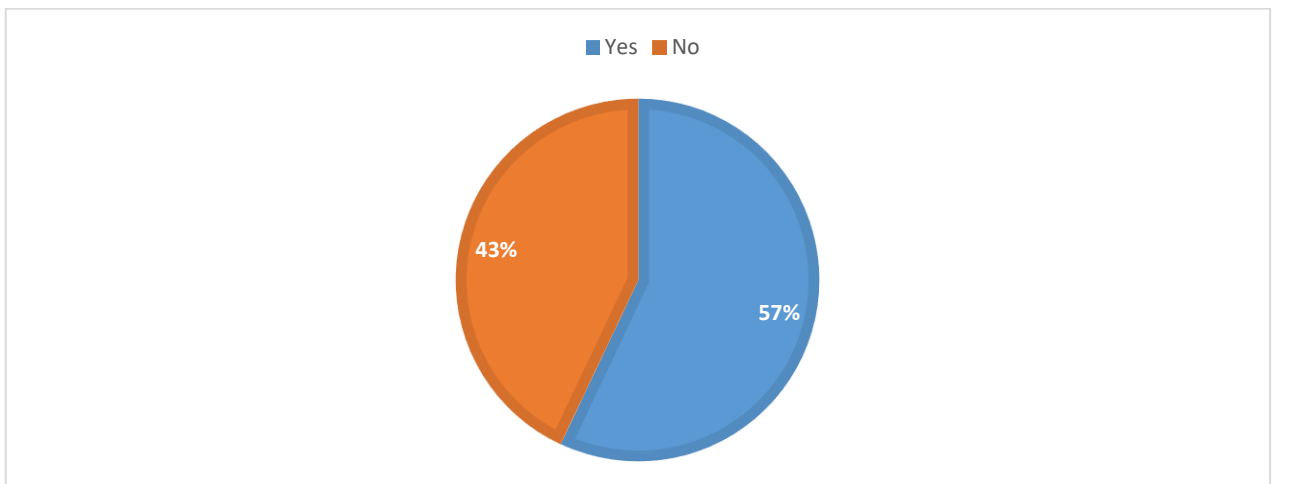
According to the graph, 57% of the teachers trust the services these applications provide to students because they can be very beneficial to enhance students' writing skills and because they provide the standard rules of learning English, especially for EFL students. Meanwhile, 43% of the teachers do not trust those applications' services because they consider them machines, a way to create lazier and less interested students.

Q11: Have you noticed any changes that were brought to English teachers and students thanks to these educational applications?

Table 32

Teachers' Observation on the Changes Brought by the Educational Applications

	Yes	No
N	3	4
%	43%	57%

Graph 32

Teachers' Observation on the Changes Brought by the Educational Applications
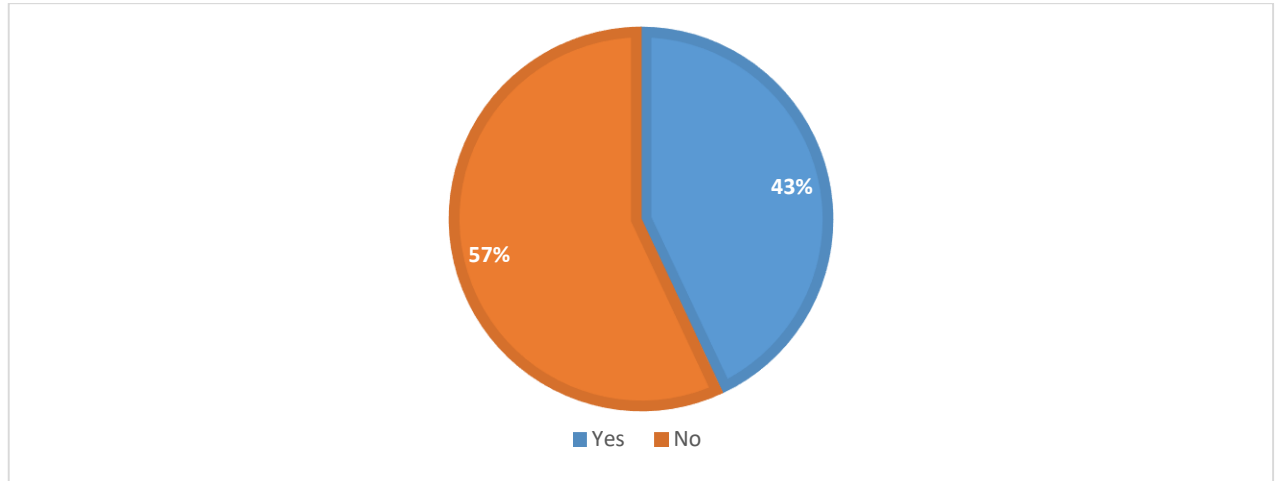
The question aims to investigate the effect that educational applications brought to English teachers and their students. Teachers with 57% believe that educational applications did not make any difference to English teachers and students, justifying their position as machines are not worthy of trust while 43% of the teachers noticed the changes in them and their students through simplifying the whole searching process for both the teachers and learnersand making the students more aware of their grammar and punctuation mistakes.

Section Three: Teachers' Attitudes toward Educational Applications "Grammarly and QuillBot"

Q12: Does a student's writing performance for assignments and exams differ?

Table 33

Teachers' Distinction between Students Writing in Exams and Assignments

	Yes	No
N	7	0
%	100%	0%

Graph 33

Teachers' Distinction between Students Writing in Exams and Assignments
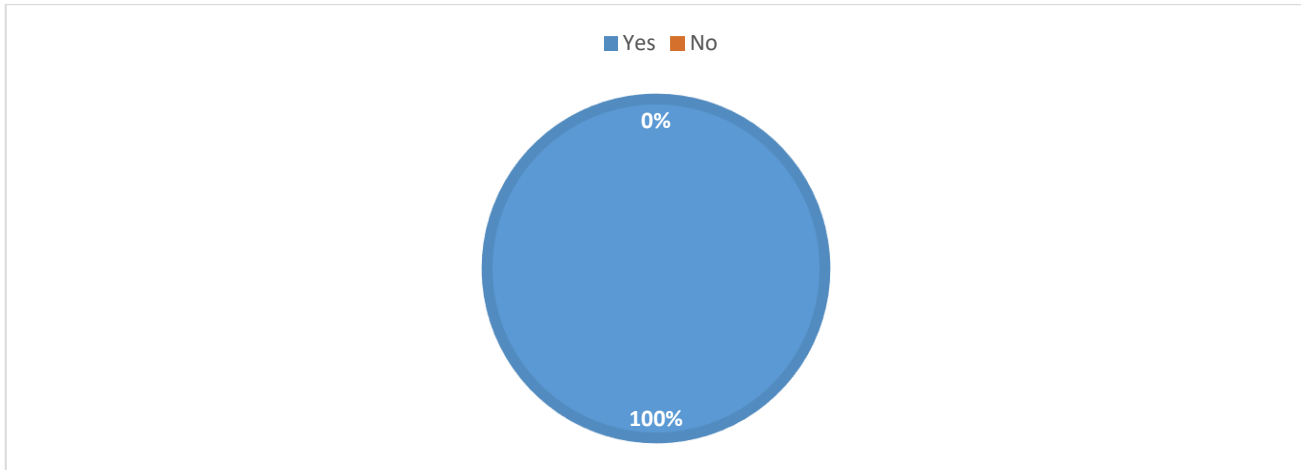
All the teachers agreed that theirstudents' writing performance for assignments and exams differed. In this case, teachers' views varied between who thinks students perform better in exams since they care about the marks they get and those who believe that students' pieces of writing in assignments are much more organized and coherent due to the comfort settings which enable them to complete all the essay steps.

The rest were neutraland they confirmed that this isrelated to the students' own skills, their levels of dedication and perseverance in and outside the classroom, and the degree of plagiarism in their assignments.

Q13: Could you recognize if your students have been using one of these applications in their assignments or no?

Table 34

Teachers' Remarks on the Usage of Applications in Their Students' Writing Assignments

	Yes	No
N	3	4
%	43%	57%

Graph 34

Teachers' Remarks on the Usage of Applications in Their Students' Writing Assignments
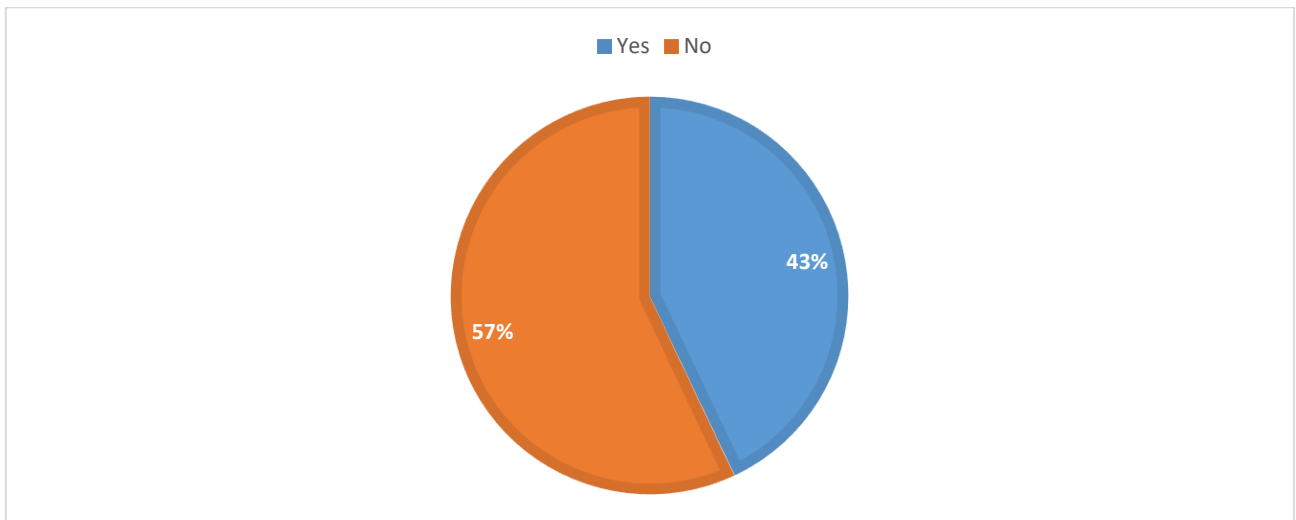
The graph indicates that 57% of the teachers cannot recognize if their students have been using one of these applications in their assignments or not. Meanwhile, 43% of them can notice it easily.

Q14: In your opinion, could Grammarly and QuillBot increase EFL learners' writing performance?

Table 35

Teachers' Opinions on the Effectiveness of Grammarly and QuillBot

	Yes	No
N	6	1
%	86%	14%

Graph 35

Teachers' Opinions on the Effectiveness of Grammarly and QuillBot
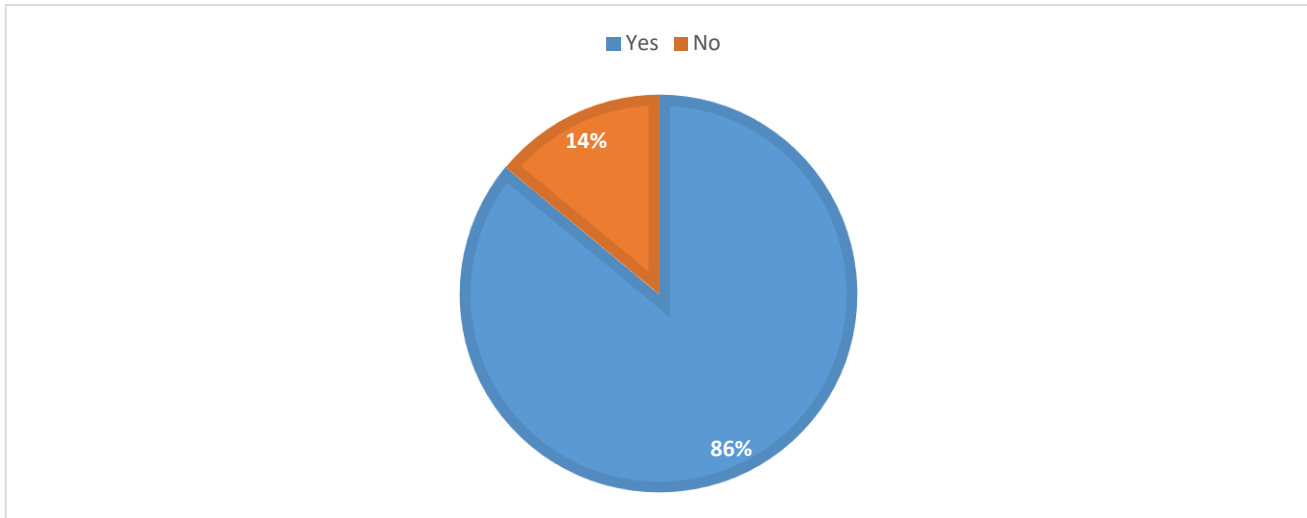
As expected, the majority of the teachers believe that Grammarly and QuillBot have the possibility ofincreasing EFL learners' writing performance with a percentage of 86%. Teachers supported their opinions by affirming the students' necessity in using them properly and taking their remarks into considerations until they reach their aim. That is to say,these applications are indeed helpful. Only 14% denied any improvements caused by those applications and others reasoned that they kill creativity among students.

Q15: Do you agree to share your correctional responsibilities with the applications, where the applications take care of the writing mechanics and you take care of the content and ideas?

Table 36

Teachers' Perceptions on Dividing the Correctional Responsibilities

	Yes	No
N	2	5
%	29%	71%

Graph 36

Teachers' Perceptions on Dividing the Correctional Responsibilities
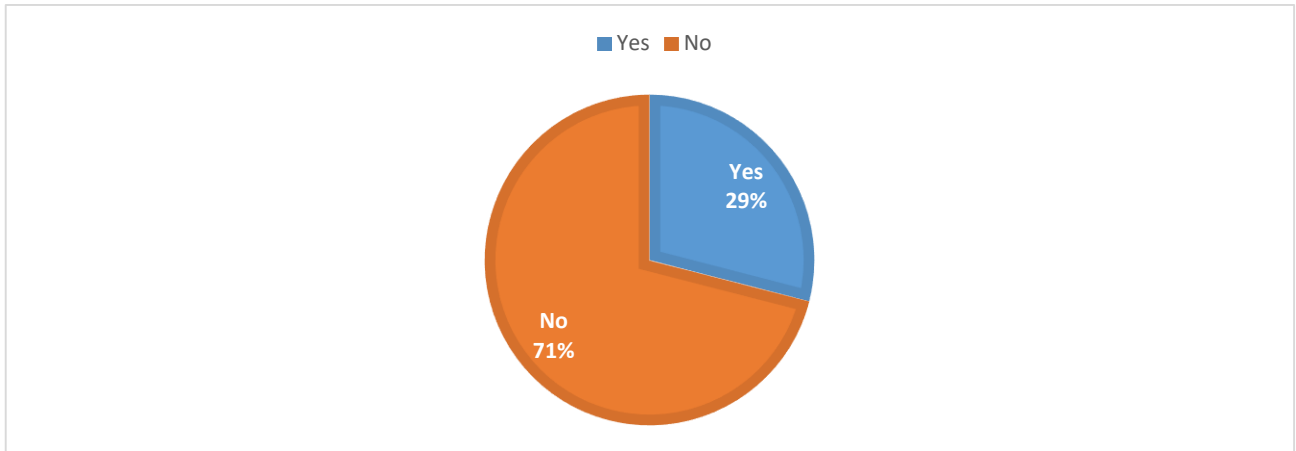
The result presented on the above graph aimed to seek the teachers' views if they agree to share their correctional responsibilities with the applications, where the applications take care of the writing mechanics and they take care of the content and ideas. Their opinions were divided between supporters and opponents: most of the teachers with 71% were against the idea.

Their justifications ranged from viewing them as" just designed programs that have many shortcomings" to"insufficient applications where teachers need to be involved". On the other side, only 29% of the teachers agreed to this deal, but to an extent by depending on the apps to clarify the writing mechanics and then revise it.

Q16: In your opinion, with the spread of AI and Chatgpt services, could these applications replace the role of teachers in the process of evaluating students' writing performance?

Table 37

Teachers' Opinions on Whether These Applications Could Replace Them in the Process of Evaluating Students' Writing Performance

	Yes	No
N	1	6
%	14%	86%

Graph 37

Teachers' Opinions on Whether These Applications Could Replace Them in the Process of Evaluating Students' Writing Performance
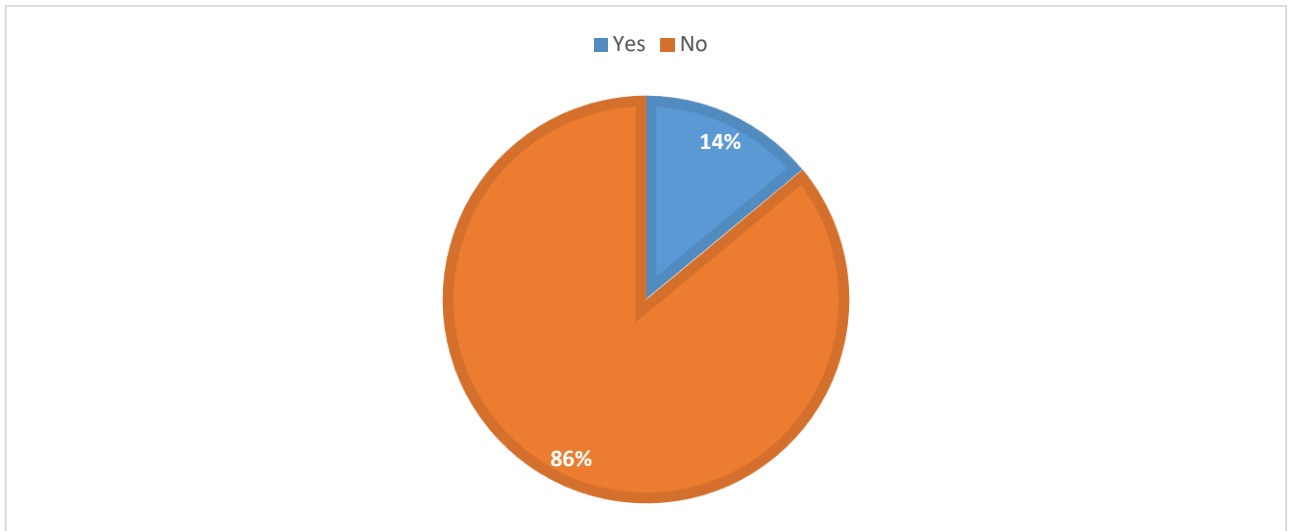
From the above graph, 86% of teachers do not believe in the possibility of these applications in replacing them in the process of evaluating students' writing performance, even with the spread of AI and Chatgpt services. According to the teachers' justification, AI software is trained to accomplish a given task, and since every software has flaws and shortcomings, it is not perfect. Thus, AI is not going to replace human teachers, but teachers who use AI will replace those who do not. Besides,teachers have a great role in helping the students recognize not only what to correct but also how and, more crucially, why.The teacher is able to adapt the students' different levels more than the applications do.

Finally, it is difficult for these applications to understand context where a single word might mean something different depending on the situation, andtheir services do not provide creative writing assistance for authors, but are still useful for submitting assignments to their teachers. On the contrary, only 14% of the teachers accepted the idea, which is justifiedonly to an extent since the feedback given by a teacher is never and will never be the same as AI.

3.3.2.4. Discussion of the Teachers' Questionnaire. With the aim of giving a deep sight to the reader, providing valuable results, and making a worthy contribution to English language learning and teaching, teachers have a crucial part in this research by sharing their perspectives and views toward EFL learners using Grammarly and QuillBot in their writing performances. As a result of this investigation, the majority of teachers have a positive view of Grammarly and QuillBot as enhancing EFL learners' writing performance, yet they stated that they do not fully trust those application services, in which students need to use to a certain extent.

The first section dealt with teachers' personal information. A significant part of teachers, that are between 31 and 40 years, hold Ph.D (Doctorate) degree, and have taught at universities for more than five years with a variety of modules.

The second section was about the teachers' views on their students' level of academic writing. Most of the teachers reported that their students have an advanced level of academic writing since they take teacher's feedback into consideration. However, teachers noticed unwelcomed reactions from the students when asked to do writing assignments attributing it to a lack of motivation and the difficulty of teaching writing in a second language. Also, they claimed that grammar was the top kind of mistakes made by the students, despite the fact that teachers look for coherence and cohesion among the qualities of good writing.

Regarding section three, which is about the usage of educational applications "Grammarly and QuillBot" by the teachers, the findings illustrate that teachers cope with technological advancement in terms of familiarity with educational applications apart from Grammarly and QuillBot. Besides, teachers trust the services that these educational applications provide to students, even though they did not bring any changes to English teachers and their students.

Section four was structured around teachers' attitudes toward Grammarly and QuillBot. All teachers agreed that their students' writing performance for assignments and exams differs, which might be ascribed to various aspects ranging from students who perform better in exams because they care about the marks they receive to others whose writing on assignments is much more organized and coherent due to the comfort settings that allow them to complete all the essay steps, to those whose levels of dedication and perseverance in and outside the classroom are apparant, and to whom the degree of plagiarism on their assignments differs.

Although, teachers admitted that Grammarly and QuillBot could increase EFL learners' writing performance, they asserted that they could not recognize whether their students had been using one of these applications for their assignments or not. Furthermore, all teachers are not willing to share the correctional responsibilities with the applications, nor do they agree to the idea that one day these applications could replace the role of teachers in the process of evaluating students writing performance, especially with the spread of AI and Chatgpt services. They believe that AI will not replace human teachers, but teachers who use AI will replace those who do not.

Finally, we may state that the teachers' questionnaire results did not match the previously designed hypothesis in which they would recommend to an extent the usage of those applications to their learners. Perhaps, this pertains to their preference for the traditional way of assessing their students. Yet,there is no denyingthat teachers themselves acknowledged that Grammarly and QuillBot could increasethe writing performance ofEFLlearners, which is a positive sign that indicates teachers' allusionto the effectiveness of these applications to students' writing performance.

Conclusion

In conclusion, our research based on investigate EFL learners' writing performance using Grammarly and QuillBot.This practical chapter aimed to present, analyze, and discuss the data collected from both students and teachers' questionnaires. Based on the gathered data, we can confirm that students and teachers are aware of the presenceeducational applications and all AI programs, their usage in academic careers, and their impact on the learners' writing performance

General Conclusion

In line with the significance of academic writing and its value in the field of learning English as a foreign language, EFL learners care to enhance their writing skills and make them more effective since they consider writing a bridge to express their ideas, views, and opinions. And in their journey to fluency, they are willing to look for assistance from a variety of tools, among them educational applications such as Grammarly and QuillBot. For that reason, the current study aimed to investigate the effectiveness of these applications in enhancing EFL learners' writing performance through conducting research using the descriptive method since it fits the research need. Two main questionnaires were designed for both students and teachers as the most suitable data collection tools. We targeted this study to Third Year LMD students of English and their teachers at the University of Ghardaia, which were chosen precisely as a sample.

The present dissertation was divided into three main chapters: the first two chapters indicate the theoretical part and the third chapter considers the practical part of the study. The first chapter was devoted to academic writing as the first variable of this study by defining the writing skill in general, its types, explaining academic writing and its significance, introducing its characteristics and approaches, identifying the problems that learners face, and highlighting common lapses made by teachers and learners along with suggestions for resolving these difficulties.

The second chapter dealt with educational applications as the second variable and focused on dealing with the technology aspect by highlighting information and communication technologies (ICTs) as well as the technology acceptance model (TAM). The importance of technology integration into education in the form of computer-assisted language learning (CALL) and mobile-assisted language learning (MALL) approaches was also taken into consideration in this chapter. Moreover, the chapter presented the role of

educational applications (EA) and automated writing evaluation (AWE) by shedding light on Grammarly and QuillBot applications without missing the importance of writing assessment.

Finally, the third part presented the findings of the research after analyzing the teachers and students' questionnaires. The results proved that Grammarly and QuillBot were able to enhance EFL learners writing performance, despite the fact that teachers do not fully trust the services these applications provide.

Recommendations

After analyzing the results of the study, some recommendations are suggested in hope to improve EFL learners' writing performance:

Empowering the relationship between teachers and students will enable them to be aware of each other's needs concerning the writing qualities.

It is critical that teachers keep up-to-date with the technological advances that students use in order to avoid any learning gaps.

It is crucial that teachers adopt new methods of teaching and be creative in order to make the classroom a more effective learning environment.

In order to maintain progress, teachers need to continue to assess their students through regular assignments.

It is important for students to expand their learning resources beyond what teachers provide them, while also practicing outside the classroom.

Furthermore, students should not completely rely on the services offered by the applications because they still have some flaws as long as they are based on Artificial Intelligence.

Likewise, the student must keep in mind that the use of applications must be balanced, not excessive nor negligent, in order to avoid falling into the trap of dependency.

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Appendices (A)

Students' Questionnaire

Dear students,

We would like you to fill out the following questionnaire in order to gather the necessary information for the completion of a master dissertation. We direct this questionnaire to investigate 3rd year EFL learners' Writing performance using QuillBot and Grammarly. You are greatly appreciated if you could answer the following questions in as precise way as you can. Ensure that the answers you provide will be kept confidential and used only for research.

Make sure you tick "√" the appropriate boxes, give a detailed response if necessary, and justify your answer as needed.

Section One: Personal Information

1-How do you consider your level in writing?

-Very good ☐   -Good ☐   -Average ☐   -Poor ☐

2-In your opinion, what is the appropriate order of the following skills in terms of difficulty:

- Speaking ☐   - Writing ☐   - Reading ☐   - Listening ☐

3-How do you find the writing tasks?

-Very easy ☐   -Easy ☐   -Difficult ☐   -Very difficult ☐

4-How often do you write in a week in class?

-Always ☐   -Often ☐   -Sometimes ☐   -Rarely ☐   -Never ☐

5-Do you find the writing session boring?

   -Yes ☐   -No ☐

Justify:

……………………………………………………………………………………………………

……………………………………………………………………………………………………

Section Two: Academic Writing

6-Do you think your academic writing has improved over the last three years?

   -Yes ☐   -No ☐

Justify:

……………………………………………………………………………………………………

……………………………………………………………………………………………………

7-Was your progress in academic writing due to:

-Own efforts ☐   -Instructional support ☐

8-Do you have some difficulties while writing?

  -Yes ☐   -No ☐

9-What are the main difficulties that you have?

- The organization of the production (essays, compositions ...) ☐

-Vocabulary   ☐

- The organization of ideas   ☐

-Grammar ☐

- Conventions of ideas (punctuation, capitalization, …)☐

Others:

…………………………………………………………………………………………
…………………………………………………………………………………………

10-Do you think that these difficulties are due to:

  -Insufficient time   ☐   -Teacher's role   ☐

    -Lack of motivation to write ☐   -Your level in writing ☐

Others:

…………………………………………………………………………………………
…………………………………………………………………………………………

11- What tools do you use to overcome your writing difficulties?

-Educational applications ☐   -Dictionaries ☐   - Books ☐

12- According to you, what can you recommend to improve the effectiveness of the writing session?

…………………………………………………………………………………………
…………………………………………………………………………………………

Section Three: Students Attitude Toward Using Grammarly and QuillBot

13- What do you use QuillBot and Grammarly for?

-Grammar checking ☐   -Paraphrasing ☐

 -Mastering writing mechanics ☐   -Summarizing ☐

14-Why do you use those applications?

-Insufficient teacher feedback ☐   -Laziness ☐   -Lack of time ☐

Others:

…………………………………………………………………………………………
…………………………………………………………………………………………

15-Do you view QuillBot and Grammarly as:

 -Learning tool ⬜   -Checking tool ⬜

16-Would you say your writing has improved since utilizing such apps?

   -Yes ⬜   -No ⬜

Justify:

……………………………………………………………………………………………………
……………………………………………………………………………………………………

17-Do you fully use the provided answer by QuillBot and Grammarly without any changes made by you?

   -Yes ⬜   -No ⬜

18-To what extent do you trust your writing without using these applications?

-Strongly trust ⬜   -Trust ⬜   -Distrust ⬜   -Strongly distrust ⬜

19-Despite having previously utilized Grammarly and QuillBot, are you having trouble in writing during your exam?

   -Yes ⬜   -No ⬜

20-Do you prefer your writing feedback be in:

   -Written form ⬜   -Oral form ⬜

Justify:

……………………………………………………………………………………………………
…………………………………………………………………………………………………...

21- Which do you value more:

-Teacher feedback ⬜   -Applications feedback ⬜

Thank you for your time

APPENDICES

Teachers' Questionnaire

Dear teachers,

This questionnaire is intended to investigate 3rd Year EFL learners' writing performance using Grammarly and QuillBot. We would appreciate your assistance in answering the following questions, which are geared toward obtaining information that will help us with our master dissertation. It would be greatly appreciated if you would take the time to answer the following questions and share your experience. We assure that the answers you provide will be kept confidential and used only for research purposes.

Please complete the following questionnaire by marking the appropriate box(s) or giving a complete answer in the space provided.

Section One: Academic Writing

1-The actual level of most of your students in writing is:

-Beginner: still at the level of the sentence. ⬜

-Intermediate: able to write beyond the sentence-level but not extended

pieces of writing, like essays. ⬜

-Advanced: able to write beyond the sentence-level and extended pieces of

writing like essays. ⬜

2- When you ask your students to write an assignment they are:

-Very interested ⬜   -Interested ⬜   -Bored ⬜   -Not interested ⬜

3-What kind of mistakes students make in their writing?

- Grammar ⬜   -Vocabulary ⬜   -Spelling ⬜   -Punctuation ⬜

-others:

……………………………………………………………………………………………
……………………………………………………………………………………………

4- What are the reasons behind these mistakes?

-Teacher's role ⬜   -Insufficient time ⬜   - Lack of motivation ⬜

Others:

……………………………………………………………………………………………
……………………………………………………………………………………………...

5- Do you think learners' take into consideration teachers' feedback?

-Yes ⬜   -No ⬜

6- Writing in second language is an easy task to teach?

-Yes ⬜   -No ⬜

Justify:

……………………………………………………………………………………………………

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7- As a teacher, what qualities do you look for in good writing?

-Grammar ⬚   -Coherence and Cohesion ⬚

-Writing Mechanics ⬚   -Clarity ⬚

Others:

……………………………………………………………………………………………………

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Section Two: Educational Applications "Grammarly and QuillBot"

8- Are you familiar with using educational applications in writing?

   -Yes ⬚   -No ⬚

9- Do you use Grammarly and QuillBot?

   -Yes ⬚   -No ⬚

Others:

……………………………………………………………………………………………………

…………………………………………………………………………………………………......

10- Do you trust the services these applications provide to students?

   -Yes ⬚   -No ⬚

Justify:

……………………………………………………………………………………………………

…………………………………………………………………………………………………….

11- Have you noticed any changes that were brought to English teachers and students thanks to these educational applications?

   -Yes ⬚   -No ⬚

Explain:

……………………………………………………………………………………………………

……………………………………………………………………………………………………

Section Three: Teachers' Attitudes towards Educational Applications "Grammarly and QuillBot"

12- Does a student's writing performance for assignments and exams differ?

   -Yes ⬚   -No ⬚

Explain:

……………………………………………………………………………………………………
……………………………………………………………………………………………………

13- Could you recognize if your students have been using one of these applications in their assignments or no?

-Yes ☐   -No ☐

14- In your opinion, could Grammarly and QuillBot increase EFL learners' writing performance?

-Yes ☐   -No ☐

Justify:

……………………………………………………………………………………………………
……………………………………………………………………………………………………

15- Do you agree to share your correctional responsibilities with the applications, where the applications take care of the writing mechanics and you take care of the content and ideas?

-Yes ☐   -No ☐

Justify:

……………………………………………………………………………………………………
……………………………………………………………………………………………………

16- In your opinion, with the spread of AI and Chatgpt services, could these applications replace the role of teachers in the process of evaluating students writing performance?

-Yes ☐   -No ☐

-Explain:

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…………………………………………………………………………………………………….

Any further comments or suggestions are highly welcomed

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……………………………………………………………………………………………………
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Thank you for your time

الملخص

قد تكون الكتابة أكاديميا غير مرحب بها وصعبة بالنسبة لبعض المتعلمين. ولكن بفضل مساهمات التكنولوجيا، ظهرت العديد من التطبيقات التي تتميز بالذكاء الاصطناعي لمساعدة الطلبة في أداء مهام الكتابة، بما في ذلك Grammarly وQuillBot. لهذا السبب تم إجراء هذا البحث للتحقق من الأداء الكتابي لطلبة EFL باستخدام هذين التطبيقين. يهدف البحث إلى تأكيد فعالية هذين التطبيقين في تعزيز الأداء الكتابي لدى متعلمي اللغة الانجليزية. ولذلك تم الاعتماد على منهج البحث النوعي باستخدام أسلوب وصفي لتحليل النتائج المتحصل عليها من خلال استبيان تم توجيهه إلى ستة وأربعين طالبا في السنة الثالثة وسبعة أساتذة في قسم اللغة الإنجليزية بجامعة غرداية. وأظهرت النتائج أن طلاب السنة الثالثة لديهم آراء إيجابية حول استخدامهما كتطبيقين مضمونين لفحص الأخطاء، واكتساب مفردات جديدة، والتعبير عن الأفكار وتنظيمها. ومع ذلك، لا يثق الأساتذة ثقة كاملة بالخدمات التي يقدمها هذان التطبيقان للطلبة.

الكلمات المفتاحية: الأداء الكتابي ؛ التكنولوجيا ؛ الذكاء الاصطناعي ؛ التطبيقات ؛QuillBot; Grammarly