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Software Technology and Writing Skills Improvement of Intermediate EFL Learners

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Abstract

The presented study examined the effect of applying software technology, (i.e., WhiteSmoke Writing Software (TM 2020), on the improvement of EFL learners' writing skills. To do so, 55 EFL learners ranged in age from 20 to 22 who were studying English as a Foreign Language in Bahar Institute of Higher Education, Iran were invited to participate in the research. During the study, the participants who were already studying Passages coursebook were informed that for 7 weeks the class orientation and focus will change to writing instruction, which was most welcome by them. One class was considered as an experimental group of 26 students, while the other one was a control group of 29 students. Based on the prior completion of the course, all were considered intermediate. Control group students worked conventionally on the book and received feedback on their performance from the teacher while the learners in the experimental group worked with WhiteSmoke Writing Software which is the most comprehensive grammar checker. At the end of the study, the comparison of the pretest and posttest demonstrated that the participants in the experimental group outperformed the control group subjects at a 0.05 significant level. The outcomes of the current study approved that the application of software technology in the classroom context was treasured. Also, the utilization of software made the learners be in charge of their own learning process, which can be a great advantage on the part of online teaching and learning.

Keywords: E-learning, Software echnology, writing skills, WhiteSmoke writing software (TM 2020)

1. Introduction

Nowadays, the nature of authorship, audience, and knowledge is swiftly developing. Young writers now have more access to content, connectivity, and publishing opportunities than ever before. Yet access alone does not guarantee reflection and learning (Elyse & Cantrill, 2009).

Elyse and Cantrill (2009) believed that educators play an essential role in helping young people to think seriously about new media and to build up an understanding of social and ethical matters in communication. She regards the educators as an excellent help to young writers to grow from a simple consumer of new media tools to talented creators. For this reason, teachers of writing skills have often been among the first to advocate the new technologies and open

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Internet access in schools. They have worked to form student-focused, media-sharing environments, and educated themselves about official issues and conventional use. Most teachers have hardly begun to consider how digital writing and new media practices associate with their subject matter, teaching practices, curriculum, and assessment.

New media environments are distinct and developing swiftly. The kinds of writing growing in social networks are new and rapidly varying as well. To promote effective teaching and real learning, educators need the chance to look beyond the simple "how to" of adopting new digital equipment to the more challenging questions of practice, standards, and curriculum design that new media raise for schooling (Elyse & Cantrill, 2009).

1.1.Writing skills, motivation, and computer technology

Children learn to read and write by reading and writing; therefore, reading and writing are the actual modes or forms of instruction through which the skills of reading and writing develop (Cooper, 1993). The students expand their skills through application. Researchers have verified the significance of extended writing as the most important way in which students extend their skills to use grammar and learn to spell. Writing helps to make literacy an exciting process in multiple ways (Cooper, 1993). It is essential because while writing they are thinking, explaining their knowledge base, and activating prior knowledge. When they are critical readers of their writing they learn to self – edit which leads to improvement of their writing skills (Cooper, 1993).

When students are writing it is important to consider the point that writing is hard in isolation. It should not be a detached class. Writing should be done habitually in subjects' areas as a response to reading and other activities related to learning. The writing may be "quick writes" which take the form of generating questions to an article about whales the students just read or creating summaries of science material they have just learned; other composing activities may be more extensive and involve sustained writing, revision, and publishing (Allington & Cunningham, 1994).

Apart from the extent of the writing activity, what is central is that they are doing genuine writing activities. As a result, they see the importance of writing as an activity in which they communicate efficiently with others.

A chief part of helping students become effective writers is keeping them motivated and energized about their learning. Motivation may come from within the students themselves or be promoted by the teacher, other students, or their experiences. Motivation is not created by a particular activity that the teacher carries out. Rather it is created and continued by several factors inbuilt in a classroom learning environment which produces students who are involved in learning to read and write. Within this environment, students take ownership of their learning and come to feel that they have the right to choose what they learn and to manage their learning in cooperation with the teacher and peers (Cooper, 1993).

All teachers have had their "bag of tricks" which is meant to motivate writing (Calkins, 1986). Teacher-led activities may arouse writing but they do not help students become individually involved in their writing. Intrinsic motivation will occur when writing is personal and interpersonal. The teacher's job is to recognize that each student comes to class with ideas,

concerns, memories, and feelings. Students need to have the freedom to write about what is significant to them. Calkins believes that all humans have an important urge to write, a teacher needs to be qualified to tap into that urge. That urge can be tapped into if teachers help students understand that their lives are worth writing about and if teachers help students chose their topics, their genre, and their audience (Calkins, 1986).

Students have many ideas to express; they grow impatient with the slowness of writing, and they resist revising, editing, and recopying (Furnish, 1988). Computers present a way for students to get their ideas on paper and revise more effortlessly. Teachers and researchers observe that students write more and stay with writing tasks longer when using computers (Vockell, 1987). However, it is important to keep perception and acknowledge that just because a piece of writing was prepared on a computer does not make sure it was done well. The belief needs to be that whether the students are writing by means of pencil and paper or by-word processing, the writing process must be pursued. Although the first draft may look tidy on the computer, it needs to be revised and edited as would any other piece of writing (Routman, 1991).

Kirkpatrick and Cuban, (1998) found, in an assessment of ten meta-analytic studies, that drill and practice, as well as tutorial instruction, produced positive results on standardized testing, but the results with internet-enhanced applications were questionable (Kirkpatrick & Cuban, 1998). A study of basic skills instruction in West Virginia (Mann, Shakeshaft, Becker, & Kottkamp, 1999), found that fifth-grade achievement scores in basic skills increased significantly using a tutorial instructional model and further found that students who had been taught with computers in the classroom scored considerably higher than students who were instructed in a lab environment or students who had a combination treatment of classroom and lab instruction (Mann et al., 1999). Students were encouraged to interact in small groups, and cooperative learning with computer instruction in this study appears to have been a successful approach.

It should be mentioned that one of the difficulties in attempting to evaluate the effect of a software treatment is the problem of controlling all the variables because they relate to classroom instruction. If students' achievement is boosted during an intervention, the result may be a technology consequence, but the effect will perpetually be pooled with other factors, such as outstanding classroom instruction.

1.2.Does online technology develop students' writing abilities?

Online technology and principally Internet, are part of everyday life. They have changed and are changing our social systems, our way of communicating, and our way of writing. In online chat and "text speak" typically we adopt an informal writing style, that can often lack grammar and accurate spelling. That is why numerous people criticize children's and teens' use of technology. Jonathan Douglas, director of the National Literacy Trust, said that children and teens who use online technology, feel enthusiastic about writing short stories, letters, song lyrics, or diaries. However, not all teachers concur with this point of view, many think that spending a lot of time online in the classroom has its drawbacks. Many think the relationship between teacher and child is more important than that with the computer.

1.3.Improving student writing using technology

Over the last five years, great progress has been made in finding ways to incorporate technology into the academic curriculum. There are various opportunities for improving student writing via the use of technology. While some criticize technology for spell- and grammar-checkers that lessen students' reliance on their own capabilities, research shows that students who use word processing programs to develop writing skills are able to write better compositions (Kulik, 2003). The tools available to teachers to develop and improve writing skills abound, through word processing programs and the Internet (Lacina & Austin, 2003).

1.3.1. Application in classrooms and similar settings. Technology provides infinite opportunities for teachers to develop writing instruction. Teachers can model writing by employing a computer connected to an LCD projector. Students can watch writing processes, drafting, expanding, editing, and revising, as it is projected. Students can use Kidspiration or Inspiration software to brainstorm ideas and make story maps. As a proofreading strategy, students can listen to their writing read back to them by text-to-speech software and can peer edit through e-mail, and learn outlining techniques using Powerpoint (Lacina & Austin, 2003) There are numerous websites available for publishing student works.

Readskills statistics. Microsoft Word is equipped with this useful tool. The tool will count the words, characters, sentences, words per sentence, among other things. Within Readskills Statistics, one can find the Flesch-Kincaid grade level, which is a difficult calculation that tells the equivalent level of the reader to read the particular selection. The readskills statistics appear at the end of a spell check. This tool can be used as a motivator for students to enhance their writing, by expanding vocabulary, and writing more complex sentences.

Spell check and grammar check. These tools are found on most word processing software. They are definitely not "foolproof," but they can help students in the right direction in their composition. Critics say that spell check and grammar check cannot replace the "complexity of the human mind," which is no surprise.

Citation machine. This is an Internet resource that can build citations in either MLA or APA style for a variety of resources, including books, magazines, websites, and many more. Find it at http://citationmachine.net. (Site verified March 25, 2020).

*Paragraph punch and essay punch***.** Two great websites to help students organize their thoughts on a specific topic. Paragraph Punch can be found at http://www.paragraphpunch.com/. This site helps students write a topic sentence and develop an idea into a well-written paragraph. Essay Punch (http://www.essaypunch.com/) directs students through the procedure of writing an introductory paragraph, three body paragraphs, and a concluding paragraph.

Read, write and think, sponsored by the International Reading Association and the National Council of Teachers of English provides a huge number of lesson plans and ideas for teaching writing at all grade levels. Visit it at http://www.readwritethink.org/student_mat/index.asp.

1.3.2. Evidence of efficacy. From an efficiency angle, it would be hard to dispute the ease with which students can draft, edit, and finalize a written paper using a simple word processing program compared to the pencil and paper methods of the past (Kulik, 2003). If equipped with basic keyboarding skills, students can easily type a task and revise continually, ongoing to improve the finished product. With good and practical use of spelling and grammar checking software, students receive instantaneous feedback on those aspects of their work. Admittedly, they cannot rely totally on these tools but must have a quite good basis in spelling, grammar, and punctuation to successfully make use of these tools. Further, they can make use of readskills statistics to place their writing at a particular grade level, and investigate the statistics related to the assignment, such as the number of words, sentences, etc.

As (Kulik, 2003) points out, within a creative writing assignment, those students and other writers who experience "writers' block" can find online many story starters, ideas and start the flow of creative expression. Thanks to the sharing component of the Internet, teachers of writing can capitalize on the experiences of other teachers, sharing lesson plans and ideas for improving their students' writing capabilities. (Kulik, 2003).

1.3.3. Critics and their justifications. The impact of spell check on writing was investigated in a study at the University of Pittsburgh. It was found that a heavy reliance was placed on spell-checking software, and some of those surveyed made changes to the text that was already accurate. Richard Stern, of Carnegie Mellon University, said that "grammar and spelling software will never reach the complexity of the human mind." Students can be easily deceived into believing the spell check and grammar check will remove all their technical problems (Lacina & Austin, 2003).

There are conflicting accounts of the impact of technology on writing. Researchers recommend that the effectiveness of technology on the writing process depends on how the teacher employs technology. Simply replacing drill and practice worksheets with drill and practice software is not effectual; however, teachers need to use technology to enhance instruction and promote active learning (Lacina & Austin, 2003). Another issue occurs when students bring slang and "half-speak" into educationally viable written texts. Teaching the line between chatting and writing will make the difference in whether technology is actually helping writing or not (Reed, 2003).

To sum up, as part of the greater concentration on writing instruction in classrooms, several educators have turned to online or software-based writing programs for facilitating in identifying and addressing students' weaknesses.

1.4. What is WhiteSmoke Writing Software (TM 2020)?

WhiteSmoke (TM 2020) is one of the most comprehensive grammar checkers in the world today. While it includes several writing tools, such as a dictionary, a thesaurus, and ready-made letter templates, its nucleus feature is its advanced grammar checker. While in the WhiteSmoke window, corrections will appear above the words. Simply users can click on the corrections to accept them or can click on the word itself for further options. When correcting the text is finished, it is advised to click the 'Check' button so that the program will check the text once

more with the changes. To terminate the session and replace the original text with the corrected one, the user should click 'Apply'. WhiteSmoke is optimized to correct the majority of mistakes in written English texts. It uses Natural Language Processing (NLP) to correct errors that are commonly made in the process of writing. WhiteSmoke cannot detect all errors. Errors made on purpose are fundamentally different from ones that occur in the natural flow of writing. Thus, for example, WhiteSmoke will not offer relevant corrections for extreme spelling mistakes (xhdlsdsdley), nonsensical semantics (The apple ate the bee.), or abnormal grammar and sentence structures (Thinking I mind am gone mountain walk.).

WhiteSmoke has an enormous database of suggestions and recommendations that consists of millions of enrichment, grammar, and spelling corrections. When a writing sample is submitted into the program it can check for spelling and grammar errors, punctuation, passive verbs, overused words, passive verb frequency, average sentence length, complex word use, and wordy phrases. Once it is analyzing the text, it will give the document an overall score. This software helps students or users to enhance their text by providing adverb and adjective suggestions, much like the synonym tool in Word. This program continues to improve in its skills to analyze the content of text rather than just looking at the mechanics. WhiteSmoke has a built-in dictionary and thesaurus to help users choose applicable and effective words. This software includes a diverse collection of templates, from business letters and proposals to love letters.

It works pretty much the same way as Microsoft Office's spelling and grammar tools only more comprehensively. The interface can be activated via the key F2. The program is ideal for students that need to work on their English.

Therefore, this study mainly seeks to answer the following research question:

Q: To what extent can applying software technology, (i.e., WhiteSmoke Writing Software (TM 2020), improve EFL learners' writing skill?

2. Method

The present study was an attempt to study the software technology and writing skills improvement of intermediate EFL learners. In this part, first, participants of the present study are described in details. Then, an overview of the procedure and instruments are presented. Finally, the procedures of analyzing the collected data are clarified.

2.1.Participants

The participants were 55 (n=55) Iranian EFL learners enrolled in an English as a Foreign Language (EFL) course in Bahar Institute of Higher Education in Iran. They were partitioned into control and experimental group respectively containing 29 and 26 members. They were all studying Passages Coursebook Vol. 2. The participants were purportedly homogeneous in terms of their perceived level at the Passages coursebook and were all considered as intermediate level. In addition, all the participants were given an IT Questionnaire, developed by Son, Robb, & Charismiadji (2011) to determine the extent to which they are IT literate. The purpose of the IT questionnaire was to distinguish between IT literate participants and those

with no or low levels of IT literacy. The participants ranged in age from 20 to 22 (Son, Robb, & Charismiadji, 2011).

2.2.Instruments

The most significant instrument utilized in the present study was the WhiteSmoke Writing Software (TM 2020). The software was previously installed on all the computers available at the Computer Lab of the institute. This software was used as the major teaching instrument for the experimental group and the book "Essay To Write" by Brendan Hennessy was used for the control group. The main categories that WhiteSmoke focuses on are spelling, grammar, and punctuation. Students' knowledge of the writing components can be aided by this software. Students can examine their overall performance level as well as their detailed performance results by pressing F2 bottom. If there is a mistake or a problem with spelling or punctuation, it will be fixed right away. The next instrument employed was the second task of the IELTS Writing test General Module (2004). In the second task of IELTS Writing General Training, the candidates were given a topic and they were asked to write about at least 250 words. They should have spent about 40 minutes on this task. This test served both as a pretest and posttest.

2.3.Procedure

Two classes of conversation courses, taking Passage Coursebook, were selected for the purpose of this study. All participants were told that they would be taught solely writing skill for 12 sessions (7 weeks). One of the classes was considered as experimental and the other one as the control group. In the control group traditional methods of writing instruction were utilized (i.e., every session teacher gave a topic to the students and asked them to write an essay about it). The participants of the control group were divided into five groups of four and they were asked to write their essays cooperatively. Therefore, they had the chance of exchanging their ideas, correcting the possible grammatical mistakes and producing an astonishing essay.

Each session was around 90 minutes. The teacher of the control group divided the time into two halves of 45 minutes. During the first 45 minutes, students wrote their essays, and throughout the second half teacher, who had collected all the papers, started to correct them. Since the numbers of essays were just five, the teacher had enough time to correct the papers and give the appropriate feedback to the participants. When he found a mistake, he talked about it and explained it to the whole class. At the end of the experiment, which lasted for 10 weeks, the control group students were required to participate in an essay writing test, that is, the second task of the IELTS Writing General test as a posttest.

On the other hand, the experimental group session was held in the computer laboratory of the institute. Before starting the experiment, the researcher had asked the software engineer to install the WhiteSmoke software on all the computers available in the lab. (Fig.1) Every session the experimental group participant attended in the computer lab and they were given a topic to write an essay about. But unlike the Control group, where the students were asked to type their essays in Microsoft Word 2007. Since there were a few students in the Experimental Group all of them had the chance of working with one computer. When they finished typing

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their essays in the Microsoft Word environment, they were asked to press the F2 bottom, as they were instructed before. Then the WhiteSmoke software started to work. (Fig. 2).

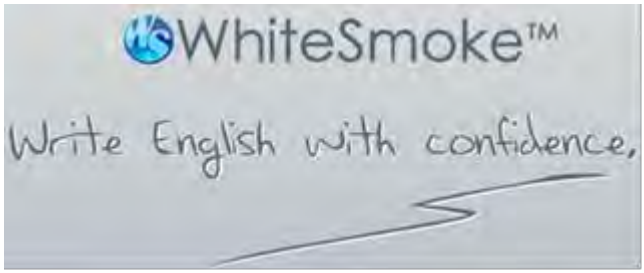

Figure 1. WhiteSmoke Instruction

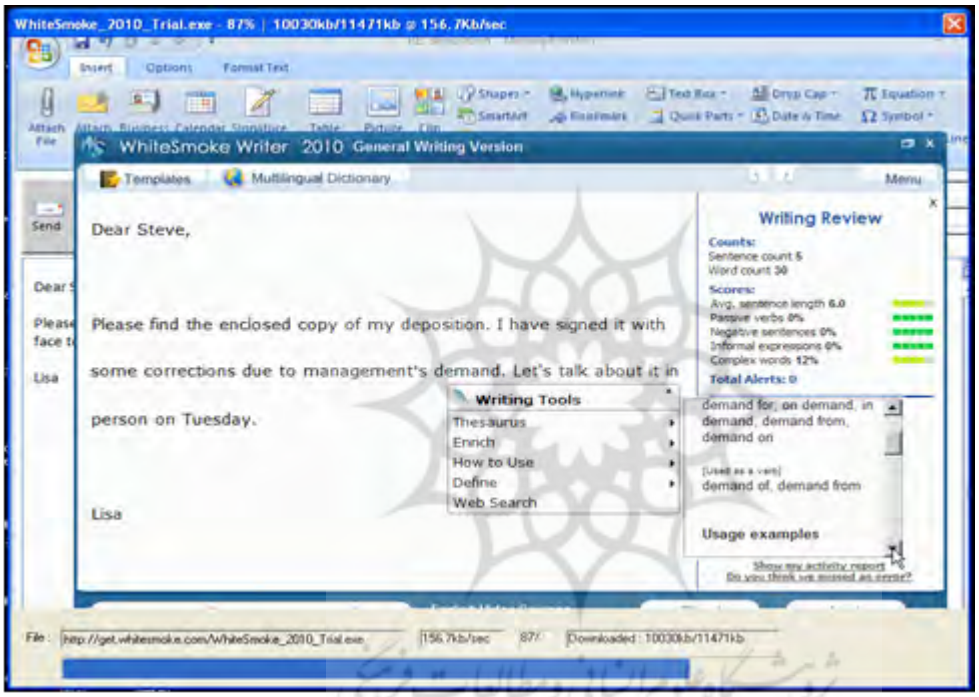

Figure 2. How WhiteSmoke works

After some seconds the participants were able to see their written works along with grammar check, contextual spell check, style check, punctuation check, and writing review in the WhiteSmoke environment. All the mistakes were corrected and shown above each wrong structure. On the right side of the screen, students could see the details of their works, which was word count, sentence length; passive verbs, complex words, etc. (Fig.3)

As can be seen at the bottom of Fig.3, "How to Improve Your Text" could help students to realize their problematic areas. Therefore, they could concentrate more on those sections. "How to Improve Your Text" may have changed depending upon the quality of the written work. So, each student received a different "Writing Review".

In the experimental group, unlike the Control Group, the role of the teacher was minimized to just a leader and problem-solver. Almost none of the students had problems in working with this software, since they were completely instructed about how to work with it. Every session every subject was required to type an essay of 250 words. After ten sessions of

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working with the mentioned software, the participants were given a posttest in form of a paper and pencil test, exactly like that of the control group. The same raters corrected the papers of both groups.

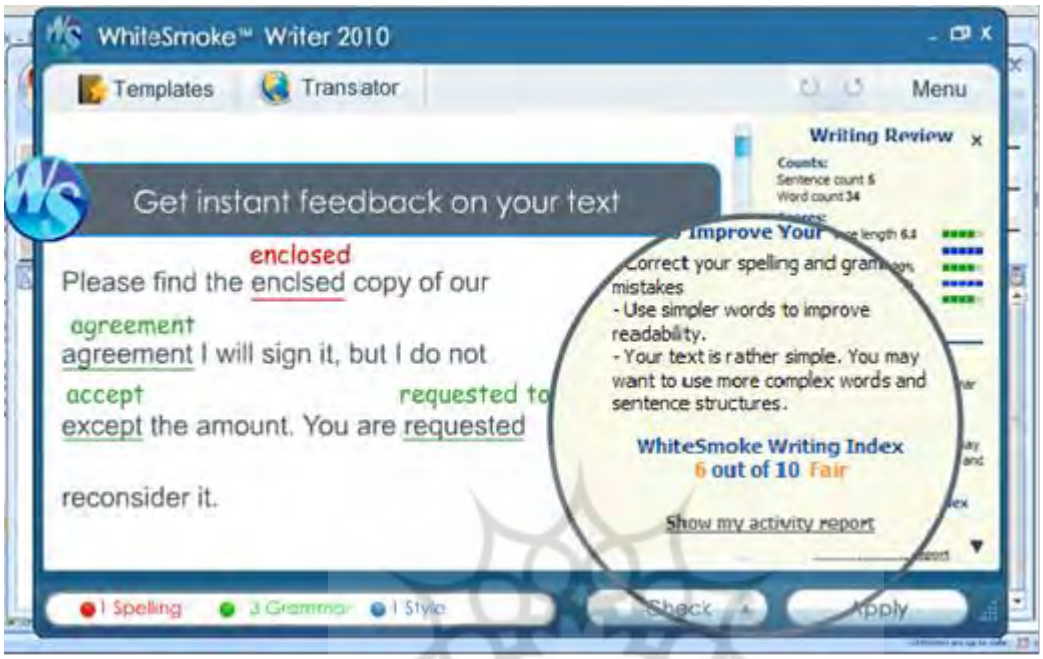

Figure 3. Writing Review

3. Data collection and analysis

In order to increase the inter-rater reliability, three teachers who were teaching in the institute and held M.A degree in TEFL were asked to correct the papers. The results obtained were analyzed. The results for the descriptive analysis of the pretest and posttest are shown in Tables 1 and 2.

Table 1.
Mean score and Standard deviation for pretest

Group Variables	N	Mean	Std. Deviation
Control Group	29	11.654	0.458
Experimental Group	26	10.954	0.527

Table 2.
Mean score and Standard deviation for posttest

Group Variables	N	Mean	Std. Deviation	Std. Error Mean
Control Group	29	12.351	0.963	0.193
Experimental Group	26	14.101	0.707	0.151

To compare the group means for the study, an independent t-test analysis was employed for the posttest phase (see table 3). As shown in this table, the difference is considered to be statistically significant between the two experimental and control groups (P<0.0157). That is the candidates in the experimental group have outperformed the ones in the control group in Writing test scores.

Table 3.
Independent Sample T-Test

		F	Sig.	t	df	Sig.(2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Writing Test	Equal variance assumed	1.238	0.254	2.255	44	0.0127	0.630	0.623	0.128	0.132
	Equal variances not assumed			2.255	43.13	0.0127	0.630	0.623	0.139	0.135

It can be concluded that the use of WhiteSmoke Writing Software improved the Writing skills of Iranian EFL learners to a great extent.

Three weeks after the experiment the students of both groups were asked to participate in an essay writing test again. The purpose of this test was to see which method of instruction had more impact on the students' writing skills and could improve their writing performance for a longer period of time. Interestingly enough, here again, the participants of the experimental group could perform better than the control group (Table 4).

Table 4.
Mean and standard deviation for both groups after three weeks

Group Variables	N	Mean	Std. Deviation
Control Group	29	13.453	0.656
Experimental Group	26	16.987	0.821

In order to understand the reason for this phenomenon the researcher developed a structured interview and asked the experimental group subjects to participate in it. After analyzing the results obtained from the interview, the following reason was mentioned by most subjects:

Around 70% of the participants mentioned that, since during the experiment they had the chance of watching, reading, and analyzing the results and feedback given on their writing performance they could clearly remember them in their mind; therefore, when they wanted to write an essay, they tried not to repeat their mistakes.

4. Discussion and conclusions

Technology being a substantial share of our society today has had a considerable impact on the way students take on their work. Electronic devices have affected the way we think and consider the issues in both positive and negative ways. In writing, precisely, writers have assumed skills that lead to the creation of many shortcuts to get numerous tasks completed. Strain-Moritz and Tessa (2016) believed that technology has improved the research skills of writers. Technology has also fortified creativity among writers, where they can come up with new ideas (Strain-Moritz, 2016). Conversely, the quality of work has been vividly exaggerated due to this, which in turn has influenced the quality of writing. Omar, Miah, and Belmasrour (2020) believed that Through technology, written communication has been seen to flourish enormously (Omar, Miah, & Belmasrour, 2020).

Owing to the massive presence of messaging applications on social media, writers have ameliorated their writing skills. Due to the internet, writers have been able to come with more descriptive essays as they have more information at their disposal. Through the utilization of technology, writers are more creative in their work. This is because they are exposed to new content which they can use to come with work that requires their technical ability. Writers are also able to interact with different people and get to see their work which becomes an motivation to them when they are creating their own content. There has been a development of amendments for work completed. This means that writers can complete a review of their work within a short time. This means too much work is covered by writers in that they do not spend enough time while editing.

Spelling, grammar, and punctuation are all important components of writing that we've all heard about before. Despite the repeated reminders, most people continue to ignore them, producing text that is fraught with errors on all of those fronts. Why fixes your grammar? Because good grammar helps lessen confusion for the readers. Writing that follows the rules of usage will contain a structure that makes sense for anyone even moderately-versed in English. Why fix punctuation? Because the poorly punctuated text is simply tough to read. Imagine a person speaking in a single tone without pause – that's how a badly-punctuated writing typically reads (Omar et al., 2020).

Applying software like WhiteSmoke can enhance the ability of the students to improve their knowledge of the writing components. Spelling, grammar, and punctuation are the main categories that WhiteSmoke concentrates mostly on. By pressing F2 bottom, students can see their overall performance level along with their detailed performance results. If there is any mistake or problem in spelling or punctuation they will be corrected immediately and will be written on the wrong word. In the case of grammar if the written structure is completely wrong the correct one will be written on the erroneous sentence, and if it is not compatible with that of a native speaker while it is true, some native-like suggested forms are presented.

Applying WhiteSmoke also offer some other advanced options that other programs such as Microsoft Word do not provide. Contextual Spelling, Inserting Missing Words such as Determiners, Auxiliaries, and Prepositions, Countable / Uncountable Noun, Tense Correction By Context, Correcting Inconsistency in Coordinated Verbs, Correcting Wrong Verb Inflection of Irregular Verb, Changing Noun Form to Verb Form, Fixing Possessive Constructions, Fixing

Gerund/Infinitive Confusion, Fixing Wrong Prepositions in Adjectival Phrases, Alert: Problematic Sentence Structure, and so on are among the sophisticated alternatives that WhiteSmoke provide. For sure it is an exhausting task for a teacher to provide the students with all of these complex and detailed components, but software can do it in just a fraction of time. Using writing software can be beneficial for:

- People learning English as a foreign language
- Students writing academic essays
- Anyone producing a formal business-related piece (perhaps a report, or a job application)
- Freelancers writing for print or traditional markets

Kemp and Bushnell (2011) claimed that useful writing enhancement software includes comprehensive spelling and grammar checks that go beyond what Word can offer to include checks for commonly misused words, homonyms, syntax, and more. The best programs also offer relevant feedback with explanations that consider the total meaning of a sentence or selection and offer more than one choice of possible corrections. They also offer good reference materials such as a grammar guide, dictionary, and thesaurus (Kemp & Bushnell, 2011).

As mentioned before, the results of the present study confirm that the application of software technology in the classroom context is valuable. Also, the use of software minimizes the role of the teacher. The most significant finding of the present study is that it is not necessary for intermediate to advanced students to attend the classes to achieve better writing skills. Whitesmoke (TM 2020) and other software like this can be of great help to EFL learners. For instance, EFL learners can use the writing software to save their editing and proofreading time, to help organize their writing process, to improve their writing abilities, to save time ensuring that their work complies with stylebook guidelines.

Overall, this has been an outstanding experience for both the researchers and the students. It was incredible to see students' enthusiasm about their writing and publishing quality pieces of work on a consistent basis. They also learned how technology makes writing more efficient. Their attitudes towards using technology specifically software technology have changed greatly.

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