



**THE USE OF AUTOMATED WRITING EVALUATION IN EFL
WRITING CLASSES: EFFECTS ON ACHIEVEMENT,
MOTIVATION AND SELF-EFFICACY**

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M. A. THESIS

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TELİF HAKKI VE TEZ FOTOKOPİ İZİN FORMU

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To my beloved family

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**OTOMATİK YAZMA DEĞERLENDİRMENİN İNGİLİZCE YAZMA
SINIFLARINDA KULLANIMI: BAŞARI, MOTİVASYON VE ÖZ-
YETERLİK ÜZERİNDEKİ ETKİLERİ**

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ÖZ

Bu çalışma, Otomatik Yazma Değerlendirme (OYD) aracılığıyla sağlanan dönütün öğrencilerin yazma motivasyonu, yazma öz-yeterlik inançları ve yazma başarısı üzerindeki etkililiğini araştırmayı amaçlamaktadır. Araştırmaya Türkiye'de bir devlet üniversitesinde 2020 yılında öğrenim gören 91 hazırlık öğrencisi katılmış ve öğrenciler üç gruba ayrılmıştır: deney grubu 1 (S: 31), deney grubu 2 (S: 28) ve kontrol grubu (S: 32). Çalışmadan önce, tüm grupların yazma başarılarının birbirine benzer olup olmadığını görmek için öğrencilerin kompozisyonları toplanmıştır. Çalışmada iki farklı OYD sisteminin ücretsiz versiyonları kullanılmıştır (her deney grubu için bir OYD aracı kullanılmıştır). Deney gruplarındaki katılımcılar öğretmen + OYD dönütü alırken, kontrol grubundaki katılımcılar sadece öğretmen dönütü almıştır. Deney gruplarındaki her bir öğrenci, OYD dönütünü kullanarak altı kompozisyon yazmıştır. Kompozisyonların ilk ve son taslakları, öğrencilerin OYD geri bildiriminden nasıl yararlandıklarını araştırmak için araştırmacı tarafından toplanmış ve analiz edilmiştir. Uygulamadan iki hafta sonra, öğrencilerin yazma başarılarında herhangi bir gelişme olup olmadığını araştırmak için araştırmadan önce toplanan kompozisyonlarla karşılaştırılmak üzere öğrencilerin çalışmadan sonra yazmış oldukları kompozisyonlar toplanmıştır. Ayrıca, OYD kullanımının öğrencilerin yazma öz-yeterlik inançları üzerindeki etkilerini araştırmak için çalışmadan önce ve sonra bir anket (yazma öz-yeterlik anketi) uygulanmıştır. Ayrıca, öğrencilerin OYD geri bildirimine ilişkin algıları yazılı bir görüş anketi ve odak grup görüşmeleri yoluyla toplanmıştır. Nitel veriler, OYD dönütünün öğrencilerin yazma öz yeterliği ve yazma motivasyonu üzerindeki etkilerini incelemek için de kullanılmıştır. Çalışmanın sonucu, OYD dönütünün öğrencilerin yazma motivasyonunu, yazma öz yeterliliğini ve yazma başarısını artırdığını göstermiştir. Bulgular ayrıca öğrencilerin OYD sistemlerini hem gramer referansı hem de eşanlamlılar sözlüğü amacıyla

kullandıklarını göstermiştir. Son olarak, nitel verilerin analizi, öğrencilerin OYD dönütü hakkındaki görüşlerinin çoğunlukla olumlu olduğunu göstermiştir.



Anahtar Kelimeler :Otomatik Yazma Değerlendirme, yazma öz-yeterliği, yazma motivasyonu, yazma başarısı
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ABSTRACT

This study aimed at investigating the effectiveness of feedback provided via Automated Writing Evaluation on learners' writing motivation, writing self-efficacy beliefs, and writing achievement. 91 preparatory school students studying at a state university in Turkey in 2020 participated in the study and they were divided into three groups: experimental group 1 (N: 31), experimental group 2 (N: 28), and control group (N: 32). Prior to the study, learners' writing tasks were collected to ensure that all groups were similar to each other with their writing achievement. Free versions of two different AWE systems were employed in the study (one for each experimental group). Participants in the experimental groups had teacher+AWE feedback, while participants in the control group had only teacher feedback. Each learner in the experimental groups wrote six essays using AWE feedback. The first and the final drafts of the essays were collected and analyzed by the researcher to investigate how learners made use of AWE feedback. Two weeks after the intervention, learners' essays were collected to be compared with the writing tasks collected prior to the study to explore whether there were any improvements in their writing achievement. Moreover, one questionnaire (a writing self-efficacy questionnaire) was implemented before and after the study to investigate the effects of AWE use on learners' writing self-efficacy beliefs. Furthermore, learners' perceptions of AWE feedback were gathered via a written opinion survey and focus group interviews. Qualitative data were also utilized to explore the effects of AWE feedback on learners' writing self-efficacy and writing motivation. The result of the study indicated that AWE feedback increased learners' writing motivation, writing self-efficacy, and writing achievement. The findings also demonstrated that learners utilized AWE systems both as grammar reference and thesaurus. Finally, the analysis of qualitative data indicated that learners' opinions of AWE feedback were mostly positive.



Key Words :Automated Writing Evaluation, writing self-efficacy, writing motivation,
writing achievement

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Supervisor : Prof. Dr. Gonca YANGIN EKŞİ

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LIST OF ABBREVIATIONS

AWE	Automated Writing Evaluation
CCCC	Conference on College Composition and Communication
EFL	English as a Foreign Language
ESL	English as a Second Language
ELT	English Language Teaching
L1	First Language
L2	Second Language
PEG	Project Essay Grade
SPSS	Statistical Package for Social Sciences

CHAPTER I

INTRODUCTION

1.1. Background of the Study

Language as a medium of communication has aroused a new surge of interest in the past decades and nowadays it may be considered as a tool, which is likely to be affecting the societies' cultural lives and social interactions. When the present status of the globalized world is taken into consideration from the point of common use of language, English language is regarded as the leading one being learned and taught most (McKay, 2010). That is, English language is learned as a second or foreign language all over the world and additionally considered as lingua franca. Turkey, as being one of the countries that English is taught as a foreign language, attaches importance to English language teaching of its citizens. Learning a foreign language is not a simple process as it necessitates learners to develop various skills so as to communicate effectively in the target language. Although all of these skills require attention, writing is one of the most important means of communication not only in the personal life of the individuals, but also in education and business world. Therefore, writing can be considered as a means of communication that gives opportunities to learners to reflect their feelings and ideas on any medium of written work, to arrange their knowledge and beliefs into conveying arguments, and to express meaning via well-established texts. “Learning to write in a second language is one of the most challenging aspects of second language learning” (Hyland, 2003, p. xiii). In American universities and colleges, even native speakers of English, not surprisingly, have difficulties in writing effectively, which demands a considerable instruction (Hyland, 2003). Similarly, components of writing might be challenging to be internalized by foreign language learners (Evans & Green, 2007). Considering this, learning to write requires a considerable focus and attention of the learners. Spoken language is naturally acquired by a person due to being

exposed to it whereas writing ability needs to be taught purposefully (Harmer, 2004). When children are born, they are exposed to the language by listening, and it is a natural process for a child to learn to speak in his/her native language, but they learn to write only when they start formal education in schools. Thus, it can be one of the most challenging aspects of language learning for them when language learners are introduced to writing, as the ability to write is more complicated than that of other language skills since the language learners are to utilize their ideas to produce their papers, which requires several skills to succeed. In addition to these skills, affective factors such as self-efficacy beliefs and motivation also affect the writing achievement of foreign language learners.

Teaching or learning writing effectively might not guarantee a desired level of writing achievement. Self-efficacy, being one of the factors affecting learners' achievement in English language learning, is connected to the writing performance of the learners. Defined by Bandura (1997), the term self-efficacy is related to the "beliefs in one's capabilities to organize and execute the courses of action required to manage prospective situations" (p. 2). Pajares and Miller (1995) concluded that a number of research studies have enlightened the link between self-efficacy and learning outcomes. Self-efficacy perceptions affect how much people strive and how stable they act in spite of obstacles. In that manner, individuals with higher self-efficacy beliefs are making significant efforts to come through the difficulties, which is the cue of upper level of success. As for language learning, learners' own judgments of their abilities are likely to influence their successes and failures in learning English. Moreover, learners tend to maintain faulty beliefs regarding their language skills and weaken their willingness to learn, which might impede the progress of language learning (Horwitz, 1988). In this sense, it should be explicitly noted, while writing is discussed within this context, that an individual's understanding of his or her capacity to write efficiently is a key constituent. Namely, the term writing self-efficacy covers the perceptions of learners concerning the psychological strategies they use when they face with writing difficulties. Employing learning strategies in writing tasks, creating appropriate classroom conditions and effective writing instruction may reinforce the learners' self-efficacy beliefs about activities encompassing writing.

Along with self-efficacy, motivation is also regarded as one of the factors influencing foreign language learning. That is, motivation is a critical issue in promoting EFL education involving diverse psychological, social, and cognitive characteristics, and motivation is among the most significant ones. Described as the preference of, the perseverance with, and

commitment to a particular behavior or act by Dörnyei and Ushioda (2013), motivation is of great importance to be able to meet the needs of writing successfully. It is also recognized as being positively and overwhelmingly connected with EFL writing attainment (Masgoret & Gardner, 2003). In other words, one of the major issues restricting or promoting writing skills is the motivation of learners to write in EFL settings. As motivating students for EFL writing is a critical issue, the problems leading learners to become demotivated need to be addressed. Learners' consideration of writing as a tedious activity constitutes one of the problems in learning and teaching writing. Moreover, the fact that the completion of a writing task requires a long time and effort may also decrease learners' writing motivation. Another problem is learners' perceptions related to the process of writing which mostly includes multiple drafting procedures, and the difficulty of the tasks that may cause learners to lose their motivation. In addition, teachers' insufficient and not individualized feedback is seen as a factor affecting learners' writing motivation (Bahous et al., 2011).

Learners may still not succeed in writing even if they have writing motivation and positive writing self-efficacy beliefs; that is, they are likely to need feedback for their written work. Feedback can be described as the explanations provided with a written or oral way, implicit or explicit to the students to correct their errors. Feedback "has long been regarded as essential for the development of second language (L2) writing skills" (Hyland & Hyland, 2006, p.83). Thus, to ensure learners writing improvement, they must be provided with written corrective feedback. However, the benefits of corrective feedback as a tool to develop learners' writing achievement are controversial. Even though there's more than enough evidence that the error treatment is of benefit to students (Ashwell, 2000; Fathman & Whalley, 1990; Ferris & Roberts, 2001, Ferris, 2004), studies have also shown that the correction of grammatical errors of learners does not produce any positive outcomes in terms of their development in writing (Truscott, 1996, 1999, 2007). As a writing instructor, the researcher of this very study is of the belief that written corrective feedback improves learners' writing achievement in areas such as grammar, spelling, punctuation, content and organization. Thanks to advancements in technology, learners now have the option to get feedback from some software systems created for providing feedback for their written work.

Basically defined as the computer capacity to evaluate papers, Automated Writing Evaluation (AWE) systems have gained the interest of the researchers and the instructors lately. Shermis and Burstein (2003) stated that AWE systems can be explained as computer-based technologies in which the coded systems evaluate the compositions. These systems

grade learners' written work thanks to utilizing artificial intelligence technologies. As for the success of AWE scoring, a number of research studies have found positive correlation between human scoring and AWE scoring (Elliot, 2003). AWE was firstly developed to grade papers to assist teachers with this tedious process (Chen & Cheng, 2008). Later, when the demand for these systems increased, the developers enhanced the capacity of the systems by adding feedback features. Li et al. (2015) stated that written corrective feedback, which is an essential part of writing instruction, can now be integrated with AWE, and it will benefit EFL/ESL writers. With the help of AWE feedback, learners are now able to get immediate feedback for their compositions and do not have to consult teacher or peer feedback especially for surface level errors such as grammar, spelling, and punctuation. Even though AWE software systems' usage may show differences, the feedback procedure is similar in that learners' errors are labeled or underlined, and the systems provide explanations, rules and possible correct versions. Along with providing feedback, AWE systems also encourage learners to self-edit their errors, which increases learners' writing self-efficacy and fosters writing development of the learners (Ranalli, 2018).

1.2. Statement of the Problem

McNamara et al. (2015) suggested that learners, who are not able to write effectively, are more likely to have problems with regard to conveying their ideas, convincing others and becoming successful in personal and academic life. Thus, learners are to be equipped with the necessary linguistic knowledge so as to write and convey their ideas efficiently. Even though L2 writing instruction has changed its focus from depending on grammar to giving priority to meaning, surface features of writing still facilitate L2 writers to transfer their intended message efficiently (Ferris, 2006). In this respect, grammatical accuracy, along with content and organization, is one of the vital aspects of academic writing which determines the quality of a written text. In process-based writing instruction, one frequently emphasized method for improving learners' writing skills is to involve learners in preparing, drafting, revising, and editing processes of their essays (Graham & Sandmel, 2011). Teacher feedback becomes more of an issue in developing learners' writing skill in process-based writing due to the fact that learners need feedback during each process in order to create well-constructed texts. Biber et al. (2011) explain the five categories of teacher feedback as lexis, grammar, mechanics, organization, and content. However, teachers may not cope with all these feedback points as it takes a great amount of effort. Besides being a tedious task,

there can usually be time constraints in the classroom to provide each student with a satisfactory corrective feedback that can contribute to a better understanding (Lin et al., 2014). Moreover, in situations where the number of students in each class is high, it becomes highly impossible for teachers to provide each learner with individualized feedback, and teachers spend most of the feedback time giving priority to grammatical errors of students focusing less on issues such as content and organization which are seemingly more important aspects of writing. Furthermore, process-based writing instruction turns into product-based in crowded classrooms, as teachers are forced to prefer explicit rather than implicit feedback to be able to provide assistance to each student, which discourages learners to write multiple drafts and makes them less active in writing process as the teacher explicitly corrects learners' errors preventing learners from editing or correcting their own errors. Additionally, learners tend to ignore teacher feedback, lose their writing motivation and use simpler structures to avoid making errors after being repeatedly criticized for their grammatical problems in their written work (Truscott, 1996, 1999). Similarly, as Boscolo and Hidi (2007) suggested, learners may be unwilling to write because of some writing difficulties, and feedback exceedingly on grammatical errors is considered as one of the difficulties learners face with, which in turn decreases learners' writing motivation. In addition, learners' writing self-efficacy beliefs may be adversely affected since negative feedback may leave a bad impression on learners by making them believe that they are not capable of creating well-developed papers (Pajares et al., 2007). Thus, taking these writing problems into consideration, new approaches for providing feedback to the learners' papers should be addressed and analyzed.

1.3. Aims of the Study

This study aims to investigate the effectiveness of Automated Writing Evaluation feedback (*Grammarly* and *ProWritingAid*) on improving tertiary level learners' writing achievement. It is also aimed to examine the effects of AWE feedback on learners' writing motivation and writing self-efficacy beliefs. Moreover, kinds of errors that learners correct using AWE software systems will be analyzed. Additionally, learners' opinions about using Automated Writing Evaluation systems will be explored. As for the final purpose of the study, the traditional teacher-peer grammar feedback and AWE grammar feedback will be compared with respect to the effects on learners' writing self-efficacy beliefs, learners' writing motivation and learners' writing achievement.

The present study addresses the following research questions:

1. Is Automated Writing Evaluation feedback effective in improving learners' writing achievement?
2. Does using Automated Writing Evaluation feedback increase learners' writing motivation?
3. Does using Automated Writing Evaluation feedback increase learners' writing self-efficacy beliefs?
4. What kind of errors do learners correct using Automated Writing Evaluation feedback?
5. What are the learners' perceptions of using Automated Writing Evaluation as a source of feedback in writing classes?

1.4. Significance of the Study

Lately, the demand for technology implementation in educational settings has increased the tendency of using AWE systems in writing classes by teachers and students; therefore, research on the effectiveness of AWE systems needs due attention (Chen & Cheng, 2008; Shermis & Burstein, 2003). Similarly, Zhang and Hyland (2018) asserted that with the advancements of computer assisted instructional technologies, a growing number of research studies have started to contain AWE feedback. A lot of studies have been conducted by either the producers of AWE systems or researchers endorsed by the developers of AWE systems, which resulted in reaching findings on behalf of AWE systems (Stevenson & Phakiti, 2014). That is, in most of the studies in the literature, premium versions of AWE software systems were implemented. For instance, in previous studies (Caveleri & Dianati, 2016; Chen & Cheng, 2008; Dikli, 2010; Dikli & Bleyle, 2014; El-Ebyary & Windeatt, 2010; Fang, 2010; Ghufron & Rosyida, 2018; Lai, 2010; Lavolatte et al., 2015; Li et al., 2015; Li et al, 2017; Liao, 2016; Liu & Kunnan, 2016; O'Neill & Russell, 2019; Ranalli, 2008; Wang et al., 2012; Wilson & Czik, 2016; Zhang, 2020), the participants utilized premium versions of AWE systems. However, few studies (Koltovskaia, 2020; Nova, 2018) employed free version of *Grammarly* in their choice of AWE systems. In the literature, it is seen that the researchers preferred various AWE software systems. Among aforementioned studies, four studies (Chen & Cheng, 2008; Dikli, 2010; Fang, 2010; Lai, 2010) used *My Access!*, six studies (Dikli & Bleyle, 2014; El-Ebyary & Windeatt, 2010; Lavolatte et al., 2015; Li et al., 2015; Liao, 2016; Ranalli, 2008) used *Criterion*, one study (Wang et al, 2012) used

CorrectEnglish, one study (Liu & Kunnan, 2016) used *WriteToLearn*, one study (Wilson & Czik, 2016) used *PEG Scholar Writing*, and five studies (Caveleri & Dianati, 2016; Ghufroon & Rosyida, 2018; Koltovskaia, 2020; Nova, 2018; O'Neill & Russell, 2019) implemented *Grammarly*. To the knowledge of the researcher, no study using *ProWritingAid* for AWE feedback was found in the relevant literature. Also, mentioned studies employed only one AWE software system in their designs. These studies investigated the effects of AWE feedback on learners' written texts and explored learners' opinions of using AWE. In Turkish context, to the researcher's knowledge, AWE studies are also scarce. One study (Erdal-Bulut, 2019) used premium version of *PEG Scholar Writing*. Erdal-Bulut (2019) investigated the effects of AWE use on learners' writing achievement and learners' writing motivation. In another study, Gençer (2019) implemented *CyWrite* and explored its effects on writing achievement and examined learners' perceptions of utilizing AWE with no indication of whether premium or free version of AWE was used. Therefore, this very study is significant due to some reasons. Firstly, this study will employ two different AWE software systems (*Grammarly* and *ProWritingAid*) in its design. Also, free versions of these AWE systems will be used by the participants in the study; thus, the results obtained from this study may also guide the teachers and the learners in writing instruction in that the study will investigate to what extent the feedback provided by the free versions of AWE systems is efficacious. The design of this study focusing on the use of free versions is crucial when costly prices of premium versions are considered since not all learners could afford to purchase the premium versions of these systems. With free versions, it is aimed that learners will be able to consult AWE feedback whenever they need assistance for their written work. Therefore, it will contribute to writing instruction of the teachers to use it as a supplementary tool for providing feedback and will be of great help for learners to reach immediate feedback. In the literature, the effects of AWE feedback with regard to learners' writing motivation and writing self-efficacy beliefs have been found to be scarce; hence, this study will be beneficial to fill this gap by providing deeper insights on these affective factors which are thought to influence the learners' language achievement. Consequently, this study aims to contribute to the relevant literature as it will provide an understanding of AWE feedback and its effects on learners' writing achievement, writing self-efficacy, and writing motivation.

1.5. Hypotheses of the Study

The current study aims to address the following hypotheses:

1. Automated Writing Evaluation feedback makes a significant difference in improving learners' writing achievement.
2. Automated Writing Evaluation feedback positively affects learners' writing self-efficacy beliefs.

1.6. Assumptions of the Study

The following assumptions have been taken into consideration in this current study:

1. All participants are assumed to answer frankly to the items in the questionnaire
2. All participants are assumed to be sincere while answering questions in the opinion survey and in the focus group interview.
3. All participants are assumed to carefully analyze and adapt AWE feedback into their subsequent drafts.
4. The data collection tools used in this study are assumed to be sufficient in collecting data about learners' writing motivation and writing self-efficacy beliefs.
5. The participants' computer literacy was not tested, but it is assumed that learners' computer literacy is adequate to be able to use AWE software systems and send e-mails.

1.7. Limitations of the Study

This study has certain limitations:

1. This study is limited to 91 tertiary level EFL learners studying at Sivas Cumhuriyet University School of Foreign Languages.
2. This study focused on writing skills of the learners studying at Sivas Cumhuriyet University School of Foreign Languages.
3. The participant groups are limited to two experimental and one control group.
4. This study is limited to exploring the effects of AWE feedback on learners' writing achievement, learners' writing motivation and learners' writing self-efficacy beliefs.
5. The increase in writing achievement may result from the learning effect.

6. The difference in writing motivation and writing self-efficacy beliefs of the learners may be due to learning effect.

1.8. Definition of the Terms

AWE: The computer ability to assess and score written texts and provide feedback on written work.

Motivation: An internal desire a learner has to learn the language in order to succeed in learning process.

Self-editing: A learner-centered activity where learners spot and correct errors in their own writing tasks.

Self-efficacy: People's own judgments of their capabilities which affect the type of activities they want to participate (Bandura, 1986).

Writing Motivation: The feeling of being willing to take part in the writing process.

Writing Self-efficacy: Learners' own judgments of their abilities to write in the target language (McCarthy et al., 1985).

CHAPTER II

LITERATURE REVIEW

2.1. Writing as a Language Skill

Language skills are divided into two as receptive skills and productive skills. Receptive skills involve reading and listening skills in which the learners extract the meaning from a context while speaking and writing are the two productive skills where learners are expected to generate the language themselves (Harmer, 2007). Due to the requirement of composing a written product, writing skill is presumed as one of the most complicated language skills for learners. Writing is also a required skill for language learners to be able to succeed in their academic lives. During the 1970s, L1 research has affected the approach towards second language writing in that processes involved in two languages may not be totally the same but could be similar (Brown & Lee, 2015). Moreover, L2 teachers were suggested to use the techniques in L1 teaching. However, Silva (1993) suggested that the texts of L2 writers were less coherent (including fewer words), less correct (having more errors) and less efficient (getting less holistic scores). In this vein, it is obvious that despite having some similarities such as drafting and revising, L1 and L2 writing show a great deal of differences.

2.2. Writing as a Foreign Language Skill

According to Cumming (2001), writing in a foreign language includes three basic dimensions, which are texts people write, composing process people follow during the production stage of their texts, and sociocultural contexts where people produce their texts. The first dimension includes knowledge of syntax and vocabulary in its micro-level while consisting of cohesive devices in macro level. In this stage, Harley and King (1989) stated that learners of English as a foreign language develop their micro-level of context, namely their language knowledge regarding syntax and morphology. About the vocabulary range,

the improvement in foreign language writing proficiency enhances the capacity of the learners' use of vocabulary items (Grant & Ginther, 2000). Even though these micro-levels may show the text accuracy in terms of grammar and vocabulary, the usage of cohesive devices at macro level is of great importance to make the text fluent. Connor (1996) asserted that thanks to cohesive devices, learners become a lot more successful in improving their texts to become fluent.

The second dimension is the composing process of writers. This dimension is the stage where learners search for the appropriate words for their texts, and also, they plan and revise their papers during the composing procedure. Given that English is not the learners' own language, EFL learners have trouble finding proper words that match best for the intended meaning. Although the equivalent of a word in learners' native language may sometimes sound correct, the context in which the word is used may necessitate a different word to fully express the intended meaning of the learner. Hence, the pursuit of searching the words is a challenging process for the EFL learners, which requires a lot effort to spend till reaching the desired proficiency level. In their research, Chenoweth and Hayes (2001) found out that proficient EFL learners are able to locate context-related words and phrases. Moreover, these learners, as Akyel (1994) stated, have the capacity of using strategies while composing their texts such as planning, drafting and revising. Thus, learners' language proficiency may tend to influence the processes of their language learning.

The last dimension is the social contexts where people produce their texts. In social contexts, people learn ways to search for help from various people and to get used to the new situations. An example of this is that learners consult teacher and peer support in educational settings while language learning process takes place. Moreover, they participate in a discourse community which determines the type of texts they produce.

2.3. Approaches to Writing

There are different forms of teaching writing in EFL classrooms. It will be wrong to state that one approach is the most appropriate, or the other one is inadequate. It is the responsibility of the teachers to determine which approach is the best by taking into consideration the learner types, syllabus and curriculum.

In the past, writing was employed as a complementary practice to be used by teachers to teach grammar and vocabulary subjects to learners. The learners were given a topic and

expected to write based on that topic in product based writing. After the advancements in the research area that emphasize teaching writing, teachers started to shift from product-based approach to process-based approach.

2.3.1. Product Approach

Harmer (2007) defines product approach as “it values the construction of the end-product as the main thing to be focused on” (p. 325). Thus, in product based approach in writing, students’ final product is of great importance in that the teachers only evaluate that particular product to decide whether students reach the desired level in writing or not. In addition, Pincas (1982) stated that product-based approach in writing focuses highly on accuracy in learners’ writings and the appropriate use of lexical and cohesive devices is crucial. In product-based approach in writing, learners are to be equipped with the necessary knowledge of grammar, vocabulary, punctuation, spelling, and the skills of idea development to be able to produce clear and meaningful writings (Hedge, 2005). However, due to the focus on grammatical and lexical units a lot during the writing process in product-based writing, learners are likely to neglect another vital point of writing, the content.

“Controlled sentence construction, free composition, and the homework function” (McDonough & Shaw, 1996, p.178) are employed in product based writing approach. Moreover, for Nunan (1995), what language learners do in product based approach is to imitate and copy the model paragraphs and essays. In product-based approach, learners start to the writing activity by first reading a model text and analyzing its features, such as language and vocabulary use, and organization of ideas. Next, they perform controlled writing activity where they practice, for instance, the target grammar form used in the model text. Later on, during the next stage, which is a crucial stage for learners, they organize their ideas in line with the model text they read. On the final stage, they produce their papers using the structures, vocabulary items and organization patterns they practiced in the previous stages.

2.3.2. Process Approach

The dominant teaching way of second language writing skill in the 1960s depended on product and grammatical structures, and lexical varieties of texts were given importance by the teachers of English (Hyland, 2003). This hinders learners to produce texts in different

contexts due to the fact that learning based exclusively on grammatical and lexical knowledge limits learners to build their products communicatively. Later on, when this teaching method seemed to be proven not to be effective, the teaching method shifted onto language forms combining linguistic structures and lexical knowledge with functions. In this vein, learners were to create structures and use vocabulary items in meaningful units. However, in the recent history, as Murray (1985) and Elbow (1998) stated, a lot of writing teachers from different cultures started to see their classroom objectives to improve learners' communicative abilities. That is, writing classrooms evolved, and learners shared their personal experiences and opinions making the lessons more creative providing an opportunity for learners to discover. After this evolution, the approach to writing turned into process-based writing instruction.

For a long time, writing was seen as a product leading students' attention to 'what', which prevented students from focusing on the process of writing, namely 'how' to produce a text by following a process including stages such as, brainstorming, drafting, revising, and editing (Harmer, 2004), and many teachers started to prefer to adopt process based approach to teach writing (Harmer, 2007). L2 writing not only necessitates syntax and spelling knowledge in order to convey ideas in the appropriate form, but it also requires planning and reviewing so as to meet the goals of writing (Ransdell & Barbier, 2002). Nonetheless, Zen (2005) stated that most of the time, the product of the learners is taken into consideration during the evaluation process neglecting the process of composing; that is to say, process-based approach in writing is not always applicable for any learning situation. In process-based approach, the focus is given on the procedure that learners follow. That is, learners are encouraged to brainstorm about the topic they are going to write before starting to the writing process at once in process-based approach. Many teachers are not aware of the impact of the brainstorming technique or the value of strategic training in encouraging learning skills of students (Bejarano et al. 1997). Not only does it encourage thinking and lead the students to focus and plan their ideas, but it also supports understanding and thinking about the language (Rao, 2007). In this stage, teachers are to encourage students to come up with ideas in pairs or groups. Moreover, for drafting, students should be given assistance by their teachers after they write each draft. Peer editing can also be implemented in the writing process where the students reflect on each other's papers. Instead of giving feedback on the final draft only, teachers are to provide feedback to students between the first and the final drafts. In process-based writing approach, learners first brainstorm ideas to be used in the writing process.

Here, all ideas are invaluable and not criticized by the teacher. Next, students evaluate their ideas and create an outline, which helps learners see the hierarchical order of ideas. Later, they write their first drafts. During the next stage, written drafts are exchanged between students, and they comment on each other's papers. Teacher feedback can be provided in this stage as well. Taking the feedback given by peers and the teacher into consideration, students write their final drafts. Finally, learners are provided final feedback by their teacher and peers.

2.3.3. Genre Approach

Another approach in writing, genre approach, refers to learners' writing on some genres for use in particular situations such as writing e-mails, writing letters in business situations, writing essays in educational settings (Flowerdew, 1993). Cope and Kalantsiz (1993) explained the three stages in genre writing where the learners first model the target genre to get the gist of composing effectively related to the genre, then learners and teacher work together to create the composition, and finally, learners, on their own, write their compositions based on the genre they studied. However, explicit instruction for genre writing may decrease learners' creativity and limit their expression ability because it resembles a copy-paste process; thus, teachers are expected to choose and implement the most appropriate approach for their students in the process of teaching writing.

2.4. Feedback in Writing

Error correction and feedback in L2 writing concern many researchers and writing teachers. Moreover, L2 teachers mostly report that error correction in writing is one of the most demanding and tiring processes in their language teaching instruction (Ferris, 1999). For grammar correction, Truscott (1996) puts forth that almost all of the language teachers correct their students' grammar errors in one way or another. However, error correction is troublesome for teachers and students inasmuch as students devote a lot effort to be more accurate, and for the teachers, the long term effect of error correction is of uncertainty (Ferris, 1999). Correspondingly, Truscott (1996) asserted teachers are, most of the time, unwilling to accept the fact that feedback on grammar is not efficient, and also research findings are not likely to seem enough to convince the teachers for that matter.

Ferris et al. (1997, 2013) suggested that grammar feedback plays a vital role to motivate and assist language learners. Similarly, providing error feedback may be in favor of learners and their writing development while the absence of feedback might be disadvantageous (Ferris, 2004). Truscott (1996) suggested that research on grammar correction in writing classes revealed that feedback on grammar correction is not effective for learners' writing competence and achievement. Based on his meta-analysis on research related to feedback on error correction, Truscott (2007) concluded that grammar error correction has harmful effects on students' writing, and we, as researchers and English language teachers, can be 95% sure that the positive effects are very little. Learners, after being corrected and criticized again and again, may not be eager to use complex structures and advanced vocabulary so as to avoid being criticized because of their grammatical errors (Truscott, 1996, 1999). Moreover, they are likely to develop negative attitudes towards writing, and even the learners who approve grammar feedback will end up being discouraged because of being constantly criticized and corrected. In parallel, unclear feedback results in demotivating learners for learning writing; thus, so as to prevent this undesired effect, teachers are supposed to develop error charts and rubrics to become understandable for learners (Ferris, 2004; Ferris et al., 1997).

Truscott (1996) believes that even selective correction technique for grammar does not improve learners' writing competence. On the other hand, Ferris (1999) suggested that unplanned and poorly provided error correction is surely not effective for learners to reach the desired writing achievement; however, "selective, prioritized, and clear" (p. 4) error correction will foster learners' writing. Furthermore, Truscott (1996) suggested that the general approach to correct grammatical errors of learners' writing is to provide them the correct answers explicitly or implicitly leading them to discover their errors themselves. However, this knowledge transfer from teacher to students does not necessarily guarantee the learners' acquisition of the rules and applying them in their future writings. Unitedly, Truscott (1996) and Ferris (2004) agreed that grammar includes lexical, morphological, and syntactic knowledge; thus, the same correction technique will not apply to all, which requires the teachers to implement different kinds of techniques.

For Truscott (1996), another problem with the inefficiency of grammar feedback on writing is related to teachers' ignorance about the learners' developmental stages. That is, learners may not be cognitively ready for the provided feedback. Ferris et al. (1997) and Ferris (2004) warns language teachers to be aware of the fact that learners' abilities to write, their needs,

and their personalities are distinct; therefore, teachers should know there is no certain type of feedback which will fit for all errors and all learners. Ferris' (2006) suggestions for L2 writing teachers are that teachers must provide implicit feedback mostly, locate the errors directly instead of using codes and implement different kinds of feedback techniques for varying errors.

As for the teachers' role in providing feedback, Truscott (1996) explains that grammar feedback on writing is lack of effectiveness due to teachers' inability to spot errors and teachers' workload, which includes grading a great number of papers, may negatively affect the quality of the feedback of the teachers. Another point about feedback problems related to teachers is the teachers' feedback being inconsistent that makes the understanding of the feedback difficult for the learners. This problem arises due to teachers' being busy and having to deal with different kinds of errors at the same time. However, even the teacher could spot all the errors and become consistent about grammar feedback, it will prevent the teachers from focusing on content and idea organization and take a great deal of time, which in turn is not practical. On the other hand, Ferris (2006) noted that teachers' comments on students' writing were found to be accurate and comprehensible for the learners.

Ferris (1999, 2004) assumes that because there is no handbook for providing effective feedback, teachers are to develop strategies and plan their feedback sessions beforehand in their classes. This careful planning will enable teachers to become more accurate with their feedback. However, Truscott (1999) criticizes this, for all these preparations and providing learner-specific grammar correction are likely to be time-consuming and end up with not focusing on more important points of writing than grammar correction; moreover, because learners also need to devote a great amount of time for grammar feedback revisions, they may lose their interest in writing, and all these might be considered as the disadvantages that could occur with feedback.

Considering the advantages, Ferris' (1995) research revealed that strategy training for self-edit improved learners' grammatical accuracy. On that matter, Ferris et al. (1997) found that feedback provided for the whole semester improved learners' writing and developed their self-editing abilities. Moreover, participants in the study indicated that feedback was helpful for their writing development. Instead of leaving grammar correction thoroughly, L2 teachers are required struggle to make their feedback more efficient (Ferris, 1999). In their experimental research, Ferris and Roberts (2001) found that learners made use of feedback and improved their accuracy in writing; moreover, less explicit feedback provided with error

type codes encouraged learners to self-edit their papers. Provided that the learners are trained on how to self-edit their papers and teachers give focused and selective feedback, the results will be promising for the development of learners' writing achievement (Ferris, 1999, 2004, 2006). It was also claimed by Ferris et al. (2013) that perceptions of learners on written corrective feedback, which was provided with different techniques such as revisions and interviews, were positive, and learners made progress in developing their accuracy in writing.

To summarize, the researcher of this study is a supporter of Truscott's view about the grammar feedback being time-consuming and tedious for language teachers; on the other hand, the researcher supports Ferris' views, for he believes grammar feedback is necessary for learners for their writing accuracy development, and the researcher also thinks that when the learners self-edit their papers, they will improve their writing achievement. Thus, AWE systems are believed to be efficient for learners since they will both have feedback for their grammatical errors and have the opportunity to self-edit their papers.

2.5. Motivation

The issue of the definition of motivation has been problematic for long years in that writers could not agree upon a consensus. Littman (1958) states that the exact meaning for motivation still needs agreement; moreover, he also asserted that motivation is a kind of psychological process, which may be innate or acquired regulating or defining how the behavior is started, preserved or ended. That is, it can be inferred that not just the emergence of a certain behavior is due to the motivation but also the maintenance and the closure. The definition given by Pintrich and Schunk is "motivation is the process whereby goal-directed activity is instigated and sustained" (1996, p.4). Thus, the behavior is shaped according to people's aim of doing that action. For Harmer (2001), "at its most basic level, motivation is some kind of internal drive which pushes someone to do things in order to achieve something" (p. 51). Dörnyei (2005) posits that "motivation provides a primary impetus to initiate learning in the L2 and later the driving force to sustain the long and often tedious learning process" (p. 65). Hence, a desired amount of motivation will pave the way for the learner to consider the long process of L2 learning. Motivation refers to the direction and strength of human behavior (Dörnyei & Ushioda, 2011) which explains preference, endurance, and effort respecting human behavior; namely, determining the reason why people are carrying out the behavior, the amount of time they could sustain, and how much

they are eager to try. Dörnyei (1998) indicated that even though the term of motivation has been widely used not only in educational context but also in research context, the agreement on the exact definition of the term is lack of high consensus. When all these definitions are taken into consideration, it is, though defined differently by various scholars, generally accepted that motivation is a prerequisite for L2 learning.

For Ellis (1997), L2 motivation includes affective situation and attitudes of language learners that affect the effort learners make to be able to learn the language. That is to say, L2 motivation may have an undeniable impact on learners' language learning process. Correspondingly, Dörnyei (1998) alleged motivation has been largely regarded as one of the fundamental factors affecting the achievement of L2 learning. Along with providing an essential impulse for L2 learning, motivation also plays a vital role as a driving force for learners and is accepted as having an influence on the other factors involved in L2 learning.

2.5.1. Types of Motivation

Deci and Ryan (1985) introduced two types of motivation as intrinsic and extrinsic. Various researchers (Deci & Ryan, 1985, 2000a, 2000b; Dörnyei, 1994; Pae, 2008; Ushioda, 2008) argued that intrinsic motivation already in existence with people can be described as carrying out an action due to the action being intrinsically interesting or pleasing; thus, increasing the quality of the learning process while extrinsic motivation, on the other hand, can be regarded as carrying out an action due to the fact that it generates the desired outcome such as a reward. Moreover, intrinsic motivation is of great importance for people's lifelong learning increasing their interest and curiosity for learning throughout their lives (Ryan & Deci, 2017). To summarize, Deci and Ryan (2020) considered that extrinsic motivation is related to one's completing an activity "for reasons" rather than their intrinsic interest or satisfaction. The best way to understand whether an activity is carried out with extrinsic motivation or not according to Csikszentmihalyi and Nakamura (2014) is to ask: "Would a person do this even if no reward or punishment followed from the activity?" If the answer is "No, he or she would not," it makes sense to assume that the motivation was extrinsic" (p. 180). To illustrate, learning English for self-development and cultural enrichment can be regarded as intrinsic motivation while learning English to have higher grades or a qualified-job in the future are examples of extrinsic motivation.

Ushioda (2008) asserted that a lot research evidence showed that intrinsic motivation presents a more effective language learning compared to extrinsic motivation, and intrinsically motivated language learners have a tendency to use creative thinking and a great variety of problem-solving strategies. However, even though intrinsic motivation may sound the most favorable type of motivation for a language learner to have, what actually matters is whether the motivation is internalized and reaches long-term success or not (Ushioda, 2008). From this point of view, English language teachers are supposed foster any type of motivation which will help the learner improve himself/herself.

Vallerand (1997) explained the three subtypes of intrinsic motivation as (a) learning which is related to one's involvement in an activity for the satisfaction of understanding the given task, (b) for achievement, which can be considered as one's desire for achieving a difficult situation, and (c) experiencing impulse, which can be considered as one's involvement in an activity with the aim of satisfying one's own feelings thanks to the activity.

Deci and Ryan (1985) offers four stages of extrinsic motivation as *external regulation*, *introjected regulation*, *identified regulation*, and *integrated regulation*. *External regulation* refers to the motivation the individual has, which is coming totally from external factors such as rewards by teachers or threats by parents. The second one, *introjected regulation*, is related to the individuals' having motivation not to feel guilty; that is to say, the laws of the country or social norms can be examples of introjected regulation. The third one, *identified regulation*, refers to the fact that the individual sustains the activity for they value its usefulness; for example, the advantages of learning English on the individuals' pursuing their hobbies such as watching movies may be regarded as an illustration of identified regulation. The last one, *integrated regulation*, is the most advanced type of extrinsic motivation, which includes the behavior the individual personally chooses to carry out. As an example, the individual has the motivation for learning English as s/he sees learning and having proficiency in English as a part of being an educated person in society.

Brown (1990) highlighting the priority of intrinsic motivation in the classrooms of L2 claimed that activities in traditional classrooms are mostly encouraging learners' extrinsic motivation where students are focused on financial rewards of learning not on the satisfaction, exploration and creativity that will help the learner internalize the language learning process. Accordingly, Dörnyei (1994) assumed that if the learners are obliged to meet some extrinsic necessities such as compulsory English education in schools, they are likely to lose their intrinsic interest in language learning. That is, a student may be into an

activity with the hope of reaching a reward in the first place; nonetheless, if the reward is not too controlling, the student may become intrinsically motivated thanks to having the satisfaction or pleasure from that activity.

Two other types of motivation defined by Gardner and Lambert (1959, p. 267) are integrative and instrumental motivation. In their pioneer work, they describe integrative and instrumental motivation as “*integrative*, where the aim in language study is to learn more about the language group or to meet more and different people; *instrumental*, where the reasons reflect the more utilitarian value of linguistic achievement”. Instrumental motivation is the motivation type where learners make effort for various functional reasons (Ellis, 1997). Learners may be motivated to learn the language to pass an exam or to get a better job in their future careers. Moreover, Schmidt and Savage (1992) implied that instrumental motivation emerges due to the realization of the practical benefits of learning the language. Gardner (1978) also alleged that integrative motivation refers to learners’ willingness to be a member of the target language community. That is to say, a learner is motivated to learn the target language to be like one of the members of that language’s community. However, Dörnyei (2005, 2009) criticizes Gardner’s theory of integrative motivation in that Gardner’s theory is based on studies in Canada where language learners have a chance to speak with the members of target community; however, in countries where the language is taught as a school subject and individuals have no chance to contact with the members or target language, the integrative motivation term becomes an ambiguous term. In a similar vein, Noels (2001) also said integrative motivation becomes a term related to some specific contexts where the individuals are already able to contact with the target language group. Peter et al. (2009) inferred that with English spreading all over the world, English language has become less and less related to any specific culture. Moreover, because of this rapid spread, there is no culture-linguistic specific identity that one language learner can adapt himself/herself. Yashima (2000) explains that now individuals are motivated to learn the language due to “interest in foreign or international affairs, willingness to go overseas to study or work, readiness to interact with intercultural partners and ... a non-ethnocentric attitude toward different cultures” (p. 57). Therefore, the current meaning of integrative motivation has undergone a change in covering all world English context, Global English.

2.5.2. Writing Motivation

About the concept of writing motivation, Boscolo and Hidi (2007) stated that owing to different kinds of writing difficulties, writers may be reluctant to write decreasing their motivation towards writing. Especially, novice writers of English consider these difficulties as an obstacle being complex to overcome; thus, facing with these problems poses undesirable effects on learners' writing motivation. However, on the other hand, proficient writers of English consider these difficulties as problems to be solved not affecting their motivation towards writing considerably. Nelson (2007) explains that people in different settings produce writing due to experiencing a rhetorical situation, which refers to the situations writers are motivated for writing. Moreover, Bitzer (1968) considers the rhetorical situation as a necessity that invites utterance. An illustration of this is that professors are in a rhetorical situation in which they try to write articles to be published, which in turn motivates them to write. When it comes to writing in educational settings, learners are required mostly to write assignments as a requirement of the course and provided prompts which have them take a move to write, which is related to the motivation for writing. Lee et al. (2017) found that more proficient students were more motivated to write compared to low-level students. In accord, the proficiency of students has a direct effect on their writing performance, which is closely related to writing motivation (Troia et al., 2013).

2.6. Self-Efficacy

According to a definition provided by Bandura (1986), self-efficacy is "people's judgments of their capabilities to organize and execute courses of action required to attain designated types of performances" (p. 391). People's self-efficacy judgments dramatically affect the type of activities they choose to participate (Bandura, 1982; Wigfield & Eccles, 1992). Also, self-efficacy decisions of people influence how much energy they are able to spend on the activity and the amount of time that they can keep doing the activity. Pajares and Johnson (1994) argued that self-efficacy beliefs influence behavior by controlling people's decisions, commitment, and perseverance in overcoming obstacles and difficulties, and habits of thinking and emotional reactions. Shell et al. (1995) asserted that self-efficacy is the individuals' own perceptions of his/her capabilities of carrying out an activity successfully, which necessitates the individual to implement the necessary cognitive and behavioral skills. People, therefore, tend to stay away from the activities they consider as exceeding their

abilities; however, they take part in the ones they consider themselves as capable of succeeding.

“Self-efficacy beliefs function as an important set of proximal determinants of human self-regulation” (Bandura, 1991, p.257). That is to say, self-efficacy beliefs determine people’s choices, their ambitions, the amount of effort they put into the task in question, and time duration they continue carrying out the given activity despite challenges and difficulties. As Schunk (1981) and Pajares (1996) revealed, when people have doubts about their capabilities, they abate their efforts and/or leave the activity thoroughly, and Bandura (1991) also asserted focusing on failures may be discouraging for the individual and weaken the sense of self-efficacy; contrarily, if they have powerful self-efficacy feelings, it is of highly probable that they apply more effort to be able to succeed in the activity. Bandura (1982) stated that if a person is lack of self-efficacy, people are likely to behave ineffectively even though they know how and what to do. On the other hand, although it may not sound reasonable, if the learners overestimate their self-efficacy, it may be useful in that the learners will increase the amount of effort they expend, which may respectively increase the success (Bandura, 1999). Thus, provided that the individual has strong sense of self-efficacy, it is pretty likely that s/he continues doing the activity till being successful.

According to Bandura (1989), there are four major resources of information self-efficacy judgments are connected with. *Enactive attainments* refer to being successful in an activity increases self-efficacy while failing a couple of times lowers the self-efficacy. *Vicarious experiences* are related to observing others’ experiences within the activity; that is, seeing others being successful may increase the individual’s self-efficacy beliefs. *Verbal persuasion* is concerned with persuading the individual to believe that s/he is capable of doing the activity. If a person has reasons to maintain the activity, verbal persuasion is likely to be helpful to increase self-efficacy. *Physiological state*, on the other hand, refers to an individual’s own judgment about his/her own physiological state where the individual analyzes his/her own strength to complete the activity, which may affect self-efficacy.

Bandura and Schunk (1981) pointed out that setting up some sub-goals; for instance, being able to construct compound-complex sentences in writing and/or writing a well-built paragraph en route lexical-structural competence in the target language helps the individuals to improve their sense of self-efficacy. These sub-goals, when they are attained, are the indicators of reaching mastery in the activities carried out, which in turn fosters the individuals’ perceptions of self-efficacy (Bandura, 1989).

School environments such as peer interaction, instruction types, teacher-attitudes, curriculum, and family attitudes influence the individuals' sense of self-efficacy (Schunk, 1987). That is, higher self-efficacy thanks to these factors in educational settings and domestic settings might foster learners' academic achievement. Bandura (1991) highlights the role of peers and family environment on the individuals' self-efficacy development. In other words, supposing that the individual, who has parental support such as appraisals for the accomplishments and curiosity supportive attitudes during the developmental stages, is likely to have a better sense of self-efficacy. Moreover, the peers who are experienced about certain tasks in the school environment become role models for the individuals about the development of self-efficacy. Conversely, Pajares and Schunk (2001) asserted that the self-efficacy of the learners, who consider themselves not as competent as their peers, is likely to get lower in classrooms where the students or the teachers use social comparison. Furthermore, if the individual has a disrupted relationship with his/her peers, this may unfavorably affect the development of the self-efficacy of the individual.

2.6.1. Writing Self-Efficacy

Zimmerman and Bandura (1994) stated that writing involves a process in which the individual is to perform alone, use creative thinking strategies, sustain during long periods and revise the final outcome until it reaches the desired standard of quality. For writing self-efficacy, McCarthy et al. (1985) writes that it is learners' own judgments of their abilities to write. Writing self-efficacy was defined by Sun and Wang (2020) as "one's own judgments about how well they can accomplish a writing task" (p. 2). It is related to one's perceptions of his/her ability to compose writing (Hidi et al., 2002). Therefore, learners' own perceptions about their writing competence influence their experiences, successes, failures and outcomes of their writing. Writing self-efficacy does not necessarily improve the writing competence of the learners itself (Pajares & Valiante, 1997); however, it is likely to help learners to create considerable interest in writing, to sustain more effort and to have persistence when confronted with difficulties. That is, this belief will help the learner have enough self-confidence for his/her abilities to compose essays and enhance learners' commitment to learning writing. Writing self-efficacy is considered as an indicator of learners' motivation for writing by scholars (Zimmerman & Risemberg, 1997). In their study, Pajares and Valiante (1999) analyzed the variables such as gender, grade level, previous achievement and self-efficacy which may affect the learners' writing motivation and found that self-

efficacy was the only attribute for competence in writing. Pajares et al. (2007) puts forth that learners' self-efficacy judgments, due to affecting their choices, the effort they spend, and the anxiety they have during the writing process, may pose a threat to their writing motivation. It indicates that writing self-efficacy and writing motivation may have a relation in predicting learners' academic writing achievement. Moreover, Pajares et al. (2007) warn educators to be cautious for low writing self-efficacy because as Bandura (1986) concluded beliefs caused by low writing efficacy might be excessively resistant to alter. Thus, these beliefs decreasing learners' writing motivation and self-efficacy will affect their writing achievement in the long term. Chen and Zhang (2019) concluded that students with strong self-efficacy beliefs are more likely to respond to continuously evolving writing task requirements, use efficient methods to achieve goals in writing, and yield better results in writing. As a result, writing self-efficacy may contribute to the prediction of writing achievement (Pajares, 2003; Pajares & Johnson, 1994). McCarthy et al. (1985) found that writing self-efficacy of the learners was related to their essay scores. Pajares and Johnson (1994) explored learners' writing self-efficacy beliefs and found a high correlation between the writing self-efficacy of the learners and their writing performances. Hence, all these studies indicate that self-efficacy studies in academic writing require due attention.

2.7. Automated Writing Evaluation

2.7.1. The History of Automated Writing Evaluation

AWE systems could be described as computer-based technologies in which the coded systems evaluate the written texts (Shermis & Burstein, 2003). These systems grade learners' written work thanks to utilizing artificial intelligence technologies. Moreover, with improvements in technology, those systems provide feedback on language errors of the learners. The first successful AWE system, *Project Essay Grade (PEG)*, was invented by Ellis Page and his colleagues in 1973 (Hegelheimer et al., 2016; Shermis et al., 2001). Page (2003) noted that *Project Essay Grade* initially used simple analysis and basic linguistic aspects of a composition to grade the writing quality of the papers. After *Project Essay Grade*, a second AWE system, *The Writer's Workbench*, was developed (MacDonald et al., 1982). Rather than a scoring machine, *The Writer's Workbench* focused more on providing feedback to writers. Even though its technology for providing feedback was limited to giving feedback in areas such as misspelled and misused words, that particular software caught the

attention in the field in that AWE systems, besides their scoring ability, can also be used as feedback provision (Warschauer & Ware, 2006). During that period, because the developments of technology were not that much of it is today, the practical application of the AWE system in educational settings was difficult. However, thanks to the advancements in technology that brought microcomputers and the Internet in use in the 1990s, the implementation and the interest of AWE systems have increased (Shermis et al., 2001). Liu and Kunnan (2016) noted that though being initially designed for native speakers of English, the AWE systems were started to be used and marketed in ESL and EFL settings.

A core aspect of the AWE systems is a scoring engine which produces automated scores depending on technologies like “artificial intelligence, natural language processing, and latent semantic analysis” (Stevenson & Phakiti, 2014, p.52). Dikli (2010) noted that AWE systems depend on three methods. First, artificial intelligence addresses creating intelligent machines, which are able to imitate human beings. Second, natural language processing is used to sum up texts and translate them between languages. Third, latent semantic analysis analyzes words used in a passage or essay focusing on semantic meanings.

Chen and Cheng (2008) stated AWE systems were originally developed to reduce the heavy burden of grading a lot of learners’ essays and to assist the grading of the papers. Shermis et al. (2010) stated several research studies were conducted to reveal the correlation of human ratings versus computer scores. Moreover, since AWE systems use more than two raters, the correlation between human raters and the computer scores was found to be as high as among human raters, and sometimes higher (Elliot, 2003). Similarly, Enright and Quinlan (2010) and Shermis et al. (2003) found profoundly high correlations between human raters and the scores of AWE. About the students’ perceptions of AWE scores, students reported that AWE scores are questionable as they “favor lengthiness, overemphasize the use of transition words, ignore coherence and content development, and discourage unconventional ways of essay writing” (Chen & Cheng, 2008, p.104). On the other hand, Anson (2006) suggests that AWE system is not as capable as humans, so their capability to score essays cannot be compared with human scoring. Another opposition against AWE scoring system is that instead of improving their writing skills, learners may tend to write to meet the expectations of AWE systems with the purpose of getting higher points (Patterson, 2005). Despite this, AWE systems may still motivate learners thanks to providing instant scores although learners are aware of the fact that the scores do not precisely reflect their writing quality (Grimes & Warschauer, 2010). Likewise, another study by Li et al. (2014) found similar

results in that holistic scores provided by AWE system might have some potential to motivate the learners.

Burstein (2003) suggested that while previously designed for assistance for standardized tests, AWE systems are now used for providing writing feedback for learners. AWE companies have started to broaden the systems from just essay scoring to providing detailed feedback and supplementary writing sources (Dikli & Bleyle, 2014; Link et al., 2014). Thus, this improvement demonstrates that AWE systems have the potential for supporting learners' writing development; also, they are efficacious and reliable for enhancing writing instruction by detecting 90% percent of learners' errors (Harvey-Scholes, 2018). In addition, Chen and Cheng (2008) asserted that AWE software developers have started to improve the feedback assistance features of the systems, such as grammar, punctuation, spelling, which in turn makes the systems writing aid tools. Besides, AWE software systems show differences in accord with the feedback they provide for writers. While some give feedback priority on content (e.g., *Write to Learn and Summary Street*), others provide feedback on other writing issues such as content, organization, and the use of language (e.g., *Criterion, MY Access!*).

2.7.2. AWE Feedback

Foltz et al. (2014) noted that AWE feedback differs from teacher and peer feedback in that learners have the option to receive the feedback whenever they want; that is, learners could reach feedback at the moment they write their essay, or when they complete their essay. Dikli (2010) stated that the fundamental purposes of AWE systems are to support teachers during teaching writing and to provide automatic feedback for language learners within seconds. In accordance with their feedback speed, AWE systems outperform instructors profoundly (Dikli & Bleyle, 2014). However, Chukharev-Hudilainen and Saricaoglu (2014) stated that AWE systems are likely to be helpful for providing grammatical feedback, namely on lower level concerns of writing and mechanics of writing (Ranalli et al., 2017) since the AWE systems are designed to be accurate, and providing content related feedback is challenging for the AWE systems. Therefore, the AWE systems are useful tools to reduce the feedback burden of teachers making it possible for the teachers to focus on more important parts of writing such as content and organization than grammatical errors, and they enable students to revise and self-edit their own work, which is helpful for their writing achievement (Ranalli, 2018).

Liao (2016) summarizes the features of AWE feedback by stating that not only do they assist writing instructors to relieve their feedback burden decreasing the effort spent on repetitive surface-level errors and enabling them to focus on content and organization, but they also improve learner responsibility and lead to autonomy. AWE systems are considered to facilitate learners to improve their autonomy in language learning by scholars (Harvey-Scholes, 2018; Wang et al., 2012). Chen and Cheng (2008) relate the improvements in learner autonomy to the use of AWE systems in process-based writing approach which is relatively to be advantageous as they give a chance to learners to revise their writings. Furthermore, Cotos (2011) emphasized the potential of AWE systems to assist process-based writing approach, which focuses on multiple drafting stages as the learners will write multiple drafts based on feedback given by AWE.

2.7.3. Strengths of AWE

AWE systems provide great advantages for learners. Link et al. (2014) stated that great developments in automated writing evaluation systems have started to exert influence on L2 writing, bringing immediate feedback on learners' writings. Moreover, Wang et al. (2012) noted that three advantages of AWE systems are that learners will have more opportunities thanks to immediate feedback, AWE likely fosters learners' writing motivation and self-efficacy (Chen & Cheng, 2008), and feedback provided by AWE is more consistent compared to human feedback. As an efficacious system, AWE is capable of providing prompt and convenient feedback for EFL learners that can foster learners' writing revisions and self-edits and consequently their writing achievement (Liao, 2016) and support learners to create error-free sentences (Li, 2007).

Harvey-Scholes (2018) concluded that self-correction in writing is desirable, for learners will avoid doing same errors again in their future writings, and the delay between teacher feedback and learners' correction will be minimized because self-edit can be implemented immediately. That is, AWE systems are of great help in promoting self-editing processes of learners. Lai (2010) stated that even though the AWE feedback is not perfect all the time, it has the potential to motivate the learners. Similarly, Wilson and Czik (2016) asserted that feedback may influence the writing motivation of learners distinctively depending on their primary self-efficacy beliefs. In a similar vein, Li et al. (2017) asserted that learners' perceptions towards using AWE system are positive, the short- and long-term effects of AWE are promising, and learners mostly count on AWE system as a source for grammar

error correction. Another advantage of AWE use for learners which deserves due attention is that learners can improve their word usage thanks to the thesaurus function embedded in the systems (Wang et al., 2012)

As for the advantages of implementing AWE in writing instruction for teachers, teachers' perspectives of AWE systems indicate that the most appreciated advantage of AWE feedback is that they liberate teachers from grading a great number of learners' essays within a limited time and therefore give them more time for teaching writing (Li et al., 2015) by providing an untiring individualized generated feedback with commentary on grammar, punctuation, spelling, and word usage (Kern and Warschauer, 2000). Similarly, Chen and Cheng (2008) asserted that thanks to AWE systems, which provide priori feedback suggestions on mechanics of learners' essays, teachers could devote their effort to provide feedback on content and meaning.

2.7.4. Weaknesses of AWE

As Lai (2010) stated, AWE systems are not always perfect in spite of their benefits; therefore, the drawbacks of AWE systems should be noticed prior to utilization of these systems. Ranalli (2018) criticizes AWE systems due to their feedback being dependent on computer capabilities rather than pedagogical considerations and because they provide one type of feedback for all neglecting individual differences of the learners. These computer capabilities were criticized by Ferris and Hedgcock (2005) saying that there is a "lack of meaning negotiation in real-world context" (p. 109) when learners spend their time with AWE. Wang et al. (2012) noted a shortcoming of AWE system is that learners may fool the system by using the structures and words the system favors, which results in decreasing the learners' creativity in writing, and social learning may be negatively affected as it eliminates the human factor. Thus, it prevents writing from being authentic and encourages learners to be equipped with writing strategies to meet the requirements of AWE system. One of the leading criticism towards AWE use was discussed in The Conference on College Composition and Communication (CCCC) in the U.S in 2006. It was touched upon at the conference that "while they [AWE programs] may promise consistency, they distort the very nature of writing as a complex and context-rich interaction between people." Moreover, another drawback of AWE systems is that they lead students to focus merely on surface structures of writing by simplifying what is intended to be transferred via content (CCCC, 2006; Chen & Cheng, 2008). Correspondingly, Cheville (2004) concluded that the

deficiency of AWE systems in providing context-related meaning makes these systems useful only for grammatical corrections. Even though the grammatical feedback provided by AWE systems is reliable, Dikli (2010) warns the learners about inaccurate feedback provided by the systems and states that learners must question the accuracy of feedback before applying the feedback in the revised version of their essays.

2.7.5. The Role of Teachers and Learners in AWE Use

When the advantages and the disadvantages of AWE systems are taken into consideration, some researchers offer invaluable suggestions for the implementation of AWE in writing instruction in educational settings. For instance, Li et al. (2015) point out the role of the instructor in the implementation of AWE stating that AWE systems can provide instant and consistent feedback, yet it is the instructor who guides learners on how to use the feedback provided by the system appropriately. Therefore, instructors' approach for the implementation of AWE systems in writing classes will be of great impact on the effectiveness of these systems. Liu and Kunnan (2016) also exert focus on teachers' role by stating that the error correction capability of AWE systems, as for errors like word choice, article use, and correct preposition use, is a controversial issue; however, they stated that AWE systems can be still used as long as the teachers and students are aware of the strengths and weaknesses of the system. That is, teachers must warn the students about the deficiencies of AWE system used, and learners are to critically analyze the provided feedback and implement it into their compositions accordingly. It is not only the teachers who should be aware of the deficiencies of AWE feedback, but learners should also be conscious of the strengths and the weaknesses of these systems to benefit effectively from them. Upon evaluating the aspects of AWE, it is writers' choice whether to implement it for their subsequent drafts or not (Stevenson & Phakiti, 2014). Supportively, Lavolette et al. (2015) emphasized that even though AWE systems may provide incorrect error feedback from time to time, learners with high metalinguistic knowledge may spot the problems and still use the system effectually, and they noted that AWE systems encourage learners to edit their compositions independently. In parallel, learners with high proficiency of language tend to have a critical approach towards AWE feedback, to devote more time to comprehend it and to be selective for implementation of it (Koltovskaia, 2020).

2.7.6. The Implementation of AWE Feedback

The strengths as well as the weaknesses of AWE systems are discussed above. Thus, only AWE feedback may not be considered as the main source of feedback solely. Moreover, teachers are not likely to be able to capable of handling the heavy burden of feedback. Although the idea that computers are able to produce meaningful written feedback has given rise to tremendous skepticism, undoubtedly fed by the dystopian specter of a future where robots take the place of humans (Stevenson & Phakiti, 2014), and AWE systems will take the role of teachers as the main source of feedback (Condon, 2006), the suggestions in the literature are on the use of AWE feedback in conjunction with teacher feedback so as to enhance the development of writing skills of the learners. Wang et al. (2012) suggested that contrary to traditional feedback provided by teachers or peers, AWE can be implemented independently and serve an instant feedback source. Nonetheless, AWE cannot be totally considered as a replacement of instructors' feedback, but it can be used as a supplementary software with teacher feedback (Bai & Hu, 2017; Foltz, 2014; Shermis & Burstein, 2003). The study of Chen and Cheng (2008) revealed that human feedback is vital even when the learners use AWE systems, and AWE systems are more appropriate for pre-intermediate and intermediate level learners of English who need more form-focused assistance. Moreover, together with the improvement in learners' understanding of writing rules and mechanics, it was also found that joint implementation of teacher and computer feedback might additionally foster learners' autonomy (Chen & Cheng, 2008), and writing motivation (Dikli & Bleyle, 2014).

2.8. Related Studies on AWE Feedback

Chen and Cheng (2008) conducted a study to find out how different implementations of AWE affect learners' perceptions of AWE systems. 68 third year upper-intermediate English department students at a university in Taiwan participated in the study. The data included learners' essays, questionnaire and focused group interviews. Three different classes with three different writing instructors implemented *MY Access!* AWE system in writing classes. Each instructor's approach of implementation differed from each other. The findings of the study indicated that learners found AWE feedback helpful in areas such as formal language, passive voice use, grammar, spelling, and punctuation. However, learners stated AWE feedback was not always helpful since the explanations of AWE for errors were not informative enough, and they did not need the feedback of AWE on grammatical features a

lot because their English proficiency was enough to spot these type of errors. The researchers concluded that human feedback is indispensable to amend the deficiencies of AWE systems, yet AWE can still be used as a supplementary tool in writing classes.

Ranalli (2008) carried out a study to investigate to what extent learners are able to utilize AWE feedback in their written work. The study was conducted at a research university in the USA with lower- and upper-level university students. The number of lower level students were 36 (12 females, 22 males), and the number of upper ones were 46 (18 females, 28 males). *Criterion* software was employed in the study for AWE feedback. For the data collection, an error correction task was developed by the researcher. Learners were asked to use to AWE feedback and correct their errors. Also, the effectiveness of explicit versus implicit feedback were analyzed. The results indicated that learners preferred explicit feedback provided by AWE over implicit feedback. About the effects of proficiency level of learners on correcting their errors based on feedback, no significant difference was found. Thus, both lower-level and upper-level students made use of AWE feedback and could correct their errors thanks to feedback.

Dikli (2010) conducted a research study to discover the nature of feedback provided by AWE or by teacher and to compare these two feedback types. My Access!, which is one of the successful AWE system, was used in the study. The number of participants in the study were 12 as 6 males and 6 females. Participants, who were studying at English center a university in Florida, were divided into two groups. One of the group had AWE feedback provided by MY Access!, and the other had teacher feedback. Data were collected via learners' essays written during the study, field notes, and interviews. The results showed that feedback provided by AWE system was more than necessary, long, and not always usable. On the other hand, teacher feedback was found to be shorter, consistent and practical.

El-Ebyary and Windeatt (2010) carried out a research study to determine the effects of AWE feedback on learners' perceptions of feedback, their writing process and product. The study took place at a university in Egypt with 27 trainee EFL teachers. *Criterion* was used in the study as an AWE software for computerized feedback. The data were collected via post-treatment questionnaire and interviews done with the participants. Participants were given four topics to write about, they were asked to utilize AWE system to have feedback and make necessary changes based on feedback provided by the system. The results indicated that AWE system was efficacious in encouraging learners to write multiple drafts and revise their papers. Moreover, AWE feedback was effective since it helped learners reduce the

number of grammatical errors across multiple drafts. Another finding of the study declared that learners had positive attitudes towards using AWE feedback, and they believed AWE feedback improved the quality of their written work.

Fang (2010) conducted a research study on AWE use to reveal learners' attitudes towards using AWE, the effects of AWE feedback on learners' written work, and learners' perceptions of AWE. 45 junior students studying at Applied Foreign Languages Department at university in Taiwan took place in the study. The data were collected with a questionnaire completed by all the participants and with interviews conducted with nine participants. One of the most preferred AWE system, which is *MyAccess* developed by Vantage Learning, was utilized in the study for computerized feedback. The analysis of the questionnaire and interview indicated that participants of the study hold positive and favorable attitudes toward using *MyAccess* during their writing process. Moreover, the participants stated that the system provided an opportunity for revision of the essays. Another finding of the study showed that learners' writing skill developed after using *MyAccess*. The participants also stated that AWE fostered their writing motivation and that they would benefit from AWE feedback for their future writing classes.

Lai (2010) conducted a research study to compare peer correction with AWE feedback. The study took place in a college in Taiwan with 22 (10 males, 12 females) EFL learners. The data were gathered via questionnaire and interview, and *My Access* software was used. Learners had 18 weeks of instruction during which they had feedback from their peers and AWE system. Each feedback type was administered for 9 weeks. The results of the study revealed that learners preferred peer feedback over AWE feedback. The researcher commented that this may show that learners considered their peers as real audience, and the reason for which the AWE system was not preferred may be due to the computer anxiety and some technological problems during the study.

Wang et al. (2012) conducted a mixed type research study to find out the effects of utilizing AWE system on learners' writing accuracy and to reveal learners' perceptions of AWE use. 57 (21 males, 36 females) students studying at Applied English department at a university in Taiwan participated in the study. Participants were randomly assigned to experimental and control groups before the study, and they were asked to write a composition as pre-test, which was also used as post-test after the intervention, on a given topic which was related to Taiwan culture. The groups were found to be equivalent in their writing ability. Experimental group used an AWE system, *CorrectEnglish*, and had feedback during the intervention. On

the other hand, instructor was the main source of feedback for the control group. Furthermore, the learners in experimental group filled the questionnaire related to AWE use, and the researcher interviewed some of the participants in experimental group after the intervention. The result of the study revealed that learners in the experimental group made fewer grammatical errors on post-tests and outperformed the learners in the control group. The AWE group developed their grammar, spelling and word usage to a great extent. Moreover, the analysis of questionnaire and interviews indicated that thanks to AWE system which provides instant feedback, learners had positive attitudes towards writing and were found to be motivated to write.

Dikli and Bleyle (2014) conducted a research study to compare the feedback provided by *Criterion* and instructor. The participants of the study were 14 (9 females, 5 males) EAP (English for Academic Purposes) students studying at an open access institution in the USA. The data were obtained via learners' essays written on *Criterion* and opinion survey employed at the end of the study to demonstrate the perceptions of the learners about *Criterion* and the instructor feedback. The researchers matched the error codes of instructor with *Criterion*'s prior to the study to make a reliable comparison between two sources of feedback. The results indicated that the instructor's feedback was better than that of *Criterion*, for the instructor could identify correctly most of the errors while *Criterion* missed and inaccurately identified most of the errors. That is, the instructor, with regard to quality of feedback, outperformed AWE system. On the other hand, the survey results declared that learners' perceptions about the use of AWE system were positive, and they were found to be motivated to use AWE system to have feedback and revise their writing.

Lavolatte et al. (2015) conducted a research study to find out the accuracy of feedback provided by *Criterion*, an AWE system. 24 ESL students from five different writing classes at a university in the USA participated in the study. The data were gathered via four essays learners wrote using *Criterion*. Prior to the study, learners were trained how to use the system and were informed about the wrong-error corrections provided by the systems with the expectation that the learners would evaluate the feedback before directly using them on their second drafts. The result of the study pointed out that 75% of the error correction codes provided by *Criterion* were found to be correct, while the system could not spot 46% of the errors. The researchers of the study, however, noted that learners with high linguistic knowledge could effectively use the systems in spite of its incapability of detecting some grammatical errors.

Li et al. (2015) conducted a study to find out learners' and instructors' perceptions and to see the effects of AWE use on learners' revision and grammatical accuracy. 70 ESL students studying at a major university in the USA and four instructors participated in the study. *Criterion*, one of the leading AWE systems, was used in the study. Quantitative data were collected via learners' essays written and revised on *Criterion*. Qualitative data were gathered through individual interviews made with the instructors and 27 participants, who volunteered for the interview. The study lasted for 15 weeks. One, out of four classes, included lower level students, and the other three classes were for higher-level students. Lower level students were required to write three paragraphs while upper ones were asked to write four essays. The result of interviews with students showed that the perceptions of most of the participants were positive for AWE use for feedback. Similarly, the instructors' comments on AWE use were also positive suggesting that they were eager to use AWE systems in their future writing instructions. Moreover, learners stated they were motivated to write thanks to AWE feedback. Quantitative data results demonstrated that the number of errors made by students considerably declined from the first paper to the last, which shows the effectiveness of AWE system on grammatical development of learners.

In their study, Cavaleri and Dianati (2016) investigated learners' perceptions of *Grammarly* with regard to its usability, its usefulness and the effect of *Grammarly* on learners' written work. At the beginning of the term, learners studying at a university in Australia were provided *Grammarly* discounted premium account offer, and at the end of the term, it was declared that only 37 students purchased the premium version and used *Grammarly* for their written work. A questionnaire was sent to these 37 students, and 18 of them completed the questionnaire, which asked learners' perceptions of *Grammarly* and perceived effects of the software on learners' writing development. The analysis of the questionnaire demonstrated that learners considered *Grammarly* useful to improve their writing and an easy software to use. Learners agreed that explanations provided by *Grammarly* helped them to learn the grammar rules.

Liao (2016) carried out a research study to explore to what extent the use of AWE promotes learners' grammatical accuracy and to reveal learners' perceptions of AWE use. 63 (15 males, 48 females) sophomore learners of English studying at three different universities in Taiwan took part in the study. *Criterion*, an AWE software, was used in the study. The data were collected through learners' essays, a 15-item questionnaire to find out the efficiency of AWE system and semi-structured interviews for a better understanding of learners' perceptions.

Participants were asked to write four comparison essays with regard to given prompts on the system and make the required corrections based on AWE feedback. The results of the study showed that learners made progress grammatically after using the system when the first and revised drafts were compared. Another finding of the study demonstrated that learners' perceptions of AWE use were positive in that they reported AWE enhanced their writing proficiency. However, nine lower level participants criticized the system due to the systems' explanations being hard to comprehend.

Liu and Kunnan (2016) conducted a research study in China to see the accuracy of AWE error feedback on learners' compositions. 163 undergraduate EFL learners (9 males, 154) females from a university in Sichuan, China participated in the study. An AWE software, *WriteToLearn*, was employed in the study for learners to have error correction feedback. The data were gathered through compositions learners wrote on the AWE system. Learners were asked to write two essays based on the given prompts on the system. 326 essays were collected, and 60 were randomly chosen for data analysis. To see the effectiveness of AWE system with regard to error correction, four experienced EFL instructors also analyzed the papers. The results showed that *WriteToLearn* failed to detect some errors such as word choice, article use, and prepositions. However, the researchers suggested that AWE systems can be still used as long as the teachers and students are aware of the strengths and weaknesses of the system.

In their study, Wilson and Czik (2016) investigated teacher feedback, learners' writing motivation, and writing improvement of learners implementing AWE feedback. 151 eight-grade students participated in the study in the U.S. *PEG*, one of the leading AWE system, was utilized in the study. Four classes were divided into teacher-feedback-only (two classes) and teacher + *PEG* feedback (two classes) groups. Thus, the design of the study is quasi-experimental, which is similar to the design of this very study. During the study, two of the classes were provided only teacher feedback, and the other two had both *PEG* and teacher feedback. A motivation questionnaire was implemented prior to and after the intervention to analyze the change in learners' motivation beliefs. Also, teachers' perceptions for the feedback conditions in the experimental and control groups were gathered via eight-item survey. The result of the study indicated that the amount of feedback provided by teachers and AWE were equal. *PEG* + teacher feedback condition were found to be more effective. For learners' motivation, the analysis of the questionnaire presented that learners' writing motivation in *PEG* + teacher feedback condition increased. However, no significant

difference was found between the experimental and the control groups with regard to writing quality. The researchers stated that this may be due to the short duration of the intervention and that teachers were not trained how to implement teacher feedback with AWE feedback.

Li et al. (2017) carried out a research study to unveil the short and long term effects of AWE systems on learners' grammatical accuracy development and reveal learners' perceptions about AWE system. 135 (63 high-intermediate and 72 low-advanced) university students in the USA participated in the study. *Criterion* was implemented in the study as an AWE system. The data were collected through learners' essays written on *Criterion* (three essays for each proficiency level), and learners were interviewed to find out their perceptions of AWE system at the beginning and at the end of the study. A total 53 interviews were held. Learners were required to submit their first drafts in *Criterion*, have feedback and make the necessary corrections, revise their papers with regard to peer comments and upload their final drafts to *Criterion*. The result of the research indicated that the number of nine error types of the learners profoundly decreased in short term; on the other hand, the number of run-on errors declined in long term. About the learners' perception of AWE, the interview analysis revealed that 90% percent of learners were contended for the use of AWE. 71% of learners were mostly satisfied with the grammar feedback feature of *Criterion*.

Ghufron and Rosyida (2018) carried out a quasi-experimental research study to compare *Grammarly* feedback with the instructor's indirect feedback. 40 students studying at English Education Study Program in Indonesia participated in the study. The participants were grouped into experiment and control conditions, and each group involved 20 participants. The groups were found to be equivalent with their writing test scores done prior to the study. Students in the experimental group utilized *Grammarly* software to have feedback during the intervention, whereas the ones in the control group had teacher-indirect feedback. A writing test was implemented after the intervention to compare the groups with respect to grammatical development in writing. The findings of the study indicated that students in experimental group performed better in the writing test. *Grammarly* feedback supported learners in the experimental group to decrease the number of grammatical errors. Another finding of the study also revealed that learners' writing self-efficacy improved thanks to *Grammarly* as it encouraged learners to evaluate themselves and to learn independently. Nonetheless, the software was found to be inefficacious in developing learners' content and organization.

Nova (2018) carried out a narrative inquiry research to explore the participants' personal experiences with *Grammarly*. Three post graduate EFL learners with different length of experience of using *Grammarly* in Indonesia participated in the study. The data were collected through learners' *Grammarly* accounts and interviews. The result of the study indicated strengths and weaknesses of *Grammarly* with regard to learners' experiences. As for the strengths, the participants stated that feedback provided by *Grammarly* useful for their grammatical knowledge development. They said that they learned from their errors and avoided doing the same errors in their subsequent written work. Another positive aspect of *Grammarly* was related to its ease of access. The participants asserted that the procedures to sign up and utilize the software were easy. Free service and high speed of feedback were two other advantages of using *Grammarly* feedback. As in this very study, the participants used free version of AWE software and their perceptions were favorable. As for the weaknesses, the main problem was that *Grammarly* sometimes provided misleading feedback changing the intended meaning of the writers. Another weakness was *Grammarly*'s inability to provide content related feedback. These weaknesses suggest that *Grammarly* software will be more beneficial when used in conjunction with the instructors' feedback.

O'Neill and Russell (2019) conducted a study to reveal learners perceptions of using *Grammarly* feedback compared to instructor's feedback. The researchers adapted experimental research design with control group to better investigate the effects of AWE use. 96 students (54 in experimental group and 42 in control group) studying at a university in Australia participated in the study. Participants in the experimental group had feedback both from their instructors and *Grammarly*, whereas participants in the control group had only instructor's feedback. A student survey including both quantitative and qualitative responses of participants was used to collect the data. The results of the study indicated that learners' perceptions were positive in favor of utilizing *Grammarly* in that they stated enough time was spent for feedback. On the other hand, participants in the control group criticized teacher feedback due to fact that not sufficient time was devoted for providing grammatical feedback. About the quality of feedback, participants in the experimental group noted they had useful feedback, while participants in the control group were not satisfied with instructor's feedback stating that their instructor's did not pay enough attention for their grammatical errors. Moreover, another finding of the study indicates that learners were contended with AWE feedback since it was detailed and prompt. The researchers concluded

that AWE feedback might have the potential to foster learners' writing and motivation when used in conjunction with instructor's feedback.

Another research study on AWE use was conducted by Erdal-Bulut (2019) in Turkey. The researcher investigated the differences between the effects of AWE use on learners writing achievement. Another purpose of the study was to determine whether AWE use affects learners' writing motivation. The study was conducted at a state university in Turkey with 60 preparatory school learners. The researcher employed a quasi-experimental study, which is similar to the design of this current study. The participants were divided into experimental and control groups, and the ones in the experimental group used *PEG Writing Scholar*, an AWE software; on the other hand, the participants in the control group had pen-paper writing instruction. The data were collected via a writing motivation questionnaire field notes and writing tests. The results demonstrated that AWE use had positive effects on learners' writing achievement. Furthermore, the analysis of motivation questionnaire showed that AWE use fostered learners' intrinsic motivation and self-efficacy beliefs towards writing.

In a recent study in Turkey, Gençer (2019) investigated the effects of automated writing evaluation on learners' writing achievement. Also, another purpose of the study was to unveil the perceptions of AWE use of learners. The study was conducted at a private university in Turkey with 15 preparatory school learners whose department was English Language Teaching. An AWE software, *CyWrite*, was utilized in the study to provide learners automated feedback. As for the data collection, the researcher gathered the data via learners' paragraphs and essays written during the study, recordings of students' engagement with AWE system and surveys carried out before and after the study. The result of study showed that *CyWrite* was not efficient in reducing the number of grammatical errors in the long term, but it was found to be effective in the short term. The researcher concluded that *CyWrite* feedback improved learners' grammatical and mechanical accuracy. Moreover, the analysis of surveys indicated that learners' perceptions of *CyWrite* were positive, and they considered the system as a useful tool to develop their writing skills.

Koltovskaia (2020) investigated learners' engagement with AWE feedback. 2 students who enrolled in a writing course at a large university in the U.S. participated in the study. The proficiency level of students was declared to be advanced and low-intermediate after their writings were scored with writing rubric prior to the study. As in this very study, the free version of *Grammarly*, an AWE system, was utilized. Learners' screens were recorded as they were using AWE software to better analyze their engagement with software. Also,

learners were interviewed after the study. The results revealed that learners held positive attitudes towards the feedback of *Grammarly*. The advanced level student used 57% of feedback provided by the system rejecting some of the accurate corrections. Moreover, the same student had a critical approach toward AWE feedback in that he sometimes googled the phrases that the system spotted as errors. The lower level student, on the other hand, extremely trusted on AWE feedback without questioning the accuracy of it. Nonetheless, she did not apply all the corrections to her revised version denying the error-warnings of the software. The researcher concludes that higher level students tend to criticize and question the accuracy of AWE feedback whereas the lower level students consider the feedback faultless.

Zhang (2020) carried out a research study to deeply explore how learners perceive and use feedback provided by AWE systems. Instead of studying with large groups, the researcher preferred to study with three participants to better analyze and get rich data. 3 students studying at a university in China participated in the study. Due to fact that different proficiency levels affect learners' engagement with AWE feedback, students with different proficiency level were selected. *Pigai*, an AWE system, was used in the study. The data were gathered via learners' essays written on the system and three individual interviews. The findings revealed that lower-level learners' perceptions of AWE were positive, and they declared the feedback of AWE as effective and helpful; on the other hand, the other learner found AWE feedback vague. The researcher concluded that since lower-level learners focus on surface level features of writing, they have positive attitudes towards AWE feedback. However, as higher-level learners tend to give importance on content and organization of writing, they may have a tendency to consider AWE feedback insufficient.

CHAPTER III

METHODOLOGY

3.1. Research Design

“Research simply means trying to find answers to questions, an activity every one of us does all the time to learn more about the world around us” (Dörnyei, 2007, p.5). Brown (2012) argued two fundamental ways to find answers to questions, which are either analyzing the other people’s comments on a special issue or doing one’s own research based on scientific investigation. This study employs mixed method research design. Mixed method research design was defined by Creswell (2012) as “a procedure for collecting, analyzing, and “mixing” both quantitative and qualitative methods in a single study or a series of studies to understand a research problem” (p. 535). Mixed method research design is used when the researcher has both quantitative and qualitative data to analyze the research problem from different perspectives and to have a deeper understanding of the results. This research adopts a quasi-experimental research design. Cook and Campbell (1979) propose for experimental designs that “all experiments involve at least a treatment, an outcome measure, units of assignment, and some comparison from which change can be inferred and hopefully attributed to the treatment” (p. 5). Treatment is something a researcher does, which is mostly a new teaching technique or material, and the units of assignment include people in the research study. In various real-life settings, the researcher may not be able to follow the randomization procedures on who is to be exposed to the treatment and when (Campbell & Stanley, 1963), possibly due to some institution policies. Quasi-experiments fulfill some of the requirements of a true experiment, which are the manipulation of the independent variable, and comparison of the groups (if multiple groups are employed); however, they lack the elements of randomization and comparison of the groups (if a single group is employed). The design of this study is a non-equivalent control group design since it is not

possible for the researcher to assign participants into experimental and control groups randomly. Wilson and Czik (2016) implied that although using intact classes may lead to a weaker design compared to employing random assignment, this approach has the capacity to remove the threats of demoralization between learners, as all the learners within the same classroom have the same intervention. Moreover, it is accepted that a control group is central to studies addressing to evaluate the effectiveness of corrective feedback (Bitchener, 2008). Furthermore, studies taking into consideration second language acquisition must be implemented utilizing a control and a treatment group under controlled experimental conditions (Ferris, 2010). In this study, there are three groups including two experimental groups, one group for the implementation of *Grammarly* software, one group for the implementation of *ProWritingAid* software, and one group as the control group. The treatment conditions were randomly assigned to the groups. Qualitative data were gathered via learners' essays, written opinion surveys, and focus group semi-structured interviews.

3.2. Participants and Setting

91 students studying at Sivas Cumhuriyet University School of Foreign Languages in 2020 participated in the study. All of the participants speak English as a foreign language, and their native language is Turkish. Because the school regulations did not allow the researcher to randomly assign participants into the experimental and control groups, intact classes were used to implement the intervention. The researcher asked the other writing instructor to implement the intervention in his classes; however, he declined and did not want to conduct the study in his classes. For that reason, the three classes the researcher teaches writing course were chosen for the study. Experimental conditions were randomly assigned to the groups. Namely, Class C, which includes 31 students (24 females and 7 males) was assigned as one of the experimental groups and utilized *ProWritingAid* as for AWE feedback. Class D, which includes 28 students (20 females and 8 males) was assigned as the second experimental group and used *Grammarly* as for AWE feedback. Class E, which includes 32 students (23 females and 9 males), was assigned as the control group of the study. Table 1 shows the number of participants in experimental and control groups.

Table 1

The Number of Participants in Experimental and Control Groups

	Male	Female	Total
Experimental Group 1	7	24	31
Experimental Group 2	8	20	28
Control Group	9	23	32

At the beginning of the year, students are required to take English proficiency exam, and the ones whose scores are above 70 start their education in their departments. Proficiency exam covers four main skills (reading, listening, writing, speaking) and three sub-skills (grammar, vocabulary, pronunciation). After the proficiency exam, students whose scores are below 70 take one year of education for their preparatory program, and they are randomly assigned to the classrooms. The main department of the students is either English Language Teaching or English Language and Literature. Sivas Cumhuriyet University School of Foreign Languages follow skill-based instruction; namely, students take 8 hours of grammar course, 6 hours of reading course, 6 hours of listening-speaking course, and 6 hours of academic writing course. Learners are to take four mid-terms during the year and one final examination. The success grade is calculated by taking 40% of the midterm score average and 60% of the average score of the final examination. For the academic writing course, learners have to take four mid-terms and one final examination, but their first mid-term grade is given based on their portfolios. Writing portfolio includes learners' writing assignments (six paragraphs and six essays) they write during the year.

In the academic writing course, two books (one for paragraph writing and one for essay writing), and teacher notes are used. The students are first introduced to the basics of writing where they are taught the basic rules of grammar, punctuation, and conjunction use, etc. that they will need for writing. Later, the students are taught how to brainstorm and outline before writing a paragraph, how to write topic sentences, supporting sentences and details, and how to ensure unity and coherence of the paragraph. Next, they are taught different kinds of paragraph types which include descriptive paragraph, example paragraph, process paragraph, opinion paragraph, and narrative paragraph.

For each paragraph type, the book provides sample paragraphs which are analyzed in the classroom. After the related chapter of the book is covered, the students are asked to write a paragraph on a given prompt. For the analysis of students' compositions, each classroom

creates a WhatsApp group, and the students share their paragraphs and essays on that group before the lesson time so that each student has access to their peers' papers. This method is considered to be effective both by the writing instructors and by the students in that the students could read and comment on their peers' papers easily. During the next two hours of the course, learners' paragraphs are read aloud in the classroom using WhatsApp, and learners are provided with teacher and peer feedback for their errors. The purpose of reading aloud the papers is to provide learners with an opportunity to analyze a lot of paragraph and essay examples, and a cooperative classroom atmosphere is tried to be created where learners learn from each other. Learners are given another writing prompt for the following lesson after two hours are spent to give feedback on the first writing task. The same procedure is followed for the second writing task. The prompts given as for the first and the second writing task are generally taken from the book used for the writing instruction. After covering the paragraph type and commenting on the first and the second writing tasks, learners are provided with 5 prompts for their assignments. These prompts are chosen by the writing instructors, and while choosing the prompts, learners' interests are taken into consideration. Learners are given 3-5 days to prepare their assignments. During the next two hours, the teacher provides individualized feedback for each student in the areas such as content, organization, unity, coherence, and grammar conventions. If the teacher could not finish the feedback procedure in two hours, s/he takes the papers to provide feedback later.

Upon finishing the paragraph learning, students are introduced to short essay types. First, they are taught essay structure and organization where they analyze sample essays' introduction, body, and conclusion paragraphs. They learn how to write a hook, thesis statement, body paragraphs, and conclusion paragraphs. Later, they cover several types of essays till the end of the year. Students learn how to write a classification essay, descriptive essay, narrative essay, compare & contrast essay, opinion essay, and cause & effect essay. For the classroom writing instruction, the same procedure used in paragraph writing is followed for essay writing. Learners are assigned to write three essays for each essay type, two of which are to be analyzed in the classroom with the teacher and peers, and one of which is written for their writing portfolios and is provided individualized teacher feedback.

3.3. Data Collection Tools

The data collection tools utilized in this study include students' writings, a questionnaire, a written opinion survey, and interviews.

3.3.1. Students' Writings

Learners' written tasks in the experimental and the control groups were collected to be graded as pre-test to find out their writing achievement prior to the intervention. After the intervention, the learners' tasks were gathered to be used as the post-test to be compared with the pre-test in order to see whether there is an improvement in their writing achievement. The researcher and a colleague who has been teaching writing for seven years analyzed several rubrics, and eventually Pennsylvania Writing Assessment Domain Scoring Guide (Appendix A) was chosen for the study. The rubric is a holistic one, which includes five dimensions: (a) focus weighted 20 points out of 100, (b) content weighted 20 points out of 100, (c) organization weighted 20 points out of 100, (d) style weighted 20 points out of 100, and (e) conventions weighted 20 points out of 100. This rubric was used to evaluate learners' pre-test and post-test. Moreover, learners' essays (six essays per student) written during the intervention were analyzed to describe the types of errors they corrected using AWE feedback.

3.3.2. Questionnaire

A questionnaire is a commonly used and effective tool for gathering survey data, presenting organized, mostly numerical results, and it is also fairly easy to evaluate the results obtained from the instrument (Cohen et al., 2005). Dörnyei (2007) expressed the fact that "many questionnaires do not contain any or many, real questions that end with a question mark" (p. 102). Thus, they are called with different names such as checklists or scales. In this study, one questionnaire was administered for the data collection. The questionnaire used in the study is a Writing Self-efficacy Questionnaire developed by Yavuz (2004). This scale (Appendix B) includes 21 items which measure participants' self-efficacy beliefs concerning writing skill. The options on the scale are as follows: 1 (I cannot do it at all), 2 (I cannot do it well), 3 (I can do it), 4 (I can do it very well). Background questions asking learners' age, class, and gender were added to the questionnaire before the implementation.

3.3.3. Written Opinion Survey

This study employs a written open-ended survey (Appendix C). The purpose of survey studies is to define the characteristics of a population by exploring a sample of that group (Dörnyei, 2007). In a similar vein, Cohen et al. (2005) argued that surveys collect data at a

particular moment in time in order to explain the nature of the present conditions or to define criteria to which present conditions could be measured, or to establish the relationships between specific conditions. Surveys may include closed-ended or open-ended questions. A survey with open-ended questions is advantageous in situations when the researcher does not know the possible answers (Craswell, 2012). Moreover, it offers opportunities for the researcher as the participants freely create an answer, which will support the researcher to find out opinions that were not thought before (Muijs, 2004).

The written survey was carried out with the participants in the experimental groups. While preparing written opinion survey questions, two writing instructors and the advisor of the researcher examined the questions and provided feedback. After necessary corrections were made, 10 open-ended questions were asked to participants. The questions were asked in Turkish language to be sure that learners could express themselves better. Two written opinion surveys were prepared for the participants, but the only difference between them is the name of AWE systems (*Grammarly* or *ProWritingAid*). Learners completed the written survey after the intervention process ended, and the questions in the survey aim at exploring learners' experiences with AWE feedback during the intervention.

The first question focuses on learners' general comments on AWE software they used (*Grammarly* or *ProWritingAid*). The second question is related to learners' judgments of their academic writing achievement before and after the intervention. The third question aims at revealing the changes in learners' writing motivation if any, thanks to AWE feedback use. The fourth question, similarly, asks whether there is a change in learners' writing self-efficacy beliefs before and after the intervention. The fifth question asks learners whether they would use AWE software after the study, and learners were supposed to explain their reasons. The sixth question asks what kind of errors learners corrected using AWE feedback. The seventh question examined when learners benefited from AWE feedback; namely, they were asked whether they used the corrections provided by AWE system directly or critically evaluated feedback before using it in their final drafts. The eighth question asks for the positive features of AWE system; on the other hand, the ninth question tries to explore learners' opinions about the negative features of AWE system. The last and tenth question asks for learners' additional opinions regarding AWE systems.

3.3.4. Interview

Using the interview in research represents a step away from considering people as essentially easy to manipulate and data as something external to human subjects, and towards information created between individuals, mostly by conversations (Kvale, 1996). In addition, Cohen et al. (2005) asserted that interviews allow people to explore their impressions of the world in which they live and to explain how they view things from their own viewpoint. Various types of interviews are used to meet the needs of the research studies. This study adopts semi-structured focus group interviews. Dörnyei (2007) claimed that during the semi-structured interview, the researcher has pre-prepared questions that are helpful to guide interviewees, and it is also open-ended, which allows the interviewees to elaborate on the subject matter. Moreover, Creswell (2012) for focus group interviews implied that implementing focus group interviews is advantageous in that the conversation between interviewees may yield better information as the participants discuss the subject matter cooperatively. Three focus group semi-structured interviews were conducted with 15 participants. Two participants in *ProWritingAid* group declared that they were not in favor of using AWE software for their written work in their future education and did not approve AWE feedback. Thus, one interview was conducted with these two students who have negative attitudes towards AWE use. Other participants in both experimental groups stated they benefitted from AWE feedback and that they would use AWE feedback for their compositions in the future. Therefore, one focus group semi-structured interview was conducted with 7 randomly selected participants from *ProWritingAid* group, and one focus group semi-structured interview was conducted with 6 randomly selected participants from *Grammarly* group. The questions (Appendix C), which were asked to the students, are the same as the ones used for written opinion survey, but the follow-up questions were asked to have a deeper understanding and to clarify the answers given by the interviewees. The interviews were conducted in the researcher's office, and participants' answers were recorded for the analysis.

3.3.5. AWE tools

3.3.5.1. ProWritingAid

ProWritingAid is one of the AWE software systems in the market that provides feedback for the written texts. Users could buy the premium version to utilize all features of the system, but the free version is also available for users with limited features. In the free version, the system provides corrections for grammar, style, spelling, and punctuation issues. The system provides implicit feedback underlining the words which need corrections, and when the writer clicks on the word, the system provides explicit feedback explaining why that word needs correction. Moreover, the system helps the writer improve the style of the text in that it warns the writer about the overuse of the words and suggests adjectives and adverbs. In addition, the system has an embedded thesaurus dictionary, and when the writer clicks on a word, the system offers different words with similar meanings. That is considered to be helpful as the writers could immediately change the words with their synonyms without having to use another dictionary. Along with thesaurus function, the system also has an embedded dictionary for the writers, and the dictionary, besides providing word definitions, offers the writer the collocation of the words, common phrases of the words, examples from books and quotes, and rhymes of the words. Another prominent feature of the system is its summary report, which provides the writer with a lot of information about the text. In the report, the system gives the score separately as an overall score, grammar score, spelling score, and style score. Word count, the number of sentences, paragraphs, and characters (with and without spaces) are also provided for the writer. For vocabulary use of the text, the summary report lists the most unusual words and the most used words (See Appendix D for the screenshots of *ProWritingAid*).

3.3.5.2. Grammarly

Grammarly is one of the leading AWE software systems in the market that provides grammatical feedback for writers since 2009. As *ProWritingAid*, *Grammarly* also offers premium version and free version for its users. With the free version, the system enables writers to correct their grammar, punctuation, and spelling. The text appears on the left side of the page, and the system presents implicit feedback by underlining the problematic words. Direct feedback, on the other hand, appears on the right side of the page. Writers could click

on the suggested correction to apply it to their texts, or they have the option to ignore it. Besides providing correct versions of the error, the system also offers a comprehensive explanation for the relevant grammar rule, and it has an embedded thesaurus dictionary for the synonyms of the words. (See Appendix E for the screenshots of *Grammarly*).

3.4. Data Collection Procedure

First, the researcher took the necessary permission from Sivas Cumhuriyet University Ethics Committee and from the administration of School of Foreign Languages. As for the next step, all participants were informed about the purpose and procedure of the study. They were confirmed about the fact that their answers and their personal information would be confidential and would be only used for the purpose of the study, and upon giving information, all the participants filled the consent form (Appendix F). Figure 1 summarizes the data collection procedure of the study.

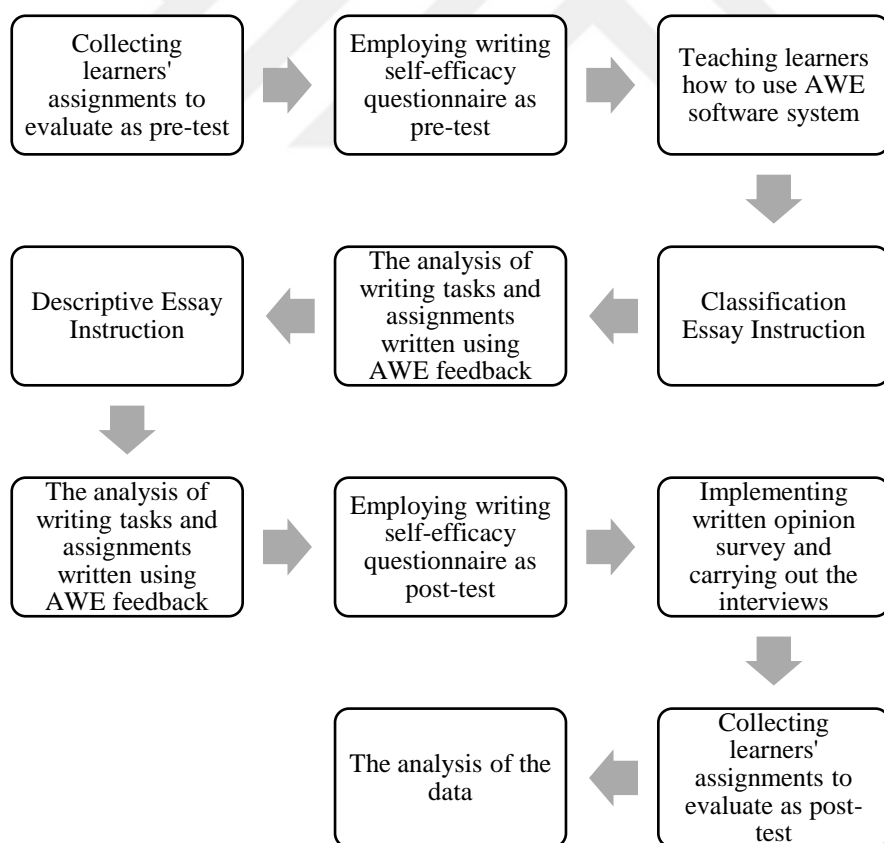


Figure 1. Data collection procedure

3.4.1. Pre-Intervention Stage

As for the first step, learners' writing tasks, which were the last assignments they wrote before the study, were collected and graded by the researcher and a colleague to reveal to what extent the experimental and control groups were similar to each other with their writing achievement. Moreover, learners' scores were saved to make comparisons with their written work after the intervention. For the evaluation of the written tasks, a holistic rubric described above (Appendix A) was used. Inter-rater reliability of the scores was calculated and Cronbach's Alpha was found as 0.95

As for the first step of the intervention process, Writing Self-efficacy Questionnaire by Yavuz (2004) was implemented as pre-test. The first step was to teach learners how to use AWE systems in the computer lab at School of Foreign Languages. The researcher spent two hours to get the learners to discover the features of AWE systems. First, learners created free accounts using their own e-mail addresses. Next, the researcher used a model essay including grammatical errors to demonstrate the features of AWE systems. At this stage, learners were informed about the fact that AWE systems are not faultless and might spot errors even though the sentence does not include any grammatical errors; for instance, when the learners use 'passive structures', the system spots it as errors and asks the writer to change it with 'active structures'. Therefore, learners were asked to critically analyze AWE feedback before directly using it on their final drafts. As just giving briefing would not be enough for the learners to fully explore the systems, they were asked to write a model essay to be used for AWE feedback. They copied the essays they wrote on their mobile phones to the system and checked their errors. During this session, the researcher supported the learners individually when they needed assistance or could not comprehend the feedback explanation.

3.4.2. During-Intervention Stage

Week 1-2

Upon learners were tutored for the use of AWE software systems, classification essay writing instruction started. The same syllabus was followed both for the experimental groups and for the control group. The first essay type was classification essay. After the learners were taught the steps of writing classification essays and analyzed sample classification essays to be more acquainted with the new essay type, they were asked to write a

classification essay on the following topic: *Write a classification essay about the types of teacher you encountered with during your education.* The instructor wanted learners to write their essays on their mobile phones, as it would be easier for the learners to transfer their essays to AWE system. Before having AWE feedback, learners were required to send their first drafts to the e-mail address provided by the researcher. By the way, to prevent learners to send the corrected versions as first drafts, the researcher emphasized that first drafts would be used for the purpose of the study, and only final drafts they wrote using AWE feedback would be the criteria for evaluation. Learners were allowed to spend a lesson hour to utilize AWE feedback and write their final drafts. While learners were using AWE software, the instructor did not comment on learners' questions to avoid being the part of learners interaction with AWE feedback due to the fact that one of the main purposes of the study was to reveal to what extent learners could use AWE software independently to self-edit their compositions and to what extent AWE feedback was effective for providing feedback for learners' errors. Therefore, the instructor only helped the learners when they had technical problems with the computer or Internet connection. Learners were asked to send their final drafts to the same e-mail address after utilizing AWE feedback. When the learners' engagement with AWE feedback was observed, it can be stated that some students spent ten to fifteen minutes with AWE software while others spent the whole lesson time (50 minutes) to correct their errors and improve their final drafts. During the second hour, learners' essays were reflected on the board, and they read aloud their essays. When an error was spotted, the instructor sometimes asked the writer to correct the error and sometimes asked the other learners' to correct the error. Apart from grammatical errors, the instructor and peers commented on the organization and content of the essays. About 15-20 essays were provided feedback during the second hour. As the learners would write a second writing task on classification essay, learners whose essays could not be provided with feedback because of time constraints were provided with feedback during the second feedback session. For the next lesson hours, learners were asked to write their second task of classification essay using the following topic: *Write a classification essay about the activity types to do in winter in your city.* The same procedure was followed for the second writing task. Learners wrote their essays on their mobile phones, sent their first drafts to the e-mail address provided by the researcher, transferred their first drafts to AWE system, used the first lesson hour by using AWE software, utilized AWE feedback, wrote their final drafts, sent their final drafts to the same e-mail address, and the second lesson hour was spent for instructor and peer feedback

on content, organization, grammar, unity, and coherence of the essays. Moreover, the instructor and the learners held the final discussion on classification essay. That is, the instructor pointed out the common errors made by the learners, and the learners asked their questions if they had any. Generally, the questions were about the content and idea development while writing classification essay.

At the end of the lesson, after learners wrote two tasks on classification essay, used AWE feedback, analyzed and provided feedback for each other's essays, they were given the following topics to write a classification essay as their assignment for their portfolio evaluation: *Write a classification essay about (a) types of jobs (ex. white collar, pink collar, blue collar), (b) clothing styles (ex. formal, casual), (c) group of spectators in sports events (ex. supporters, fanatics, hooligans), (d) kinds of social networking sites, (e) kinds of friends you have, (f) types of sports.* Learners were given the weekend to write their assignments. During the first lesson hour on the following week, the following procedure was followed: they sent their first drafts to the e-mail address, spent the first lesson hour for AWE feedback and sent their final drafts to the same e-mail address. While learners were sending their final drafts, the instructor put all the final drafts into one document to print out. The instructor printed out the assignments of the learners during the break and provided individualized feedback during the second hour. The instructor provided explicit feedback for the learners' errors and discussed the content and organization of the assignment with the writer of the essay. Because one lesson hour was not enough to provide feedback to all assignments, the instructor collected the assignments he could not provide feedback and provided feedback later. The time interval between learners' actual writing process and instructor's feedback was kept as short as possible since the problems learners faced with while writing their essays might be forgotten.

Eight lesson hours were spent for the classification essay; namely, two hours to teach classification essay, two hours for the first writing task, two hours for the second writing task, and two hours for the assignment.

Week 2-3

After classification essay type was covered, learners were introduced to descriptive essay writing. Learning descriptive essay was not challenging for the learners as they learned descriptive paragraph writing beforehand. Two hours were spent to teach the basics of descriptive essay, and sample essays were analyzed and discussed with the learners to make

them more familiar with descriptive essay. The following prompt was given to the students for their first writing task of descriptive writing: *During your education, you took a lot of exams. Describe one of the exam atmospheres you could not forget. Try to give vivid details so as to create a picture of the exam environment in your readers' head.* Learners prepared their first drafts for the following lesson, and the same procedure was followed; namely, they sent their first drafts to the e-mail address, transferred their first drafts to AWE system. For the next step, they spent the first hour of the lesson to utilize AWE feedback. Later on, they sent their final drafts to the same e-mail address. The second hour of the lesson was spent to provide the instructor and peer feedback. As the purpose of descriptive essay was to give clear and descriptive details to the readers to help them have a picture of the environment discussed in the essay, the instructor and peers shared their ideas with the writer to improve the quality of the description of the essay. At the end of the second hour of the lesson, learners were provided with the following prompt for their second task of descriptive essay: *Although people visit a lot of places throughout their lives, some places have always become special for them. Describe a place that has special significance for you. Describe where it is, what the place looks like, the people who live there, and the feelings you have about that place.* The same procedure was followed for the second writing task. Learners wrote their essays on their mobile phones, sent their first drafts to the e-mail address provided by the researcher, transferred their first drafts to AWE system, used the first lesson hour by using AWE software, utilized AWE feedback, wrote their final drafts, sent their final drafts to the same e-mail address, and the second lesson hour was spent for instructor and peer feedback. Moreover, a five-minute discussion was held to make the final comments on descriptive essay.

At the end of the lesson, they were provided with the following prompts to write a descriptive essay as their assignment for their portfolio evaluation: *(a) Describe a scene from a typical wedding ceremony from Turkish culture, (b) Describe someone whom you really hate. Tell about the features in terms of personality and appearance, (c) Describe someone who is really influential for you (a teacher, an actor, a business person, an author, etc.) by telling about her/his prominent characteristics and explaining why you have chosen this person.* Learners were given the weekend to write their assignments. The assignment procedure that was followed for the classification essay assignment was employed for the descriptive essay assignment. That is, learners sent their first drafts to the e-mail address, spent the first lesson hour for AWE feedback, wrote their final drafts, and sent final their drafts to the same e-mail

address. While learners were sending their final drafts, the instructor put all the final drafts into one document to print out. The instructor printed out the assignments of the learners during the break and provided individualized feedback during the second hour. The instructor provided explicit feedback for the learners' errors and discussed the content and organization of the assignment with the writer of the essay.

Eight lesson hours were spent for the descriptive essay; namely, two hours for teaching descriptive essay, two hours for the first writing task, two hours for the second writing task, and two hours for the assignment. Figure 2 shows learners' writing process during the experimental procedure of the study.

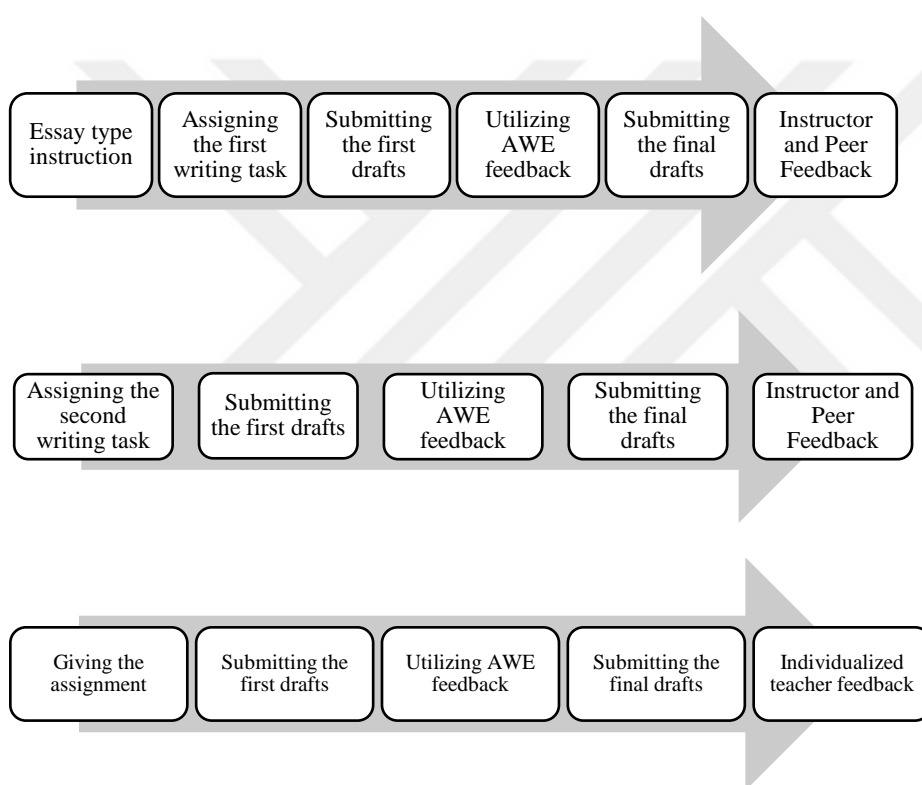


Figure 2. Learners' writing process during the experiment

Writing Instruction in Control Group

As for the first step, the participants in the control group were informed about the purpose of the study and filled the consent form. Later, their writing tasks were collected to be compared with the written tasks of the participants in the experimental groups. Writing Self-efficacy Questionnaire by Yavuz (2004) was implemented as pre-test. After pre-test was employed, learners were taught how to write classification essay. As in experimental groups, learners wrote three times for each essay type, two of which were to be analyzed in the

classroom with the teacher and peers, and one of which was written for their writing portfolios and was provided with individualized teacher feedback. As for the classroom instruction, learners were asked to send their first drafts to the e-mail address provided by the researcher as for the first step. Then they were given 15-20 minutes to edit their essays before reading aloud procedure. During the editing process, learners employed various strategies. For instance, some consulted peer feedback, some used dictionaries, and some preferred to search on the Internet for assistance. When learners finished editing their papers, they sent their final drafts to the same e-mail address they sent their first drafts. The rest of the lesson time was spent on the instructor and peer feedback as in experimental groups. The same writing prompt given to the learners in the experimental group for the second writing task was assigned to the learners in the control group, and the same procedure described above was followed. Upon completing the feedback procedure for the second writing task, learners were given the same 5 prompts as their assignment for their portfolio evaluation. Learners sent both their first and final drafts to the e-mail address, and the instructor individualized feedback was provided for the assignments. After completing the process of classification essay teaching, the same procedure was followed for descriptive essay instruction.

3.4.3. Post-Intervention Stage

The intervention took 16 hours of academic writing course. Learners had 6 hours of academic writing course each week; therefore, two and a half weeks were spent for the intervention. The last two hours of the course during the third week were spent on post-tests. That is, Writing Self-efficacy Questionnaire by Yavuz (2004) was implemented as post-test both in experimental groups and in control group. After learners in experimental groups completed the questionnaire, the written opinion survey was employed, and learners were asked to reflect their AWE experience. Moreover, after learners completed the written survey, the researcher orally asked the learners whether they were in favor of using AWE system. Only two students in *ProWritingAid* group stated that AWE feedback was not useful for them. The researcher requested to have an interview with these two students, and they accepted to participate. Apart from these two students, seven students (five females and two males) from *ProWritingAid* group and six students (five females and one male) from *Grammarly* group volunteered to participate in the focus form semi-structured interview. The interviews were conducted in the researcher's office when the students were available

during the first week after the intervention. Moreover, learners' writing tasks they wrote two weeks after the intervention in both experimental groups and control group were collected to be evaluated by the researcher and the colleague as post-test in order to reveal whether there were any improvements in their academic writing achievement.

3.5. Data Analysis

A writing self-efficacy questionnaire was implemented as pre-test and post-test in all groups. The purpose of the implementation of questionnaire is to determine whether the use of AWE feedback affects learners' writing self-efficacy or not. Moreover, learners' writings collected as pre-test and post-test were graded by utilizing the holistic rubric with the purpose of investigating whether AWE feedback improves learners' writing achievement. SPSS program (version 21.0) was used to conduct the statistical tests. As for the first step, the normality tests regarding the questionnaire and rubric data via SPSS (21.0) were carried out. Based on the normality test results, it was determined that some of data were normally distributed, while some were not. Thus, Paired Sample T tests and One Way ANOVA tests were implemented for the data which were normally distributed. Paired Sample T test is used to test whether there is a significant difference between measurements taken at two different times on a single sample of the same individuals (İslamoğlu & Alnıaçık, 2014, p. 304). In addition, One Way ANOVA test is applied to analyze the situations where it is desired to compare more than two conditions (Field, 2009, p.348). Therefore, Paired Sample T test was employed to make comparisons within groups, and One Way ANOVA test was carried out to compare groups with each other. As for the data which were not normally distributed, Wilcoxon signed-rank test and Kruskal-Wallis test from nonparametric tests were employed. Dörnyei (2007, p.230) reported that Wilcoxon signed rank test is utilized to analyze the matched-pair data which are not normally distributed. On the other hand, the Kruskal-Wallis test is used to test whether the difference between more than two sample means is significant (İslamoğlu & Alnıaçık, 2014, p. 453). To investigate sources of difference in ANOVA test, post hoc tests were employed. Post hoc tests include pairwise comparisons which make comparisons of all groups (Field, 2009, p.372). Similarly, Mann Whitney U test was used to determine the sources of difference based on the results of Kruskal-Wallis test. Mann Whitney U test from nonparametric tests is used to test whether the difference between two independent means is significant (İslamoğlu & Alnıaçık, 2014, p. 447). Dörnyei (2007, p.51) explains a certain method to ensure reliability in scoring; that is to say, the correlation of the

scores of two raters are calculated. Regarding this, two raters scored learners' written tasks, the average of the scores provided by two different raters were considered as the final score, and finally, quantitative analysis was carried out on the final scores of the learners. Writing self-efficacy questionnaire was piloted in other classes that would not participate in the study to investigate the reliability of the questionnaire, and Cronbach's Alpha was determined as 0.82.

So as to investigate what kind of errors learners corrected utilizing AWE feedback, the content analysis method was used. "Content-analysis consists of analyzing the contents of documentary materials such as books, magazines, newspapers and the contents of all other verbal materials which can be either spoken or printed" (Kothari, 2008, p. 110). Similarly, content analysis includes coding the data systematically to find out patterns and improve well-developed interpretations (Mackey & Gass, 2012, p. 197). In this vein, each learner in experimental groups wrote six essays using AWE feedback during the experimentation. First and final drafts of those essays were compared to unveil the kind of corrections learners made utilizing AWE feedback. Types of errors were categorized in each essay. Corrections, false-repairs, and no corrections categories were created to better explore learners' engagement with AWE feedback. Moreover, vocabulary exchanges were also labeled and categorized under the lexical and structural variety category. The words learners omitted were also analyzed during the analysis of learners' essays. To ensure the reliability in error categorization, the inter-rater reliability technique was employed. Regarding this, second expert categorized 30% of learners' learners' essays. To calculate the reliability percentage, Miles and Huberman (1994)'s formula ($\text{reliability} = \frac{\text{consensus}}{\text{consensus} + \text{disagreement}}$) was carried out.

Content analysis was employed for analyzing the written opinion surveys and semi-structured focus group interviews which aimed at exploring Turkish EFL learners' perceptions about using AWE feedback in writing classes. Dörnyei (2007, p. 245) argued that the categories regarding qualitative data in content analysis are not pre-determined, but they are determined inductively with respect to the data analyzed. Thus, as the themes in this study were not predetermined but were generated from the data, inductive content analysis was applied. The method of constant comparison was adopted for content analysis. "In constant comparison the researcher compares the new data with existing data and categories, so that the categories achieve a perfect fit with the data" (Cohen et al., 2005, p. 493). To this end, answers were analyzed to find out learners' opinions, how they got benefited from AWE

feedback, and the effects of AWE feedback on their writing achievement. Figure 3 shows instruments to answer research questions.

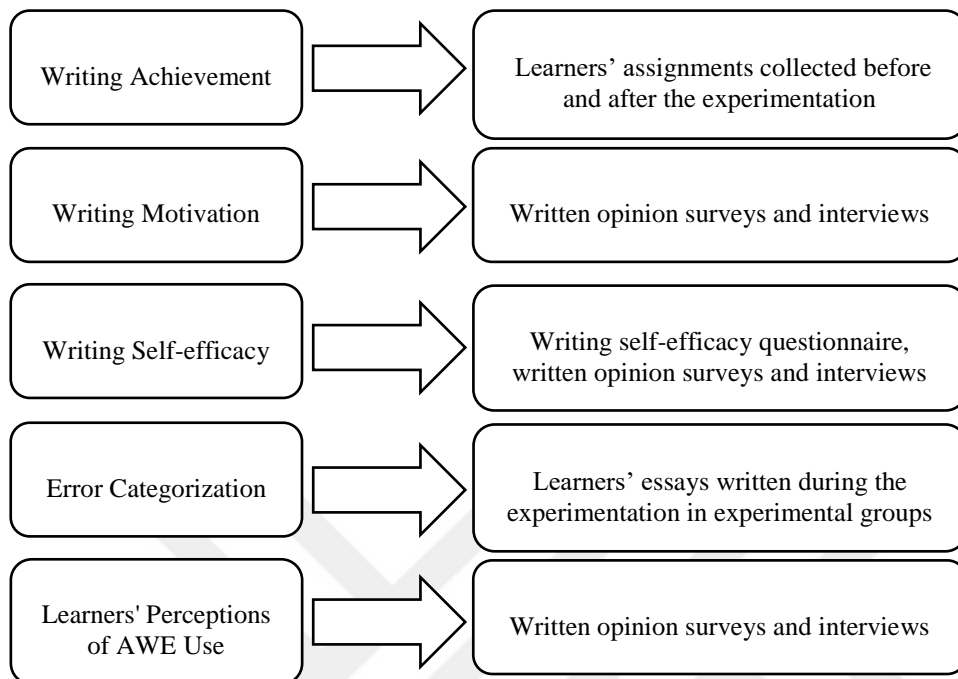


Figure 3. Instruments to answer research questions

CHAPTER IV

FINDINGS AND DISCUSSION

This study was carried out to investigate the effects of AWE feedback on learners' writing achievement, writing self-efficacy, and writing motivation. The type of errors learners corrected utilizing AWE feedback was analyzed as well. This study also explored the perceptions of learners regarding AWE use in writing classes.

The answers to the following questions were sought in this study:

1. Is Automated Writing Evaluation feedback effective in improving learners' writing achievement?
2. Does using Automated Writing Evaluation feedback increase learners' writing motivation?
3. Does using Automated Writing Evaluation feedback increase learners' writing self-efficacy beliefs?
4. What kind of errors do learners correct using Automated Writing Evaluation feedback?
5. What are the learners' perceptions of using Automated Writing Evaluation as a source of feedback in writing classes?

4.1. Findings

In order to present the findings of the study, the results of each research question were represented and discussed as follows:

4.1.1. First Research Question

The first research question was addressed to investigate whether the use of AWE feedback is effective in improving learners' writing achievement. To this end, learners' writings were

scored using a holistic rubric. So as to ensure the reliability of the scoring, two raters scored learners' written work collected as pre-test and post-test, the averages of the scores provided by raters were considered as the final score, and quantitative analysis was carried out on the final scores. Upon assuring the reliability of the scores, the normality test via SPSS was conducted. Considering the result of the normality test, it was determined that some data were normally distributed but some were not. Thus, for the group comparisons, the One Way ANOVA test from parametric tests was implemented for normally distributed data; on the other hand, the Kruskal Wallis Test from non-parametric tests was applied for data that were not normally distributed. In addition, post hoc analysis and Mann-Whitney U tests were employed to determine which groups were significantly different from each other regarding their scores. Moreover, to address the difference within the groups, the Paired Sample T-test from parametric tests was conducted for normally distributed data, and the Wilcoxon test from non-parametric tests was implemented for data which were not normally distributed.

4.1.1.1. Findings of Writing Achievement

The findings of the Kruskal-Wallis test based on pre-test scores were presented as follows:

Table 2

Findings of the Kruskal-Wallis Test with Respect to Pre-Test Scores of the Participants

Tests	Groups	N	df	Mean rank	χ^2	p
Focus-Pre	1 Experimental Group 1	31	2	45.24	0.039	0.981
	2 Experimental Group 2	28		46.32		
	3 Control Group	32		46.45		
Organization-Pre	1 Experimental Group 1	31	2	43.42	1.126	0.569
	2 Experimental Group 2	28		50.30		
	3 Control Group	32		44.73		
Pre-test Total Score	1 Experimental Group 1	31	2	45.24	0.039	0.981
	2 Experimental Group 2	28		46.32		
	3 Control Group	32		46.45		

As the data regarding focus, organization and total scores of pre-test were not normally distributed, Kruskal-Wallis tests were conducted to analyze learners' scores and compare groups according to their writing achievement prior to the study. As shown in Table 2, it can be reported that no significant difference was found between groups in areas of focus, organization, and total scores of pre-test ($p > 0.05$). Thus, it can be stated that learners in both experimental and control groups were equal to each other in those areas based on pre-test scores.

The findings of the ANOVA test regarding pre-test scores were presented as follows:

Table 3

Findings of the One Way ANOVA Test with Respect to Pre-Test Scores of the Participants

Tests		Sum of Squares	df	Mean Square	F	p
Content-Pre	Between Groups	7.950	2	3.975	0.839	0.435
	Within Groups	416.808	88	4.736		
	Total	424.758	90			
Style-Pre	Between Groups	0.196	2	0.098	0.034	0.966
	Within Groups	250.705	88	2.849		
	Total	4250.901	90			
Conventions-Pre	Between Groups	3.199	2	1.600	0.420	0.658
	Within Groups	335.301	88	3.810		
	Total	338.500	90			

Content, style and conventions scores of pre-test were normally distributed; thus, One Way ANOVA tests were implemented to compare the scores of the groups they had prior to the study concerning these areas. As represented in Table 3, it might be stated that there is no significant difference found between the experimental groups and the control group with their content, style, and conventions scores ($p > 0.05$). Therefore, it may be argued that all groups were equal in those areas of writing before the experimentation process started.

The findings of the Kruskal-Wallis test based on post-test scores were presented as follows:

Table 4

Findings of the Kruskal-Wallis Test with Respect to Post-Test Scores of the Participants

Tests	Groups	N	df	Mean rank	χ^2	P	Sig. Difference
Content-Post	1 Experimental Group 1	31	2	45.10	3.112	0.211	
	2 Experimental Group 2	28		40.13			
	3 Control Group	32		52.02			
Style-Post	1 Experimental Group 1	31	2	60.76	23.156	0.000*	1-2
	2 Experimental Group 2	28		48.84			1-3
	3 Control Group	32		29.22			2-3
Conventions-Post	1 Experimental Group 1	31	2	57.21	40.979	0.000*	1-3
	2 Experimental Group 2	28		60.91			2-3
	3 Control Group	32		22.09			
Total Score-Post	1 Experimental Group 1	31	2	58.21	14.265	0.001*	1-3
	2 Experimental Group 2	28		47.16			2-3
	3 Control Group	32		33.16			

The data with regard to content, style, conventions and total scores of post-test were not normally distributed; therefore, the Kruskal-Wallis test was carried out to figure out whether there were significant differences between groups in these areas. As illustrated in Table 4, no significant difference was found between the experimental and the control groups regarding content scores. In addition, the same test was implemented as for style post-test scores of the groups to analyze if there were significant differences or not. Based on the result of the Kruskal-Wallis test, it was determined that there was a significant difference between groups ($\chi^2= 23.156$, $p < 0.05$). Mann Whitney U test was conducted to find out which groups differed from each other, and Mann Whitney U test provided that there was a significant difference regarding the post-test scores of style between experimental groups 1 and 2 ($U=287.000$, $p < 0.05$), experimental group 1 and control group ($U = 185.500$, $p < 0.05$), and experimental group 2 and control group ($U = 221.500$, $p < 0.05$). That is, it may be commented that the experimental group 1 outperformed experimental group 2 and the control group regarding the total post-test scores of style. Moreover, experimental group 2 performed better than the control group regarding post-test style scores. As for conventions post-test scores, it might be noted that the Kruskal-Wallis test indicated significant differences between groups ($\chi^2= 40.979$, $p < 0.05$). Similarly, so as to discover which groups differed from each other, Mann Whitney U test was conducted. The results showed that there was a significant difference between experimental group 1 and the control group ($U = 146.500$, $p < 0.05$); besides, experimental group 2 and control group also differed from each other significantly according to their total post-test convention scores. Thus, it may be stated that the convention post-test scores of experimental group 1 and experimental group 2 are remarkably higher than those of the control group. About the comparison of the learners' total scores they obtained from the rubric, a significant difference was determined based on Kruskal-Wallis test results ($\chi^2= 14.265$, $p < 0.05$). Mann Whitney U test, which was applied to figure out which groups differed from each other, represented that experimental group 1 and control group significantly differed from each other ($U = 241.000$, $p < 0.05$); besides, Mann Whitney U test also indicated a significant difference between experimental group 2 and control group ($U = 292.000$, $p < 0.05$). Based on the results of post-test total scores, it might be stated that experimental groups 1 and 2 outperformed the control group.

Table 5

Findings of the One Way ANOVA Test with Respect to Post-Test Scores of the Participants

		Sum of Squares	df	Mean Square	F	p	Sig. Difference
Focus-Post	Between Groups	37.724	2	18.862	4.948	0.009*	1-2
	Within Groups	335.446	88	3.812			
	Total	373.170	90				
Organization-Post	Between Groups	12.561	2	6.280	2.222	0.114	
	Within Groups	248.736	88	2.827			
	Total	261.297	90				

The data with respect to focus and organization post-test scores were normally distributed; hence, the One Way ANOVA test was implemented so as to determine the differences between groups if there are any. Based on the One Way ANOVA results, it might be pointed out that there was a significant difference between groups concerning their total focus post-test scores ($F = 4.948$, $p < 0.05$). Thus, Scheffe, one of the post hoc Tests, was applied to investigate the source of the difference. The results obtained were found to be significantly different between experimental group 1 (Mean = 16.85, $sd = 2.23$) and experimental group 2 (Mean = 15.30, $sd = 1.71$). No significant difference was found between experimental groups and control group. Thus, it might be noted that experimental group 1 got higher scores than experimental group 2 on the focus part of the rubric. When it comes to organization post-test scores, it might be reported that there was no significant difference found between groups based on One Way ANOVA test results ($p > 0.05$).

To figure out the differences within groups, Paired Sample T-tests and Wilcoxon Signed-Rank tests were conducted. The results of the Paired Sample T-tests are as follows:

Table 6

Findings of the Paired Sample T-Test with Respect to Scores of the Participants

Group	Test	N	\bar{X}	S	df	t	p
Experimental Group 1	Content-Pre	31	15.28	2.15	30	-2.343	0.026*
	Content-Post	31	16.33	2.40			
	Style-Pre	31	14.36	1.75	30	-4.058	0.000*
	Style-Post	31	16.17	2.34			
Experimental Group 2	Focus-Pre	28	16.35	1.52	27	2.705	0.012*
	Focus-Post	28	15.30	1.71			
	Content-Pre	28	15.95	2.52	27	-0.092	0.928
	Content-Post	28	16.00	1.75			
	Organization-Pre	28	15.86	1.79	27	-0.649	0.522
	Organization-Post	28	16.13	1.57			
	Conventions-Pre	28	13.09	2.06	27	-11.456	0.000*
	Conventions-Post	28	17.20	1.09			
Control Group	Organization-Pre	32	15.32	1.92	31	-1.321	0.196
	Organization-Post	32	15.69	1.51			
	Style-Pre	32	14.46	1.85	31	1.480	0.149
	Style-Post	32	13.97	1.68			
	Conventions-Pre	32	12.75	1.98	31	-1.262	0.217
	Conventions-Post	32	13.23	1.94			

Table 6 represents the results of the Paired Sample T-tests conducted to determine whether there was a significant difference within groups based on the comparison of their pre-test and post-test scores regarding the parts of the holistic rubric. As for experimental group 1, it might be noted that the group showed significant improvement in content and style areas ($p < 0.05$). When it comes to experimental group 2, it may be indicated that there were significant differences found in focus and convention areas when pre-test and post-test scores were compared ($p < 0.05$); however, no significant difference was found regarding content and organization areas ($p > 0.05$). Finally, when Paired Sample T-test results of control groups were analyzed, it might be reported that there was no significant difference in the organization, style, and convention parts of learners' essays when pre-test and post-test scores regarding these areas were compared ($p > 0.05$).

Wilcoxon Signed-Rank test results were presented as follows:

Table 7

Findings of the Wilcoxon Signed-Rank Test with Respect to Scores of the Participants

Group	Tests	Measurement	N	Mean Rank	Sum of Ranks	Z	p
Experimental Group 1	Focus Pre-Post	Negative Ranks	13	14.92	194.00	-0.510	0.610
		Positive Ranks	16	15.06	241.00		
		Ties	2				
	Organization Pre-Post	Negative Ranks	6	12.42	74.50	-2.936	0.003*
		Positive Ranks	22	15.07	331.50		
		Ties	3				
	Conventions Pre-Post	Negative Ranks	2	11.25	22.50	-4.429	0.000*
		Positive Ranks	29	16.33	473.50		
		Ties	0				
	Total Score Pre-Post	Negative Ranks	5	11.25	8.50	-4.029	0.000*
Positive Ranks		26	16.33	453.50			
Ties		0					
Experimental Group 2	Style Pre-Post	Negative Ranks	5	12.30	61.50	-2.539	0.011*
		Positive Ranks	19	12.55	238.50		
		Ties	4				
	Total Score Pre-Post	Negative Ranks	8	9.75	78.00	-2.477	0.013*
		Positive Ranks	18	15.17	273.00		
Control Group	Focus Pre-Post	Negative Ranks	8	8.31	66.50	-1.716	0.086
		Positive Ranks	13	12.65	164.50		
		Ties	11				
	Content Pre-Post	Negative Ranks	10	12.80	128.00	-2.365	0.018*
		Positive Ranks	21	17.52	368.00		
		Ties	1				
	Total Score Pre-Post	Negative Ranks	13	12.46	162.00	-1.909	0.056
Positive Ranks		19	19.26	366.00			
Ties	0						

*Based on negative ranks

Table 7 represents the results of the Wilcoxon Signed-Ranks tests implemented to figure out if there was a significant difference within groups regarding the comparison of their pre-test and post-test scores for the parts of the holistic rubric. Firstly, it might be stated that experimental group 1 showed significant improvements in organization, conventions, and total scores parts based on the comparison of pre-test and post-test scores ($p < 0.05$); nevertheless, there was no significant difference determined on focus part according to the results of the tests ($p > 0.05$). Therefore, it might be noted that the scores of the experimental group 1 have increased with respect to organization, conventions and total score compared

to prior to the study. As for experimental group 2, it might be noted that style and total scores are the two parts learners showed significant improvements. That is, the experimental groups can be believed to improve their writing skills in these areas. Finally, a significant difference was found with regard to the content score of the control group. The control group can be thought to develop the content of their texts. However, no significant difference was found respecting focus and total post-test scores; therefore, it may be reported that they have not considerably improved their texts on these areas.

4.1.1.2. Discussion of Writing Achievement

The findings regarding the effects of AWE feedback on learners' writing achievement were presented above. Moreover, the findings with respect to the comparison of the groups based on rubric parts were also provided. In that regard, it might be stated that experimental group 1 got higher scores than experimental group 2 concerning focus scores; however, there was no significant difference found between experimental groups and control group. Based on Wilcoxon Signed-Rank test results, it might be stated that experimental group 1 did not improve the focus aspect of their essays significantly. Moreover, according to the Paired Sample T-test results, it might be stated that experimental group 2 decreased their total focus scores when pre-test and post-test scores were compared. Thus, it might be stated that the participants in experimental group 2 may have focused on AWE feedback more to improve their grammar, punctuation, and vocabulary; they might have ignored the focus aspect during the editing process. Therefore, it might be noted that the significant difference between experimental groups 1 and 2 is not due to the improvement thanks to experimentation but due to the decrease of the focus total scores of experimental group 2. Regarding the results, it might be reported that AWE feedback in the free version is not efficient in improving the focus parts of learners' texts.

As for the content aspect of learners' essays, the results of the Kruskal-Wallis test indicated that experimental and control groups did not differ from each other significantly. Thus, a possible explanation for this result might be that the experimental groups could not outperform the control group, for AWE systems do not provide content-related feedback in the free version. Findings of Paired Sample T-tests and the Wilcoxon Signed-Rank tests showed that experimental group 1 and control group significantly improved their content while experimental group 2 did not. This result may not be attributed to the experimentation, namely AWE feedback, as content-related feedback is not provided in free versions of AWE

systems; thus, this result may be partly explained due to the fact that experimental group 1 and control group got benefited from teacher+peer feedback more when it is compared to experimental group 2. Moreover, it may also be argued that experimental group 2 may have attached more importance to the grammar and vocabulary aspects of their texts since the system provided feedback mainly on these areas. Regarding content feedback, learners in both experimental groups expressed in written opinion surveys and during interviews that the systems' not providing feedback on the content in the free version may be considered as a deficiency of AWE feedback.

One Way ANOVA test results also revealed the comparison of the groups regarding the organization part of learners' written work. That is, no significant difference was found between experimental and control groups based on total post-test scores of the organization part. Moreover, within-group tests also show that experimental group 2 and control group did not significantly improve the organization of their essays, but what is surprising is that a significant difference was found between pre-test and post-test scores of experimental group 1 concerning the organization. AWE feedback does not provide feedback on the organization in the free version either. Therefore, it might be argued that these results may be reasonable since both the experimental groups and the control group had feedback regarding the organization from their teacher and peers. The significant difference in experimental group 1 can be explained in part by the fact that they may be believed to benefit from teacher-peer feedback more compared to the other groups, and they might have focused more on the organization as the system already provided feedback on convention errors. Thus, AWE feedback in the free version may be regarded as insufficient in improving the organization of learners' essays.

When it comes to the style aspect, the Kruskal-Wallis test results represented that experimental group 1 outperformed both experimental group 2 and the control group; moreover, experimental group 2 got higher scores than the control group based on style post-test scores. As noted, AWE systems have embedded thesaurus function learners can utilize to exchange the words with their synonyms. Experimental group 1 might be believed to get benefited from this function more than the experimental group 2. That result might be reasonable when the fourth research question of this study is analyzed. The analysis of learners' essays indicated that participants in experimental group 1 made twice as many vocabulary changes than experimental group 2. Thus, a possible explanation for this result might be that participants in experimental group 1 may have found thesaurus function of

ProWriting Aid more user-friendly or that they might have focused on improving the quality of their texts by using more sophisticated words. Sentence structure varieties of learners' essays were also taken into consideration while grading learners' essays. Learners in experimental groups may be also believed to utilize a variety of structures in their texts. Similarly, participants in experimental groups explained in the written opinion survey and during interviews that they felt more confident constructing more complex structures since the system provided feedback if they made errors regarding grammar structures. AWE systems, therefore, might be considered as efficient in improving the vocabulary and structure variety of learners' essays.

The results of the Kruskal-Wallis test also showed the difference between groups regarding conventions part of learners' essays. In that regard, a significant difference was found between the experimental groups and the control group. That is, both experimental groups outperformed the control group concerning post-test conventions total score. Grammar, mechanics, spelling, etc. of learners' essays were analyzed on the convention part of the rubric. The main feature of the AWE systems is to provide feedback on errors related to those parts. Therefore, it might be noted that learners improved the convention part of their written work thanks to AWE feedback. This result might be considered reasonable when the error corrections learners made with AWE support were analyzed. Participants in both groups corrected a number of errors regarding conventions during the experimentation process. Moreover, they also addressed in written opinion surveys and during interviews that they thought they improved their grammar, punctuation, and spelling considerably. Thus, AWE systems with their immediate and consistent feedback provision might be believed to affect learners' writing skills positively with respect to these areas of language. Finally, the experimental groups got higher scores than the control group regarding total post-test scores. It is not a surprising result when other scores are taken into consideration. As experimental groups outperformed the control group in style and conventions parts, the increase in these areas also affected the total points learners got from the rubric.

4.1.2. Second Research Question

The second research question investigated the opinions of Turkish EFL learners about the effects of AWE feedback on writing motivation. To explore the learners' perceptions of AWE feedback, a written opinion survey with ten questions was developed. While preparing written opinion survey questions, two writing instructors and the advisor of the researcher

examined the questions and provided feedback. Based on feedback provided by the experts, the final shape of the written opinion survey was determined (See Appendix C).

The third question of the written opinion survey addressed the learners’ perceptions of AWE feedback with regard to writing motivation, and the question is ‘What is the difference in your motivation towards writing when you compare it before and after using the software? Were you more motivated to write before using it? Or has your motivation for writing increased after using it?’ This question addressed learners’ opinions about the effects of AWE feedback on writing motivation. In addition to the written opinion survey, learners’ opinions were gathered via semi-structured focus group interviews, which were carried out after the experimentation process ended. Learners also explained the reasons for the changes in their writing motivation.

To analyze the data gathered via the written opinion survey and semi-structured focus group interviews, the content analysis method was used. That is, the answers given for each question were analyzed in a detailed way, and codifications were made concerning learners’ answers.

4.1.2.1. Findings of Writing Motivation

Learners’ opinions of the effects of AWE feedback on writing motivation are as follows:

Table 8

Learners’ Overall Opinions on the Effects of AWE Feedback on Writing Motivation

Groups	Effects on Writing Motivation	<i>f</i>
Grammarly Group	Improvement in Writing Motivation	26
	No Change in Writing Motivation	2
ProWriting Aid Group	Improvement in Writing Motivation	22
	No Change in Writing Motivation	9

Table 8 demonstrates learners’ opinions on the effects of AWE feedback on their writing motivation if there is any. It includes the beliefs of the learners in both of the experimental groups and represents whether there is an improvement in learners’ writing motivation or not.

With respect to Table 8, 26 students out of 28 in experimental group 2 (Grammarly group) stated that their writing motivation has increased thanks to AWE feedback, namely Grammarly software. Only 2 students out of 28 asserted that their motivation towards writing

did not change when they compared their writing motivation prior to and after the experimentation process. Thus, learners' beliefs of AWE feedback concerning motivation were mostly positive. Table 8 also indicates that 22 students out of 31 in experimental group 1 (ProWriting Aid group) showed improvement in their motivation towards writing. Similar to the beliefs of the learners in Grammarly group, the perceptions of learners in ProWriting Aid group were particularly positive. Moreover, Table 8 presents that the rate of the increase in motivation was higher in experimental group 2 when it was compared to experimental group 1.

Table 9

Factors Affecting Learners' Writing Motivation with Regard to AWE Feedback

Groups	Motivating Factors	<i>f</i>
Grammarly Group	Less dependence on others	5
	Self-correction	5
	Ease in writing	8
	Fewer errors	8
	More sophisticated words	2
	Learning from my errors	2
	Understanding my errors easily	6
ProWriting Aid Group	Ease in writing	5
	Fewer errors	4
	More sophisticated words	4
	Understanding my errors easily	2
	Improving Grammar	4
	Improving Punctuation	4
	Enriching my essay	7
	Self-confidence	2

Table 9 represents the factors affecting learners' writing motivation about AWE feedback. That is to say, it demonstrates the reasons why learners considered there was an increase in their writing motivation with the help of AWE feedback.

Depending on Table 9, learners provided a variety of reasons for their improvement in writing motivation. On the one hand, as for Grammarly group, five students put forth that their motivation increased as they think they were less dependent on others during their writing process. Moreover, five students considered Grammarly effective for writing motivation due to the fact that it allowed learners to correct their errors themselves. Besides, for eight students, Grammarly had a role in the development of writing motivation since it made the writing process easier for the learners. Similarly, eight students reported that making fewer errors thanks to the software led them to have more motivation towards writing. In addition, two students asserted that using more sophisticated words provided by

the software with its thesaurus function and learning from their errors were two other factors affecting their writing motivation positively. Finally, six students in Grammarly group claimed that the benefit of the software which fostered learners' understanding of their errors easily was also of great importance for the increase in their writing motivation.

As for ProWriting Aid group, the reasons learners reported respecting the increase in their writing motivation showed similarity with Grammarly group but with different frequencies. That is, five students attributed the development of their writing motivation to the fact that their writing process was not as difficult as their previous writing experience when they did not utilize AWE feedback. four students emphasized that the development in their writing motivation was because of making fewer errors with the help AWE. Moreover, being able to use more sophisticated words thanks to AWE system with its thesaurus feature was another prominent motivating factor declared by four participants. In addition, two students thought that they could understand their errors without difficulty thanks to AWE feedback, which was considered as a motivating factor. Four students were in favor of the belief that the growth in their writing motivation was related to the improvement they made regarding grammar and punctuation. Besides, for seven students, another motivating factor was that they were able to enrich their essays thanks to the assistance of AWE software. As for the final motivating factor, two students asserted that the software affected their self-confidence beliefs positively, which in turn fostered their writing motivation. Some comments of participants about the benefits of AWE feedback on their writing motivation are as follows:

Student 2 (Grammarly Group)

"I think my writing motivation has increased because the writing process is easier for me now. Before using the software, I had difficulty in writing, but I enjoy writing now as the process is easier."

Student 9 (Grammarly Group)

"Of course, there is a significant increase in my motivation after using the software because I can see my errors and correct them myself."

Student 21 (Grammarly Group)

"I have become more willing to write because I need to consult the software, not a person, to correct my errors and this is an advantage for me."

Student 26 (Grammarly Group)

“As I continued to use the software, I observed a decrease in my errors. Thanks to this, my motivation increased because I made fewer errors and became more willing to write.”

Student 23 (ProWriting Aid)

“My motivation to write has increased because it gave me the confidence to know that there is an application where I can easily correct my errors.”

Student 24 (ProWriting Aid)

“I am more motivated to write because I have the opportunity to use different words and easily correct my errors.”

Student 30 (ProWriting Aid)

“After using the software, my motivation has increased because I was making more errors at first, but later I noticed that the number of errors has decreased considerably.”

4.1.2.2. Discussion of Writing Motivation

Regarding the qualitative data results of Grammarly group, using AWE feedback can be considered as a motivator in writing. That is, most of the participants declared that thanks to AWE feedback, their writing motivation increased compared to that of prior to the study. That could be due to the fact that using technology may have played a significant role in the writing process of the learners. Moreover, learners provided a variety of reasons with regard to their motivation increase. Learners generally need feedback for their writings from both their teachers and/or their peers; however, having feedback from others may not be immediately possible whenever learners need it. Besides, teachers' feedback provision may take a considerable amount of time given that they need to comment on a number of papers, which in turn might decrease learners' motivation. Similarly, looking up dictionaries and searching on the Internet for the appropriate use of the language may be a tedious process for learners, and they may not reach reliable information. However, learners' use of AWE feedback may have prevented the dependence on others, as they may consult AWE feedback whenever they want. Moreover, the system's instant spotting of errors with possible answers and rules may again ease the learners' editing process since they do not have to consult any other resources such as reference books and dictionaries. These two points could have led students not to become dependent on others and increased their motivation towards writing.

Another motivating factor addressed by the learners is the opportunity for self-correction. This could be due to the fact that by correcting their errors themselves thanks to AWE feedback, learners may have felt that they succeeded in the writing process themselves. Moreover, they involve in the learning process actively and become more autonomous learners. This inner feeling of success might have fostered learners writing motivation. Another motivating aspect of AWE feedback described by the learners is the system's making the writing process easier. Writing is generally considered challenging by language learners, as it necessitates the language learners to have the knowledge of grammar, vocabulary, punctuation, spelling, etc. Moreover, the drafting procedure where learners edit their papers to create the final one without errors also requires learners to spend a great deal of time and effort. The frequency of this motivating factor is relatively higher than others, which may show that learners recognize the writing process hard to achieve, and they might be said to seek opportunities that will make the writing process easier. Accordingly, AWE feedback is believed to decrease the effort and time learners devote to editing papers with its main function by providing instant feedback, and also ease the writing process as what learners all need to do is just to upload their papers and implement the feedback by making the required corrections. Thus, these factors may be thought to affect learners' tasks beliefs positively, and their motivation may have been enhanced due to the systems' making the writing process a lot easier compared to the traditional editing procedure of the learners.

The decline in the number of errors they made in subsequent drafts and writing tasks was another motivating factor addressed by the participants in Grammarly group. Learners may tend to avoid using complicated structures and vocabulary items not to make errors in their drafts; moreover, errors in writing may get learners to feel anxious. However, learners may have felt relaxed in making errors as AWE software corrects errors regarding language use. Moreover, they noted that the number of errors in their drafts decreased in time from more errors to fewer, which in turn may have led them to consider themselves as successful writers of English. Similar to task beliefs of learners, their self-beliefs may also be believed to change to the extent desired thanks to AWE feedback. For that reason, decreasing the number of errors with the help of AWE feedback might be considered as a motivating factor.

Some learners in Grammarly group explained the reason for the increase in their writing motivation as using more sophisticated words in their writings. AWE software utilized by the students has an embedded thesaurus dictionary in the system, which provides learners the synonyms of words. That is, learners do not have to look up other dictionaries when they

prefer to substitute the words. As stated, writing includes several components, and one of which is vocabulary. Learners with low vocabulary stock have the option to exchange the word with the synonym. In this way, they might prevent the repetition of using the same words over and over again in the same writing task and create more academic papers. In addition, they may improve their vocabulary stock with the help of the thesaurus function of the system. That is to say, AWE system might be believed to motivate learners, for it develops the vocabulary knowledge of the learners and helps learners feel more competent in using vocabulary properly in their essays.

Learners' statement of 'understanding my errors easily and learning from my errors' were found to be two outstanding motivating factors when the qualitative data were analyzed. As stated, teachers may not provide individualized and detailed feedback for learners' errors due to their feedback burden. However, AWE software underlines the errors of the learners and provides explanations, and this feedback can be considered as individualized feedback since the learner is provided corrections related to their errors. Moreover, the system's explanation includes the reason why the learners' sentences are incorrect. Thanks to AWE feedback, learners may have the opportunity to understand their errors and learn from their errors as well. When learning from errors and making fewer errors put together, learners may be believed to make themselves acquainted with the new information of the language use and reduce their errors in subsequent drafts. Thus, as the learning takes place thanks to AWE feedback, learners might be believed to foster their writing motivation.

To conclude the motivating factors in Grammarly group, the frequencies of making fewer errors, understanding errors, and learning from errors were found to be high. Thus, learners may be believed to focus on the errors with their answers in the written opinion survey and interviews, and avoiding making these errors thanks to AWE feedback was found to be among the factors that motivated learners. Another prominent motivating factor was declared by the learners as the ease in writing. Therefore, it could be put forward that learners consider the writing process demanding, and as AWE feedback has made the writing process of learners easier, it has been found to be one of the most important factors motivating students. Being less dependent on others and self-correction are also two other remarkable factors affecting the writing motivation of learners positively.

On the other hand, learners in ProWriting Aid group addressed similar motivating factors as in Grammarly group but with different frequencies. As in Grammarly group, learners in Pro Writing group stated that their writing process got easier thanks to AWE feedback, the

number of errors they made decreased during subsequent drafts, they used more sophisticated words thanks to the thesaurus function of the system, and they were able to comprehend their errors easily with the help of AWE feedback. Therefore, these can be considered among the motivating factors for the learners in ProWriting Aid group.

Distinctively, some learners in ProWriting Aid group attributed the increase in their writing motivation to different factors compared to Grammarly group. For instance, some students declared that their writing motivation increased owing to the fact that they improved their grammar and punctuation in writing with the help of feedback provided by the software. Learners are supposed to implement their knowledge of grammar and punctuation while they are writing their compositions, which may sometimes become problematic for language learners. However, AWE software provides the necessary corrections on these problematic areas of the language for the learners. Moreover, due to the fact that AWE systems mainly provide feedback for grammar, punctuation, and vocabulary use, learners might be believed to point out these aspects as the motivating factors for writing.

One notable motivating factor in ProWriting Aid group addressed by the learners was the essay enrichment. When the first and the final drafts of learners' essays were analyzed, it was found that learners in ProWriting Aid group utilized the thesaurus function more than the learners in Grammarly group. Learners' statement of 'enriching my essay' might be considered as vocabulary variety they employed in their essays. Furthermore, learners might be claimed to have felt less nervous while constructing their sentences and choosing the vocabulary items, for the software corrects the erroneous sentences. Thus, structure variety, as well as vocabulary variety, may also be stated beneficial for learners to enrich their essays, which in turn may have increased learners' writing motivation due to the fact that learners may have believed they created more academic papers. That is, they may have felt more confident about writing which is another motivating factor.

To summarize the motivating factors of ProWriting Aid group, it could be noted that learners attached importance to increasing the quality of their essays, improving their knowledge regarding grammar and punctuation, using more sophisticated words, making fewer errors, understanding their errors easily, and feeling more confident about writing thanks to AWE feedback.

4.1.3. Third Research Question

The third research question addressed the effects of AWE feedback on self-efficacy beliefs of learners in writing. To investigate the change in learners' self-efficacy beliefs, a writing self-efficacy questionnaire was implemented in both experimental and control groups as pre-test and post-test for the study. Moreover, learners in experimental groups filled out a written opinion survey after the study, and the researcher carried out semi-structured focus group interviews with some of the participants in experimental groups. The fourth question of the written opinion survey asked learners' opinions with regard to changes in their writing self-efficacy beliefs after they utilized it.

To analyze the data gathered via the self-efficacy questionnaire, SPSS (21.0) program was used. The normality test via SPSS was implemented. Based on the normality test results, it was found out that the data were normally distributed. Thus, the One Way ANOVA test from parametric tests was implemented for group comparisons, and Paired Sample T-tests were implemented for measuring the changes of the groups.

4.1.3.1. Findings of Writing Self-efficacy

The findings of SPSS tests were presented as follows:

Table 10

Findings of One Way ANOVA Results for Pre-Test Scores

	Sum of Squares	df	Mean Square	F	p
Between Groups	0.018	2	0.009	0.076	0.927
Within Groups	10.533	88	0.120		
Total	10.551	90			

As represented in Table 10, based on learners' writing self-efficacy beliefs in both experimental and control groups prior to the study, it can be reported that there is no significant difference found between experimental groups and control group ($p>0.05$). Therefore, it can be stated that the experimental groups and the control group were equal regarding their self-efficacy beliefs in writing.

Table 11

Findings of One Way ANOVA Results for Post-Test Scores

	Sum of Squares	Df	Mean Square	F	p	Significant Differences
Between Groups	1.276	2	0.638	4.475	0.014*	2-3
Within Groups	12.550	88	0.143			
Total	13.827	90				

Table 11 illustrates the results of the One Way ANOVA post-test results of the groups concerning writing self-efficacy beliefs in writing after the experimentation process ended. Regarding learners' post-test scores obtained from writing self-efficacy questionnaire, it may be reported that there was a significant difference between groups ($p < 0.05$). Post-hoc test results show that this difference was between experimental group 2 and the control group. That is to say, Grammarly group outperformed the control group based on post-test scores of the writing self-efficacy questionnaire. However, no significant difference was found between experimental group 1, namely ProWriting Aid group, and other groups.

Table 12

The Findings of Paired Sample T-Test Results for the Groups

Groups	Test	N	\bar{X}	S	sd	t	p
Experimental Group 1	Pretest	31	2.78	0.35	30	-4.41	0.000*
	Posttest	31	3.11	0.39			
Experimental Group 2	Pretest	28	2.79	0.38	27	-5.96	0.000*
	Posttest	28	3.26	0.41			
Control Group	Pretest	32	2.75	0.29	31	-2.48	0.019*
	Posttest	32	2.97	0.32			

Table 12 provided the summary statistics for the change in writing self-efficacy beliefs of the participants in the study. That is, there was a significant difference in writing self-efficacy beliefs of the learners in experimental group 1 ($p < 0.05$). Similarly, experimental group 2 made a significant improvement regarding writing self-efficacy beliefs as well ($p < 0.05$). Also, control group improved their self-efficacy beliefs when pre-test and post-test scores were compared ($p < 0.05$).

Learners' opinions of the effects of AWE feedback on writing self-efficacy are as follows:

Table 13

Learner's Overall Opinions on the Effects of AWE Feedback on Writing Self-Efficacy

Groups	Effects on Writing Self-Efficacy Beliefs	<i>f</i>
Grammarly Group	Improvement in Writing Self-Efficacy Beliefs	26
	No Change in Writing Self-Efficacy Beliefs	2
ProWriting Aid Group	Improvement in Writing Self-Efficacy Beliefs	25
	No Change in Writing Self-Efficacy Beliefs	6

Table 13 demonstrates learners' opinions of the effects of AWE feedback on their writing self-efficacy beliefs. It includes the perceptions of the learners in both experimental groups and shows if there is an improvement in learners' writing self-efficacy beliefs or not.

Regarding Table 13, 26 learners out of 28 in experimental group 1 (Grammarly group) reported that their writing self-efficacy increased with the help of AWE feedback. Only two students declared that there was no change in their writing self-efficacy beliefs compared to that of prior to the study. Table 13 also illustrates 25 learners out of 31 experimental group 2 (ProWriting Aid) group improved their writing self-efficacy thanks to AWE feedback. When the results of qualitative data were considered, it can be stated that learners' opinions regarding the effects of AWE feedback on writing self-efficacy were mostly positive. Furthermore, the increase rate in writing self-efficacy was higher in the experimental group 1 than the experimental group 2.

Table 14

Factors Affecting Learners' Writing Self-Efficacy Beliefs with Regard to AWE Feedback

Groups	Factors increasing the writing self-efficacy	<i>f</i>
Grammarly Group	Less dependence on others	13
	Fewer errors	8
	More sophisticated words	6
	Improvement in writing achievement	6
	Enriching my essay	5
	Ease in writing	4
	Self-correction	4
	Improving grammar	13
ProWriting Aid Group	More sophisticated words	9
	Enriching my essay	6
	Improving punctuation	6
	Self-correction	5
	Ease in writing	4
	Improvement in writing achievement	4
	Less dependence on others	4

Table 14 illustrates the factors affecting learners' writing self-efficacy beliefs with regard to AWE feedback. That is, it represents the reasons why learners think their writing self-efficacy increased thanks to AWE feedback.

Regarding Table 14, students expressed a variety of reasons for their development in writing self-efficacy. As for Grammarly group, 13 students reported that their writing self-efficacy increased as they thought they felt less dependent on others while writing and editing their texts. Furthermore, eight students regarded AWE system as efficient for writing self-efficacy due to the fact that they made fewer errors compared to the number of errors they did prior to the study. In addition, six students believed that they were able to use more sophisticated words thanks to AWE system. Another factor affecting learners' writing self-efficacy beliefs was the benefit of AWE system on learners' writing achievement. Besides, five students indicated that they enriched their essays with AWE support. In addition, four students addressed that their writing process got easier thanks to utilizing AWE system during editing their texts. Finally, four students agreed that their writing self-efficacy increased, for AWE system allowed them to correct their errors themselves.

When it comes to ProWriting Aid group, the factors learners put forth for the increase in their writing self-efficacy beliefs showed similarity to those of Grammarly group but with different frequencies. That is to say, 13 students attributed the improvement of their writing self-efficacy to the fact that AWE feedback enhanced their grammatical knowledge with its feedback on grammar. Nine students emphasized that being able to use more sophisticated words thanks to AWE help was a prominent factor in improving their writing self-efficacy. Six students expressed that they enriched their essays and improved their punctuation skills with the help of AWE feedback, which in turn fostered their writing self-efficacy. Besides, five students reported that they could correct their errors themselves and it was considered as a factor affecting their writing self-efficacy positively. Four students explained that AWE system made the writing process easier for them, and four other students also commented that their writing achievement improved with the help of AWE feedback. Finally, four students expressed that their writing self-efficacy improved due to the fact that they were less dependent on others for their written work.

Some comments of participants about the effects of AWE feedback on their writing self-efficacy are as follows:

Student 1 (Grammarly group)

“I think my writing self-efficacy has increased. Before using the software, I was asking my teacher or friends about the errors that I sometimes cannot see. I was able to correct my errors by myself while using the software.”

Student 2 (Grammarly group)

“I could not write without consulting someone before using the software. My errors and things I didn't know were constantly coming up against me, but now I am not only correcting my errors, but I can easily learn things I do not know.”

Student 6 (Grammarly group)

“I think it improved my writing self-efficacy because I am making fewer punctuation errors and am able to choose more appropriate words now.”

Student 7 (Grammarly group)

“I think it improved my writing self-efficacy because I am making fewer punctuation errors and am able to choose more appropriate words now.”

Student 4 (ProWriting Aid group)

“I started learning better about where to use punctuation marks. I think I use grammar more correctly now.”

Student 9 (ProWriting Aid group)

“I started to use language and words more effectively and accurately.”

Student 14 (ProWriting Aid group)

“I was making more errors before. Now I realize that the number of errors I make has decreased and that I am better in writing compared to my first essays.”

Student 17 (ProWriting Aid group)

“After I started using the software, my writing started to get better. Now I'm only making few errors in grammar. Word suggestions also improve me a lot.”

4.1.3.2. Discussion of Writing Self-efficacy

With regard to quantitative data results gathered from writing self-efficacy questionnaire, it might be stated that writing self-efficacy of all groups increased when pre-test and post-test

scores were compared. It was found that the increase rate was the highest in Grammarly group, then in ProWriting Aid group, and it was least in the control group. However, a significant difference was only found between experimental group 2 and the control group. A possible explanation for this may be that the use of Grammarly affected learners' writing self-efficacy beliefs positively. When it comes to experimental group 1 and the control group, it might be argued that there was no significant difference found between these two groups. Thus, it might be stated based on quantitative data results that the use of ProWriting Aid did not affect learners' writing self-efficacy beliefs as much as Grammarly did. Moreover, the increase in writing self-efficacy of the control group may be attributed to the learning effect since it is aimed to increase learners writing self-efficacy with conventional teaching techniques. On the other hand, qualitative data present surprising findings for the experimental group 2; thus, it might be suggested that discussing quantitative results together with qualitative results may help to reach a more reliable and valid conclusion concerning the effects of AWE feedback on writing self-efficacy of the learners.

Regarding the qualitative data results, learners explained whether their writing self-efficacy increased thanks to utilizing AWE feedback or not. Almost all students in Grammarly group declared that AWE feedback had a profound effect on increasing their writing self-efficacy beliefs. Surprisingly, the majority of the participants in ProWriting Aid group declared that their writing self-efficacy developed with the help of AWE feedback even though One Way ANOVA results indicate that there is no significant difference between ProWriting Aid group and the control group. Also, Paired Sample T-test results represent that the improvement of writing self-efficacy in ProWriting Aid group was significant. Thus, it might be stated that ProWriting Aid may be believed to be efficient in fostering the writing self-efficacy of learners when quantitative and qualitative results were addressed together.

Learners also explained the factors which caused the increase in their writing self-efficacy beliefs in the written opinion survey and during the interviews. The reasons learners put forth for the increase in writing motivation were so much similar to the reasons they expressed for the effects of AWE feedback on writing motivation. That is, regarding the factors of the development of writing self-efficacy of the learners in Grammarly group, it might be indicated that the outstanding factor was being less dependent on others thanks to AWE feedback. This might be explained due to the fact that learners tend to consult their teacher and peers to get feedback or seek answers from reference books for their written work, but teachers' feedback provision might take some time due to their workload, peers might not

be equipped with enough language knowledge to provide effective feedback, and finding and learning from reference books may take a huge amount of time for learners which might be demotivating for them. However, learners had the opportunity to be provided with instant feedback whenever they needed with the help of AWE feedback. Thus, it might be stated that learners' dependence on others has decreased remarkably, and this might have affected learners' writing self-efficacy positively.

Another prominent factor addressed by some of the participants in Grammarly group was related to the number of errors learners made. Learners noted that the number of errors they made decreased thanks to AWE support. A possible explanation for this may be that as learners had effective and instant feedback for their errors, they may have learned the correct use of the language and may not have repeated making the same errors again, which could have reduced the number of their errors. Moreover, some participants reported that they were able to use more sophisticated words in their texts thanks to the thesaurus function of AWE feedback. This result may be explained by the fact that learners did not have to search for synonymous of the words since they had the option to change the words with their synonyms with one click. Moreover, it might be stated that learners could learn new vocabulary items in the long term as they keep utilizing AWE software. Making fewer errors and using more sophisticated words might be believed to increase the quality of learners' written work, and similarly, some participants indicated that their writing achievement improved with the help of AWE feedback. Besides, for some students, the reason for the increase in writing self-efficacy was that they enriched their texts with AWE assistance. When these reasons were considered, it might be argued that learners made fewer errors, used more sophisticated words, increased their writing achievement, and enriched their essays; thus, feedback on errors and thesaurus function may be believed to improve learners' written work to the desired extent by increasing learners writing self-efficacy.

Some learners in Grammarly group pointed out that AWE feedback made the writing process easier. This result is likely to be related to the fact that the time and effort learners devoted to the editing process decreased and that they could correct their errors easily. Finally, the minority of the participants declared that AWE software enabled them to correct their errors themselves. Thus, it might be stated that learners were actively involved in their own learning process and that they may have felt that they succeeded in writing, for they could correct their errors without consulting others, which was also reported by participants as a noticeable factor regarding the increase in writing self-efficacy.

On the other hand, as for the results of ProWriting Aid group, quantitative data represent that there was a significant difference regarding writing self-efficacy when pre-test and post-test scores of the questionnaire were compared; however, as stated, no significant difference was found between ProWriting Aid group and control group. Based on quantitative data results, it might not be stated that ProWriting Aid exerted an impact on learners' writing self-efficacy. Qualitative data results, on the other hand, illustrated that the majority of learners improved their writing self-efficacy thanks to AWE feedback. Thus, it can be stated when two sources of data were considered that ProWriting Aid may have affected learners' writing self-efficacy positively. Learners also expressed the reasons regarding the improvement in their writing self-efficacy.

The prominent factor explained by the participants was the improvement in grammar and punctuation. A possible explanation for this might be that the main function of AWE feedback is to provide feedback on these issues. Therefore, learners may be believed to make use of feedback in their written work and to improve their grammar and punctuation skills, which in turn made learners think they become self-sufficient. Another outstanding factor was declared by the participants as the opportunity to utilize more sophisticated words in their essays. As discussed, another function of AWE system is its embedded thesaurus function, which eases learners' writing process by preventing them from searching for other sources for vocabulary variety. That is, learners can be thought that they had the opportunity to use more academic words. When the improvement in writing skills and using more sophisticated words are addressed, learners may be believed to enrich their essays thanks to AWE feedback, which was regarded by some participants as one of the factors fostering writing self-efficacy.

The minority of the participants commented that their writing achievement improved thanks to AWE feedback. That is, it may seem reasonable that the improvement in grammar, punctuation, and vocabulary use can be believed to affect learners' writing achievement. Furthermore, some participants addressed the fact that the system allowed them to correct their errors themselves and that they felt less dependent on others thanks to AWE feedback. This relationship may be explained by the fact that learners could correct their errors using AWE software without needing support from other resources, and as AWE software is capable of providing instant and accurate feedback on learners' errors with explanations, this might have decreased the need learners asked from others; besides, learners may be believed to take an active part in their learning process. As for the final factor, learners indicated that

AWE feedback made the writing process easier for them. As discussed, AWE system can be believed to lessen learners' work by offering corrections and explanations for their errors, which decreased the time learners put in editing.

4.1.4. Fourth Research Question

To analyze the fourth research question, the content analysis method was employed to explore what kind of errors learners corrected using AWE feedback. Qualitative data were then quantified by indicating the frequency of corrections. With that respect, learners' essays written during the study were analyzed. That is, each student in experimental groups wrote 6 essays utilizing AWE feedback during the experimentation process. First drafts and final drafts of essays were compared to find out the changes learners made between drafts. In addition to learners' error correction, errors with no correction were also examined. Moreover, lexical and structural varieties in learners' essays were also analyzed; that is to say, the word exchanges which were not considered as errors but learners made using AWE features were also presented in the categorization table. Two tables were prepared, one for *Grammarly* group and one for *ProWriting Aid* group. An expert who has been teaching writing for seven years read and made categorization of %30 of learners' essays so as to ensure the reliability of the categorization. Miles and Huberman (1994)'s formula (reliability = consensus/consensus + disagreement) was carried out to measure the percentage of two experts' consensus. With that respect, the consensus between the two experts on the categorization was 83%. Learners' corrections utilizing AWE feedback were presented in Appendix G. Moreover, sample essays learners wrote using AWE systems were provided in Appendix H.

4.1.4.1. Findings of Errors Corrected Using AWE Feedback

Categorization of learners' essays based on AWE system they used was presented as follows:

Table 15

The Kinds of Errors and Changes Learners Made and the Frequencies of Their Omissions, Their Lexical and Structural Variety, Their Corrections, Their False Repairs, and No Corrections in Grammarly Group

Category		Thematic Category				
		Omission	Lexical and Structural Variety	Correction	False-repairs	No Correction
Organization	Content					
	Expression		24			10
Grammar	Tense			20		12
	Agreement			132		5
	Sentence Formation			3		4
	Article			449		9
	Pronoun			30		3
	Clause	1	25	10		3
	Infinitive-Gerund			32	1	2
	Active-Passive			2	2	9
	Modals		4	8		
	Comparative			5		2
	Superlative			6		
	Missing Word					9
	Fragment					9
	Vocabulary	Verb		63		
Word Form				180	1	8
Noun		1	121			
Linking Words			42			
Adverb		11	37			
Adjective		1	147			
Preposition			3	155	4	4
Mechanics	Spelling			221	2	
	Capitalization			37	2	33
	Punctuation			137		25

Example corrections made by learners in Grammarly group were presented below:

Student 3 (Grammarly group)

“People ~~are~~ improve themselves thanks to technology.”

Student 11 (Grammarly group)

“Each of the students ~~study~~ studies for their exams in their dormitories.”

Student 12 (Grammarly group)

“Everyone could ~~spen~~ spend time outside when it is not cold.”

Student 19 (Grammarly group)

“You should ~~find~~ look for a special place.”

Student 23 (Grammarly group)

“Going abroad is an excellent ~~option~~ opportunity to improve your English.”

Table 15 illustrates the kinds of omissions that learners extracted from their texts, the kinds of lexical and structural additions which were not spotted as errors but learners changed using AWE feedback, the kinds of errors they corrected, the kinds of errors that were false-repairs, and the kinds of errors learners made no correction using AWE feedback in Grammarly group. With regard to Table 15, 1586 errors were made in total; that is, almost 90% of those errors were appropriately corrected, approximately 1% of them were false-repairs, and almost 5% of them were not corrected by learners using AWE feedback. Thus, it can be stated that learners corrected the majority of errors they made using AWE feedback. Moreover, as for the lexical and structural variety, learners made 413 changes of the vocabulary by using the thesaurus function of AWE system, 29 changes related to grammar structure, and 24 changes regarding their expression in their written work during the study. Corrections based on vocabulary regarding the meanings of the sentences and content-related errors were not taken into consideration, for AWE system does not provide content-related feedback in the free version.

With respect to the categories in Table 15, it may be argued that learners made errors in the categories of organization, grammar, and mechanics. About the percentages of errors, it can be reported that almost 1% of errors were related to the organization of the essays, approximately 49% were errors related to grammar, almost 22% were errors regarding vocabulary use, and nearly 29% were mechanical errors. As for the lexical and structural variety, 5% was related to the variety of expression, almost 6% was variety in grammar use, and approximately 89% was the variety of vocabulary.

When it comes to the correction rate of errors, it can be indicated that no correction was made with regard to the organization. About the grammatical errors, approximately 91% of the errors were corrected properly, almost 1% were false-repairs, and nearly 9% of the errors were not corrected. Concerning vocabulary errors, approximately 95% of errors were corrected properly, almost 2% were false-repairs, and roughly 4% of the errors were not corrected. As for the mechanical errors, almost 95% of errors were appropriately corrected, nearly 1% of the errors were false-repairs, and roughly 13% were not corrected.

The analysis of grammatical errors of learners shows that roughly 5% of them were tense errors, approximately 18% of them were agreement errors, almost 1% of them were sentence formation errors, nearly 60% of them were article errors, nearly 5% of them were pronoun errors, roughly 2% of them were clause errors, approximately 5% of them were gerund-infinitive errors, almost 2% of them were active-passive errors, nearly 1% of them were modals errors, approximately 2% of them were comparative-superlative errors, nearly 2% of them were errors regarding the missing word, and roughly 1% of them were fragment errors. Thus, the correction rate of the errors was comparatively high in that learners corrected 63% of tense, 96% of agreement, 98% of article, 90% of pronoun, and 92% of gerund-infinitive errors.

When vocabulary errors of participants were analyzed, 54% of them were about word form, and 46% of them were related to preposition use. As for the correction ratio, learners successfully corrected 95% of word form and 95% of preposition errors. When the vocabulary exchange rate is addressed, it can be stated that almost 16% of them were verb changes, approximately 30% of them were noun changes, roughly 10% of them were linking word changes, nearly 10% of them were adverb changes, almost 36% of them were adjective changes, and approximately 1% of them were preposition changes.

As for the mechanical errors, almost 49% of them were spelling errors, nearly 16% of them were capitalization errors, and approximately 36% of them were punctuation errors. Regarding the correction rate, almost all spelling errors were corrected properly, nearly 52% of capitalization errors were appropriately corrected, and almost 85% of punctuation errors were successfully corrected by the students.

Table 16

The Kinds of Errors and Changes Learners Made and the Frequencies of Their Omissions, Their Lexical and Structural Variety, Their Corrections, Their False Repairs, and No Corrections in ProWriting Aid Group

Category		Thematic Category				
		Omission	Lexical and Structural Variety	Correction	False-repairs	No Correction
Organization	Content					
	Expression		47			7
Grammar	Tense			25	1	8
	Agreement			43	2	17
	Sentence Formation		2	6		4
	Article			184	2	5
	Pronoun		1	27		3
	Clause		7	3	1	2
	Infinitive-Gerund			10	1	2
	Active-Passive			6	1	3
	Modals		4	6		
	Comparative			3		
	Superlative					
	Missing Word					14
	Fragment					7
	Vocabulary	Verb	1	261		
Word Form				126		7
Noun		5	341			
Linking Words		5	51			
Adverb		8	101			
Adjective		4	285			
Preposition			3	44		7
Mechanics	Spelling			327	2	20
	Capitalization			141	1	7
	Punctuation			226		17

Example corrections made by learners in Grammarly group were presented below:

Student 1 (ProWriting Aid group)

“Producers ~~are does not~~ do not think about the expenses”

Student 5 (ProWriting Aid group)

“The problem among others ~~lead~~ leads to a serious discussion.”

Student 8 (ProWriting Aid group)

“Each of them ~~are~~ is important factors.”

Student 16 (ProWriting Aid group)

“We can ~~divided~~ divide activitives into two groups”

Student 24 (ProWriting Aid group)

“The activity which I ~~mentioned~~ pointed out can be really entertaining at the weekend”

Table 16 represents the kinds of omissions that learners extracted from their texts, the kinds of lexical and structural additions which were not spotted as errors but learners changed using AWE feedback, the kinds of errors they corrected, the kinds of errors that were false-repairs, and the kinds of errors learners made no correction using AWE feedback in ProWriting Aid group. Regarding Table 16, 1317 errors were made totally; thus, approximately 90% of these errors were properly corrected, nearly 1% of them were false-repairs, and no corrections were made for 10% of these errors by students using AWE feedback. That is, it might be noted that students made corrections for the majority of their errors thanks to AWE feedback. Besides, about lexical and structural variety, learners exchanged 1039 vocabulary items by utilizing the thesaurus dictionary of AWE system, they made 47 changes with respect to expression and 14 changes regarding grammar. AWE system does not provide content-related feedback in the free version; therefore, corrections based on vocabulary regarding the meanings of the sentences and content related errors were not taken into consideration.

Regarding the error categorization in Table 16, it may be stated that students made errors in the categories of organization, grammar, and mechanics. As for the percentages of errors, it might be indicated that roughly 1% of the errors were about the organization, nearly 30% of the errors were related to grammar, approximately 15% of them were errors on vocabulary use, and roughly 57% of them were mechanical errors. About the lexical and structural variety, nearly 5% was the variety of expression, almost 2% was variety in grammar use, and approximately 95% was related to the variety of vocabulary.

As for the correction rate of errors, it may be pointed out that learners made no correction related to the organization. When the grammatical errors were analyzed, almost 82% of the errors were appropriately corrected, nearly 2% were false-repairs, and approximately 17% of the errors were no-correction. Regarding vocabulary errors, approximately 92% of errors were corrected appropriately, and nearly 8% of the errors were not corrected. About mechanical errors, almost 87% of the errors were properly corrected, roughly 1% were false-repairs, and nearly 6% were not corrected.

Table 16 also represents the analysis of grammatical errors of learners, which almost 9% of them were tense errors, nearly 17% of them were agreement errors, roughly 3% of them were sentence formation errors, approximately half of them were article errors, almost 8% of them were pronoun errors, and roughly 16% of them were errors related to clause, infinitive-gerund, active-passive, modals, comparative, missing word, and fragment. That is, the correction ratio was somewhat high in that students corrected 74% of tense, 70% of agreement, 96% of article, and 96% pronoun errors.

When errors related to vocabulary were analyzed, approximately 69% of them were in word form, and 31% of them were about preposition use. Regarding the correction rate, learners properly corrected roughly 95% of word form and approximately 87% of preposition errors. As for the vocabulary exchange rate, it might be indicated that nearly 25% of them were verb changes, almost 33% of them were noun changes, approximately 5% of them were linking word changes, roughly 10% of them were the change of adverbs, and nearly 28% of them were adjective changes.

Finally, about the mechanical errors of learners, almost 47% of them were spelling errors, nearly 20% of them were capitalization errors, and approximately 33% of them were punctuation errors. Concerning the correction rate, almost 94% of spelling errors were properly corrected, nearly 95% of capitalization errors were successfully corrected, and nearly 93% of punctuation errors were appropriately corrected by the learners.

4.1.4.2. Discussion of Errors Corrected Using AWE Feedback

The findings related to the corrections learners made using AWE feedback were presented above. Considering the corrections of Grammarly group, it was observed that learners made organizational errors. It is important to state again that Grammarly does not provide content-related feedback in the free version; thus, errors regarding content were regarded as out of the scope of the study. About the variety in expression change in learners' essays, it might be stated that some changes related to expression were made based on AWE feedback. That is to say, the software provided feedback for expression; however, that feedback focused on increasing the readability of the sentences not on the meaning of the context. On the other hand, learners also altered their way of expression during their editing process without any feedback provided by the software. From this point of view, a possible explanation might be that the software needs improvement with its feedback provision on content in the free

version. The system's not providing feedback on content was also reported by the students as a deficiency of AWE feedback on written opinion surveys and during the interviews.

Table 14 illustrates the corrections, false-repairs, no correction, and variety in learners' essays related to grammar in Grammarly group. It might be indicated that almost half of the learners' errors were related to grammar. Therefore, learners can be thought to need feedback on grammar for their written work. When it comes to the correction rate of grammatical errors, it was observed that learners could correct 91% of their errors. Conversely, only the minority of grammatical errors were not corrected by students during the editing process. When the type of grammatical corrections is addressed, it might be noted that learners may be believed to demand feedback on tense, agreement, articles, pronouns, and gerund-infinitive mostly. About tense corrections, it can be stated that learners corrected most of their errors; however, no correction of tense errors also needs closer analysis. As stated, AWE feedback does not provide content-related feedback in the free version; namely, it does not provide feedback on learners' errors, which require tense agreement within and between sentences. Thus, it might be stated that the software provides explanations and corrections when the sentences need corrections regarding structure, not content. Another prominent type of corrections of learners was related to the agreement. As known, English demands a subject-verb agreement to construct accurate sentences. However, learners may need support on the agreement, as this rule is not parallel in Turkish. Moreover, about the correction ratio, the result can be explained by the fact that learners were able to correct 96% of their agreement errors with the help of AWE feedback. Thus, AWE system might be stated that it is effective in providing accurate feedback on that aspect of grammar. The analysis of learners' essays also represents that 60% of the errors were about article use. Moreover, learners corrected almost all of their article errors with AWE support. Thus, it could be stated that feedback of AWE on article use is consistent and effective for learners. Corrections of pronoun and infinitive-gerund errors were two other prominent types of corrections learners made. When the correction rates of these errors, which are remarkably high, are taken into consideration, AWE feedback might be considered to be sufficient for learners. Furthermore, learners did not consult AWE feedback a lot for their errors regarding comparative-superlative, use of modals, and clause, but it might be still noted that the necessary corrections were provided by AWE software for these errors. Thus, although the number and corrections of errors were not high on these types of errors, AWE feedback might be believed efficient based on the result of this study. However, when errors on active-passive, missing

word and fragment were taken into consideration, it might be put forth that AWE feedback seems to be inadequate in the free version. This might be explained due to the fact that these are content-based errors, which AWE feedback does not provide enough feedback in the free version. In addition, learners expressed in written opinion surveys and during interviews that the software does not accept passive structures and suggests forming active structures for increasing the readability of the texts. This was considered as one of the deficiencies of AWE feedback by the participants as they wanted to convey their intended messages with passive structures.

When vocabulary errors are taken into consideration, learners might be believed to ask for assistance on errors related to word form and prepositions. The correction rate of each type of error was considerably high, which illustrates that AWE feedback might have the potential for providing feedback on these areas. As for vocabulary variety in learners' essays, it might be reported that learners exchanged verbs, nouns, linking words, adverbs, and adjectives with their synonyms using the thesaurus function of the software. It was also observed that learners focused on nouns and adjectives more while exchanging the words during their editing process. Moreover, the variety of verbs, linking words, and adverbs was relatively high as well. On the other hand, it should be noted that AWE software suggests omitting some adverbs, which do not add extra information to the sentences. Some of the participants were observed that they omitted adverbs by accepting AWE suggestion. Nevertheless, learners reported in written opinion surveys and interviews that they wanted to utilize these words in their essays despite AWE feedback, and they considered this as one of the negative features of AWE software.

Looking at the findings, it may be reported that learners demanded help for their errors regarding mechanics. That is, these include spelling, capitalization, and punctuation errors. The leading corrections seemed to be the ones regarding spelling. The reason why learners made a number of errors in spelling could be due to the fact that they wrote their essays using their mobile phones during the study, as it was easier to transfer their essays from their phones to the computers than writing their essays again on computers. However, it might still be noted that AWE feedback could be regarded as useful in providing accurate feedback on spelling when the correction rate, which was almost 100%, is taken into consideration. Moreover, not many of the learners reported that their spelling skills improved thanks to AWE feedback in written opinion surveys and during interviews. A possible explanation for this might be that they did not attach importance to spelling compared to other writing skills

although they made a number of spelling corrections. When errors and corrections regarding capitalization were addressed, it might be stated that learners corrected half of their capitalization whereas they made no corrections on the rest. Thus, AWE feedback might be stated that it is not capable of providing capitalization correction in the free version. Finally, learners may be believed to need assistance for their punctuation errors. As noted, punctuation use may be problematic for learners as it requires learners to memorize the correct punctuation mark depending on the type of sentence structure they construct in their essays. The analysis of punctuation errors shows that AWE software provided feedback for 85% of learners' errors in the free version. However, when the sentences with punctuation errors were analyzed on the system, it was figured out that the system provides feedback for some punctuation errors such as comma use in compound-complex sentences only in the premium version, but it might still be considered adequate in providing feedback for most of the punctuation errors in the free version.

When it comes to the categorization of errors in ProWriting Aid group, it might be stated that there were errors regarding the organization of the written works of the learners. Similar to Grammarly, ProWriting Aid does not provide feedback regarding content either in the free version. For that reason, errors of the students related to the content of the essays were not analyzed and considered as out of the scope of the study. Learners were observed that they changed their expressions while editing their texts on AWE software. Considering these changes, it might be stated that the variety of expression was based on both AWE feedback and learners' own wish. In other words, AWE software provided feedback on expression to enhance the readability of the texts; namely, that feedback did not include explanations regarding content. Besides, learners might be believed to vary their expressions without AWE support while revising their essays to create final drafts. With that respect, this may be explained due to the fact that AWE software needs advancement to provide content-related feedback in the free version. Similarly, learners also addressed in written opinion surveys and during interviews that the system is not capable of providing content-related feedback which is one of the disadvantages of utilizing AWE feedback.

Table 15 also represents the corrections, false-repairs, no correction, and variety in learners' essays related to grammar. It may be reported that approximately one-third of the errors were about grammar use. Thus, students might be believed to call for assistance for their grammatical errors. Correction ratio suggests that the majority of the grammatical errors were properly corrected by students with feedback provided by AWE system. On the

contrary, almost 18% of grammatical errors were not corrected. Addressing the type of grammatical corrections learners made by utilizing AWE system, it might be noted that learners consulted AWE feedback for their errors related to the tense, agreement, article use, pronouns, and other categories pointed out in Table 15. As for tense corrections, it might be noted that learners were able to properly correct their errors; on the other hand, no corrections of errors regarding tense needs attention as well. Learners were not able to correct their tense errors when time agreement between sentences was required since AWE feedback does not provide feedback on the content in the free version. Therefore, it may be argued that feedback provided by AWE software on tense errors mostly focuses on structure, not on content.

Regarding Table 15, the agreement was another type of error learners made corrections with AWE support. It might be stated that the software provided accurate explanations for almost 72% of agreement errors, but it could not help learners for the rest. Therefore, it might be indicated that AWE software is considerably efficient for feedback provision on agreement errors; however, it may be noted that the improvement of feedback capability of the software for this area of grammar might increase the effectiveness of the system. The categorization of errors also illustrates that nearly half of learners' grammatical errors were related to article use. When the correction rate is observed, it can be stated that learners approximately corrected all of the article errors. From that point of view, AWE feedback might be considered as providing sufficient feedback for article errors for students. The errors regarding pronouns were the other outstanding error type students consulted AWE support. The correction ratio of pronoun errors suggests that the software might be regarded as successful for its feedback provision of this error type. Even though learners did not need help for their clause, infinitive-gerund, modals, and comparative-superlative errors, it might be suggested that AWE feedback could achieve providing feedback for these types of errors when learners asked for.

Similar to the perceptions of learners in Grammarly group, learners in ProWriting Aid group also criticized AWE software for active-passive category in that it does not accept passive structures and suggests constructing active sentences to increase the readability of the texts. Similarly, it may be put forth that the system was found to be ineffective in its feedback provision on missing word and fragment errors in the free version. A possible explanation for this may be that these areas require the system to focus on the content of the texts, but it

may be reasonable that it is not efficacious in these areas as the system does not give feedback on the content in the free version.

With respect to vocabulary errors, students might be thought to need assistance for word formation and the appropriate preposition use. When the correction rates of these error types are taken into consideration, it may be indicated that learners were able to properly correct almost all of their errors regarding these two types. Thus, ProWriting Aid can be considered efficient in providing feedback for word formation and preposition use. About the variety of vocabulary in learners' texts, it might be indicated that students changed verbs, nouns, linking words, adverbs, and adjectives with their synonyms utilizing the thesaurus function of the software. Moreover, it was noticed that learners' focus respecting vocabulary variety is on the exchange of nouns, adjectives, and verbs. In addition, they also used a variety of adverbs and linking words as well. Thus, learners may be believed to prefer using more academic words in their essays to be able to construct well-constructed texts. On the other hand, learners omitted some vocabulary items in their essays during the editing process. This could be due to the fact that the system suggests omitting words that do not add meaning to the sentences. Nonetheless, students expressed in written opinion surveys and interviews that this can be regarded as a disadvantage of AWE feedback as they wanted to give place to these vocabulary items in their written work.

As for learners' mechanical errors, it was recognized that learners needed support on spelling, capitalization, and punctuation. 95% of spelling errors were accurately corrected by students thanks to AWE feedback. As in Grammarly group, students in ProWriting Aid group wrote their essays using their mobile phones during the study to save time while transferring to the computers; therefore, some spelling errors might be due to this reason. Yet, it could be still noted that AWE feedback might be regarded as effective in correcting learners' spelling errors. In addition, it should be noted that only one-third of the students reported in written opinion surveys and during interviews that they developed their spelling skills thanks to AWE feedback even though the number of spelling corrections was remarkably high. This result may be explained by the fact that learners may be believed not to give importance to spelling when it is compared to the other writing skills. With respect to capitalization errors, learners made a number of errors and could successfully correct almost all of them. Thus, ProWriting Aid might be stated that it is consistent while giving feedback on capitalization. Finally, the last type of error learners made was punctuation. 93% of punctuation errors were corrected appropriately by the students with the assistance

of AWE feedback. Moreover, some sentences of the participants in Grammarly group were analyzed on ProWriting Aid, and it was found that ProWriting Aid provided feedback on punctuation errors which were provided only in the premium version of Grammarly. From this point of view, it might be stated that ProWriting Aid might be regarded as more effective in providing feedback on punctuation.

4.1.5. Fifth Research Question

The fifth research question addressed the opinions of Turkish EFL learners about AWE use as a source of feedback. To find out their opinions, a written opinion survey including ten open-ended questions was developed. Moreover, the researcher carried out semi-structured focus group interviews with some of the participants in the experimental groups employing the same questions in the written opinion survey to have a better understanding. The questions were asked in Turkish language to be sure that learners could express themselves better. Two written opinion surveys were prepared for the participants, but the only difference between them is the name of AWE systems (Grammarly or ProWritingAid). Learners completed the written survey after the intervention process ended, and the questions in the survey aimed at exploring learners' experiences with AWE feedback during the intervention (See Appendix C).

The first question focuses on learners' general comments on AWE software they used (Grammarly or ProWritingAid). The second question is related to learners' judgments of their academic writing achievement before and after the intervention. The third question aims at revealing the changes in learners' writing motivation if any, thanks to AWE feedback use. The fourth question, similarly, asks whether there is a change in learners' writing self-efficacy beliefs before and after the intervention. The fifth question asks learners whether they would use AWE software after the study, and learners were supposed to explain their reasons. The sixth question asks what kind of errors learners corrected using AWE feedback. The seventh question examined the time that learners spent with AWE system; namely, they were asked whether they used the corrections provided by AWE system directly or critically evaluated feedback before using it in their final drafts. The eighth question asks for the positive features of AWE system; on the other hand, the ninth question tries to explore learners' opinions about the negative features of AWE system. The last and tenth question consults learners' opinions about AWE system that were not asked in the survey.

Written opinion surveys and semi-structured focus group interviews were analyzed employing the content analysis method. That is, the answers given for each question were analyzed in a detailed way, and codifications were made concerning learners' answers.

4.1.5.1. Findings of Learners' Perceptions of AWE Use

The categorization of learners' perceptions of AWE feedback in Grammarly group was presented as follows:

Table 17

The Perceptions of Learners of AWE Feedback in Grammarly Group

Category	Thematic Category	<i>f</i>
Advantages	Useful	23
	Self-correction	11
	Learning from my errors	10
	Time Effective	10
	Understanding my errors easily	10
	Enriching my essay	7
	User-friendly	6
	More attention to context	2
Disadvantages	Not content-related feedback	8
	Providing inaccurate feedback	5
Improvement in Writing Skill	Grammar	25
	Vocabulary	25
	Punctuation	22
	Fewer errors	19
	Spelling	6
Beliefs	Willingness to use AWE feedback in my future education	28
	Enhancing motivation	26
	Spent enough time with the system	24
	Enhancing writing self-efficacy	19
	Critically analyzed feedback	16
	Less dependence on others	16
	Enhancing self-confidence	4

Table 17 illustrates the perceptions of the participants in Grammarly group regarding AWE feedback and addresses several aspects to find out their opinions. It presents the advantages, the disadvantages, improvement in learners' writing skills, and learners' beliefs of AWE feedback.

Regarding Table 17, what learners suggested as the advantages of utilizing AWE feedback was presented. In that vein, it is apparent from this table that most of the students in Grammarly group considered the software useful in writing classes. Moreover, some students reported that self-correction was another positive aspect of using AWE feedback. Learning from their errors and understanding their errors easily were two other advantages of using AWE feedback for some students. Another outstanding advantage reported by some

participants was that the system reduced the amount of time they spent on editing. Next, some learners said that they enriched their essays thanks to AWE feedback, which was regarded as one of the advantages of AWE use. Some learners commented that the system was user-friendly, which made the editing process easier for them. Finally, only two students put forth that they could focus context more thanks to AWE feedback. Students' comments were presented as follows:

Student 8 (Grammarly group)

“Because the system corrects my errors, I can spend my time to improve the content of my essay now.”

Student 22 (Grammarly group)

“Before using the software, I had to correct my errors myself, and it used to take a lot of time, but now I could focus on content more.”

Table 17 also provides the aspects of AWE feedback which were noted as disadvantages by the participants. That is, one of the disadvantages of AWE system indicated by the participants was that the system did not provide context related feedback for learners' written work. Another disadvantage for the participants, on the other hand, was that the system sometimes provided inaccurate feedback for learners' errors.

As can be seen from Table 17, learners reported that their writing skill improved in some areas of the language. Most of the students expressed that their grammar knowledge improved after they used AWE software system. In addition to grammar improvement, the majority of the participants explained that their knowledge of vocabulary also increased. Another improvement was related to the improvement in punctuation use, which was emphasized by most of the participants. Furthermore, the minority of the students asserted that their spelling skill was another area they showed improvement after they utilized AWE feedback.

It can be seen from the data in Table 17 that learners expressed their beliefs regarding AWE use in writing. Most of the students indicated that they were willing to use AWE software in their future studies. Similarly, the majority of the students reported that their writing motivation and their writing self-efficacy beliefs increased thanks to AWE feedback. In a similar vein, learners believed that they spent enough time utilizing AWE system for their editing process. Moreover, some of the participants expressed that they critically analyzed

the feedback provided by the system before implementing it. Another point some learners focused on was that they felt less dependent on others thanks to AWE feedback, and the minority of the learners indicated that they felt more confident themselves in writing after they utilized AWE system.

Table 18

The Perceptions of Learners of AWE Feedback in ProWriting Aid Group

Category	Thematic Category	f
Advantages	Useful	19
	Self-correction	17
	Enriching my essay	14
	Understanding my errors easily	13
	Time effective	12
	User-friendly	7
	Learning from my errors	4
Disadvantages	Not content-related feedback	11
	Providing inaccurate feedback	4
Improvement in Writing Skill	Punctuation	28
	Vocabulary	26
	Grammar	24
	Spelling	12
	Fewer errors	8
	Willingness to use AWE feedback in my future education	29
Beliefs	Spent enough time with the system	26
	Enhancing writing self-efficacy	25
	Enhancing motivation	22
	Critically analyzed feedback	20
	Less dependence on others	16
	Enhancing self-confidence	3

Table 18 represents the opinions of the students in ProWriting Aid group with regard to AWE feedback and focuses on several points to find out their opinions. It illustrates the advantages, the disadvantages, improvement in learners' writing skills, and learners' beliefs regarding AWE feedback.

What stands out first in Table 18 is the advantages of using AWE feedback in writing. As in Grammarly group, learners in ProWriting Aid group reported that AWE system was useful in writing classes. Moreover, the system's providing an opportunity for learners to correct their errors themselves was considered as an advantage by the majority of the students. Some of the students commented that they enriched their essays thanks to AWE feedback. Understanding their errors easily was another aspect considered as an advantage by some of the participants in ProWriting Aid group. Similar to Grammarly group, learners in ProWriting Aid group also expressed that AWE use reduced the amount of time they spent on editing. Furthermore, the minority of the participants pointed out that the system's being

user friendly and the opportunity to learn from their errors were two other advantages of AWE use.

Closer inspection of Table 18 shows the learners' opinions of AWE use considered as the disadvantages. As in Grammarly group, learners in ProWriting Aid group emphasized that the major disadvantage was that the system did not provide context related feedback. Another disadvantage indicated by the minority of the students was that the system provides inaccurate feedback.

Table 18 also represents the areas of the language learners showed improvement. The majority of the participants expressed that their punctuation improved when compared to prior to the study. Moreover, most of the students reported that they developed their vocabulary knowledge thanks to the thesaurus function of AWE software. Improvement in Grammar was another area learners believed they showed improvement thanks to AWE feedback. In addition, the minority of the students indicated that their spelling improved, and they made fewer errors thanks to feedback provided by AWE software.

Regarding Table 18, learners explained their beliefs in the written opinion survey and interviews. Almost all of the students except for two expressed that they would continue to use AWE feedback in their future studies. Besides, more than two-thirds of the participants declared that they spent enough time with AWE software to edit their papers. Similarly, the majority of the participants believed that their writing motivation and writing self-efficacy increased thanks to AWE feedback. Most of the students indicated that they critically analyzed the feedback provided by the system before using it in their final drafts. In addition, half of the participants reported that they were less dependent on others thanks to AWE feedback. Finally, only 3 participants indicated that they felt more confident about writing thanks to AWE feedback. Some comments of participants about their perceptions of AWE feedback are as follows:

Student 2 (Grammarly Group)

"I think it is a useful program for people who want to learn languages or write academic writing. I think that it should be used in every language department, especially as it makes learning easier for learners."

Student 5 (Grammarly Group)

“Yes, I will use it because it makes it easier for me to spot my errors that I cannot detect. In this way, I correct my errors and learn.”

Student 8 (Grammarly Group)

“Yes, I have observed a change in my academic writing skill. I had errors that I overlooked in my previous essays. Now I'm writing flawlessly, thanks to Grammarly. In addition, it took a lot of time to find synonyms from the dictionary and select the more appropriate ones while writing, but now I can do this easily thanks to the program.”

Student 19 (Grammarly Group)

“In particular, I tried to change simple words and use more complex structures. I corrected my simple grammar and punctuation errors so I was not afraid to write long sentences thanks to AWE feedback.”

Student 13 (Grammarly Group)

“The AWE software saves time, allows me to use more diverse vocabulary, and helps me to write essays including fewer errors.”

Student 31 (ProWriting Aid Group)

“It enriches our writing by offering different words. Using different words in our essays is also important for our vocabulary stock.”

Student 25 (ProWriting Aid Group)

“Of course I consider using it in the future because I will not always have someone to get feedback from. Thanks to AWE software, I will have the chance to correct the errors I made without asking anyone.”

Student 21 (ProWriting Aid Group)

“It enabled me to use English more effectively. I think it is a useful program because it answers my questions quickly and instantly.”

Student 14 (ProWriting Aid Group)

“I think it is particularly effective in punctuation, spelling and thesaurus feature.”

Student 7 (ProWriting Aid Group)

“It is a very good program that interprets the essays we write in a computer environment without human assistance and gives feedback as if it were a teacher.”

4.1.5.2. Discussion of Learners’ Perceptions of AWE Use

Considering the results of the written opinion survey and interviews of Grammarly group, learners expressed their opinions regarding AWE use. First of all, learners put forth that AWE feedback was useful in writing classes. The majority of learners just expressed their opinions by using the word ‘useful’ without giving details; however, when the answers given to the questions of the survey were analyzed, this result may be explained by the fact that AWE feedback provides opportunities for learners to improve their language skills such as grammar, punctuation and vocabulary, and it enables learners to correct their errors themselves without needing someone else or consulting other sources. In addition, some students indicated that the opportunity of self-correction was another advantage of using AWE feedback in the writing process. A possible explanation for this might be that as learners corrected their errors themselves, they may be believed to feel successful; moreover, they were actively involved in their own learning process.

Learners also reported that they could understand their errors easily and learn from their errors thanks to AWE feedback, and these aspects were also regarded as the advantages of AWE feedback. Teacher or peer feedback may sometimes be ambiguous for the learners in that teachers are supposed to provide feedback for a number of papers of students, and peers might not be equipped with the necessary language knowledge to provide feedback. In addition, teachers may not focus on all the errors of learners as it necessitates to provide individualized feedback for each student. However, with AWE feedback, learners have the chance to learn at their own pace; thus, these factors addressed as advantages may explain that learners could understand their errors easily and learn from their errors since the system provided individualized feedback for those errors. The editing process is believed to take a great amount of time, for learners are to read their essays over and over again to spot their errors, and correction can also be challenging because learners may need to consult other people or sources.

Some of the participants noted that AWE feedback was time effective. This result is likely to be related to the decrease of time learners spent editing their written work. That is to say,

the time learners spent decreases considerably due to the fact that AWE system directly spots learners' errors and provides correction. Some participants emphasized that they enriched their essays thanks to AWE feedback. A possible explanation for this advantage might be that learners might be believed to use a variety of words thanks to the thesaurus function of AWE and to create more complex sentences without worrying about making errors since the system corrects erroneous sentences.

About another advantage of AWE software, some students reported that the system was user friendly. This result might be explained by the fact that the interface of the system is not complicated in that learners' essays take place on the left side of the screen, and the explanations are located on the right part of the page. All learners need to do is to click the corrections to adapt to their papers. Moreover, two students expressed that they had the opportunity to focus on context more. This might be due to the fact that learners do not have to focus on their errors regarding language use as AWE system provides feedback for the errors related to language use, and they might be believed to allocate their time on context more.

On the other hand, qualitative data provide some results which address the disadvantages of AWE feedback in Grammarly group. That is, the minority of the participants stated that the system was not capable of providing content-related feedback. A possible explanation for this might be that learners utilized the free version of Grammarly, and the free version of the software provides feedback for only limited areas. Thus, directly considering this as the lack of the system may not be proven; however, it can be stated for the free version that the system is not capable of providing feedback on the content of the written work of the learners. Another disadvantage pointed out by the minority of the participants is that the system provides inaccurate feedback sometimes. It seems possible that this result may be again due to using the free version of the system. However, it might also be stated that the system actually provides inaccurate feedback from time to time and needs improvement in its feedback provision.

Regarding the improvement in writing skills, learners in Grammarly group explained the areas of the language they thought they showed improvement. The feedback of AWE system is mainly on grammar, punctuation, spelling, and capitalization. Moreover, it has embedded thesaurus function that gives learners the opportunity to exchange words with their synonyms. Learners might be believed to need feedback on these areas, as these require the language learners to be equipped with the rules of grammar, punctuation, spelling, etc.

Besides, it is not surprising that learners could not correct some of their errors during the editing process, for they may lack the desired knowledge of these areas. Therefore, learners might be thought to demand support from their teachers, peers, or reference books.

Qualitative data represent that almost all of the participants in Grammarly group expressed that they improved their grammar, vocabulary use, and punctuation. There are several possible explanations for this result. First of all, learners were provided with corrections and explanations for their errors by AWE system. As stated in discussing the advantages, learners considered these explanations beneficial for their improvement in that they commented that they were able to understand their errors easily as the feedback was easy to comprehend; moreover, they noted that they could learn from their errors due to the fact that the feedback is not only related to correct the erroneous words and sentences but to provide explanations for the errors. In that vein, this result, namely the improvement in grammar, is not surprising since the learners corrected their errors themselves by being involved in their learning process and learned the rules of the language regarding the errors they made.

Another prominent improvement indicated by most of the students in Grammarly group was about vocabulary use. Learners may be reluctant to use dictionaries while constructing their texts as it may take a great amount of time and effort to find appropriate words; thus, they may tend to prefer the words they already know. However, it may be stated that using the same words repeatedly in the same text or not using academic words may affect the quality of the texts negatively. In that respect, learners had the chance to use the synonym of the words thanks to thesaurus function of AWE system, and learners did not have to consult other dictionaries as it was already in the system; that is, they had the opportunity to change the words at the same time that they corrected their errors. With that feature, it might be stated that not only do they use the synonymous words, but they may also improve their vocabulary stock in time as long as they continue to use the software.

Punctuation improvement was also addressed by the majority of the participants in Grammarly group. As it is well known, punctuation may be problematic especially when the learners prefer to construct compound, complex, and compound & complex sentences. Thus, this result could be explained by the fact that AWE software provided corrections for punctuation errors of the learners; however, when the system was analyzed, it was figured out that the system did not provide corrections for all punctuation errors in the free version but it did in the premium version. Still, learners may be believed to show improvement in punctuation use with limited provision of feedback.

Almost two-thirds of the participants in Grammarly group explained that they decreased the number of their overall errors they made on subsequent drafts. A possible explanation for this result might be that learners might have improved their knowledge regarding language use when they kept using AWE software, and this result is consistent with the learners' statement of learning from their errors. On the other hand, only a few of the students reported that they showed improvement in spelling. This finding was unexpected as it was seen when learners' first and final drafts were analyzed that the number of spelling corrections was significant. Nonetheless, learners might be thought that they did not attach importance to the spelling issue and regard it as an improvement even though they made a number of spelling corrections.

Learners in Grammarly group also made explanations about their beliefs of AWE use on written opinion surveys and interviews. One outstanding result represents that all of the participants were willing to use AWE software in their future studies. This result may be explained by looking into the advantages and improvements in writing skills. That is, learners indicated that the advantages of AWE use are more than disadvantages and that they improved their skills thanks to AWE feedback. Another possible explanation might be that learners always have the opportunity to consult AWE feedback whenever they need assistance for their written work. During the study, learners were given a lesson hour to use AWE feedback. It was observed that some students quickly edited their papers and spent the rest of their time on the Internet while others used the whole lesson for editing. Thus, learners were asked to explain whether their engagement with AWE feedback is enough or not. Almost all of the participants declared that they spent enough time with AWE feedback to correct their errors, and most of those noted that they critically analyzed the provided feedback before using it on their final drafts. Therefore, learners may be believed that they used critical thinking skills while using the software.

More than half of the participants reported that they became less dependent on others after they started using AWE software. This could be explained by the fact that they did not have to consult their teachers, peers, or other resources as much as they did before using the software. The reason for this might be attributed to the effectiveness of AWE feedback, for it supports the language learner during the editing process. Only some of the students addressed that they felt more confident about writing thanks to AWE feedback. This can be explained by the fact that learners could achieve better in language use and become independent thanks to AWE feedback when compared to their status prior to the study.

On the other hand, learners in ProWriting Aid group explained their perceptions of AWE use in written opinion surveys and interviews. That is to say, the qualitative data represent the aspects of AWE feedback learners considered as advantages. To start with, almost two-thirds of the participants stated that AWE feedback was useful in writing classes. Although they did not provide precise reasons, it might be stated that learners' consideration of AWE feedback as useful may be attributed to its positive effects on writing skills and to making learners more independent by giving them the chance of correcting their errors themselves by reducing the need for other sources. In that vein, some of the participants in ProWriting Aid group agreed that the opportunity of self-correction might be noticed as a prominent advantage of AWE feedback. This may be due to the fact that learners were content with their active involvement in the learning process. Almost half of the participants reported that they enriched their essays thanks to AWE feedback. It is difficult to explain this result as learners did not provide specific explanations, but it might be related to the variety of sentence structures and vocabulary use learners created with the help of AWE feedback.

Two other advantages were reported by some of the participants in ProWriting Aid group were that learners could understand their errors easily and learn from their errors. As stated above, teachers may not pay attention to all errors of the learners and provide detailed explanations on those errors for each learner, which might result in learners not comprehending their errors. However, AWE feedback focuses on even the tiniest errors of learners by providing explanations and corrections. Thus, AWE feedback might be believed to enable learners to learn at their own pace with its provision of clear and understandable feedback. To be able to write well-constructed texts, learners are required to concentrate and spend a great amount of time during both writing and editing, which might be demanding for students and even demotivate them towards writing. Regarding this, some learners indicated that AWE feedback decreased the time they put into editing due to the fact that it instantly provides feedback as soon as learners upload their texts. Moreover, some participants expressed that the system was user-friendly. This result could be explained by the fact that using some computer programs effectively may be challenging for some students; however, the interface of ProWriting Aid might be regarded as easy-to-use since learners' errors are underlined and correct answers are provided when learners click on the erroneous words.

The participants in ProWriting Aid group explained the disadvantages of AWE system as well based on their experiences during the study. The same disadvantages learners reported

in Grammarly group were put forth in ProWriting Aid group. Learners stated that the system does not provide content-related feedback, and it sometimes provides inaccurate feedback for the written work of the learners. Similar to Grammarly group, learners in ProWriting Aid group utilized the free version of the software; therefore, the lack of content-related feedback might be due to the limited functions of the free version. Moreover, regarding inaccurate feedback, it may be stated that it was not perpetual as only a few students reported it as a disadvantage, but it should be noted that the feedback function of the system might need to be developed to provide consistent and accurate feedback continuously.

With regard to improvement in writing skills, learners in ProWriting Aid group described the language areas they improved thanks to AWE feedback. Almost all of the participants expressed that they improved their punctuation, grammar, and vocabulary use when compared to their competence prior to the study. To begin with, the improvement of punctuation skills seemed to be prominent when the perceptions of the participants were taken into consideration. Learning to use punctuation effectively may take some time for the language learners due to the different usage from their mother tongue. Also, as learners create a variety of sentence structures, appropriate punctuation marks might change depending on those structures. Moreover, correct punctuation requires learners to employ a great deal of concentration not only while writing but also during the editing process. AWE feedback, on the other hand, instantly spots punctuation errors, or it suggests learners use appropriate punctuation when necessary. From this point of view, this result regarding the punctuation improvement may be explained by the fact that learners are directly exposed to the correct use of punctuation thanks to AWE feedback; moreover, as learners keep using AWE software, it can be believed to help learners learn how to utilize punctuation effectively in their written work. It could be stated when two systems are analyzed that feedback provision of ProWriting Aid on punctuation is relatively better than that of Grammarly. Some punctuation corrections provided by Grammarly in only the premium version have been found to be provided in the free version of ProWriting Aid. Thus, learners' focus on punctuation improvement becoming more in ProWriting group than Grammarly group might be due to this aspect.

Another remarkable improvement was on learners' grammar knowledge in ProWriting Aid group. This result is likely to be related to the main feature of AWE software, which is feedback provision on grammar. Moreover, another possible explanation is that learners could be believed to learn from their errors as they continue to use AWE software, which in

turn has led to an improvement in grammar. Some of the learners also pointed out that their spelling improved, and the number of errors they made decreased over time. Spelling, especially when students use technological devices while writing their texts, might be problematic for some students. Thus, this result is not surprising as learners' spelling errors are instantaneously corrected by AWE feedback, and it can be believed that feedback on spelling might have increased learners' attention on that aspect of language. In addition, it may be stated that the decrease in the number of errors might show that AWE feedback leads to learning.

Learners in ProWriting Aid group reported their beliefs regarding AWE use as well. All students except for 2 noted that they would continue to use AWE feedback for their following studies. It may be due to the fact that participants benefitted from AWE feedback for their written work. It seems reasonable to state this when the advantages of AWE feedback and its effect on writing improvement are taken into consideration. Learners might be believed to suggest this result as they were able to have immediate feedback and edit their papers themselves; in addition, the system's being user-friendly and its benefit to writing skill of the learners might also be regarded as the reasons for their willingness to utilize AWE feedback after the study. On the other hand, 2 participants who were not willing to use AWE feedback stated during the interviews that AWE feedback was not effective enough and should be improved. Thus, it might be stated that learners' willingness might be increased by improving the feedback quality of the software.

Most of the participants agreed that they spent enough time with AWE software to correct their errors, and the majority of those participants noted that they critically analyzed AWE feedback before implementing it directly on their final drafts. Thus, learners might be believed to use their critical thinking skills and actively involve in their learning process. Half of the participants indicated that they became less dependent on others thanks to AWE feedback. A possible explanation for this result may be that the need they demanded from their teachers and peers for mechanical errors declined as learners were provided feedback on their errors and had the opportunity to alter the words they used with the synonyms thanks to AWE feedback. Finally, only a few students expressed that they felt more confident about writing thanks to AWE feedback. This can be explained by the fact that learners might be believed to achieve the writing process themselves by correcting their errors themselves and to improve their writing skills thanks to AWE feedback, which might have increased their self-confidence.

CHAPTER V

CONCLUSIONS AND IMPLICATIONS

5.1. Conclusion

This study investigated the effectiveness of AWE feedback on Turkish EFL learners' writing achievement and the contribution of AWE feedback on their writing processes. The aim of the present research was to find out what kind of errors were corrected by Turkish EFL learners using AWE feedback. So as to determine the effects of AWE feedback on learners' writing achievement, learners' essays were collected and scored to compare groups with each other. Moreover, learners' first and final drafts they wrote during the experimentation process with AWE support were collected in order to categorize the types of errors they corrected using AWE feedback. The study also explored the effects of AWE feedback on Turkish EFL learners' motivation and self-efficacy in writing. To explore how AWE feedback affected learners' writing self-efficacy, a writing self-efficacy questionnaire was implemented. In addition, a written opinion survey was prepared, and semi-structured focus group interviews were carried out to figure out learners' opinions of AWE feedback. They included questions regarding the effects of AWE feedback on writing self-efficacy and writing motivation as well.

In this chapter, the results will be discussed in light of previous studies carried out to investigate AWE feedback in writing classes. Pedagogical implications and suggestions for further studies will be also presented.

Initially, the results of this very study with respect to the effect of AWE feedback on Turkish EFL learners' writing achievement will be presented and discussed concerning the literature. Secondly, the effects of AWE feedback on the writing motivation of learners will be presented and discussed referring to the related literature. Thirdly, the effects of AWE

feedback on the writing self-efficacy of students will be presented and analyzed based on the relevant literature. Fourthly, the errors learners corrected utilizing AWE feedback will be presented and discussed with reference to the literature. Finally, the opinions of Turkish EFL learners about the use of AWE feedback in writing classed will be presented and discussed with a closer look at the relevant literature.

This study investigated the effects of AWE feedback on Turkish EFL learners' writing achievement. In order to analyze the effects of AWE feedback on Turkish EFL learners' writing achievement, learners' papers were collected prior to and after the study to make a comparison between and within groups. Learners' written works were scored using a holistic rubric by two raters, and the SPSS (21.0) program was used to analyze the data. The holistic rubric included focus, content, organization, style, and conventions parts. The results indicated that AWE feedback did not contribute to the focus, content, and organization parts of learners' essays. That is, no significant difference was found between experimental and control groups regarding these aspects. Therefore, it might be noted that free versions of AWE software systems employed in this study were found to be inadequate in improving the focus, content, and organization of learners' essays. In particular, experimental group 2 decreased their focus scores. Therefore, it may be commented that students in that group might have devoted more effort on grammar, punctuation and vocabulary and held less interest in improving focus aspect of their essays.

Wang et al. (2012) emphasized that unlike traditional feedback provided by teachers or peers, AWE can be implemented into writing instruction independently and serve as an instant feedback source. However, AWE might not be totally regarded as a replacement of instructors' feedback, but it may still be utilized as a supplementary software with teacher feedback (Bai & Hu, 2017; Foltz, 2014; Shermis & Burstein, 2003). Thus, it might be noted that teacher feedback, especially on content, may complement the deficiencies of AWE feedback. On the one hand, the results indicated that experimental group 1 got higher scores with respect to vocabulary and structure varieties than experimental group 2 and control group; on the other hand, experimental group 2 outperformed the control group regarding vocabulary and structure varieties. This may show that learners benefited from the thesaurus function of AWE systems during their editing procedure. As for the comparison of experimental groups 1 and 2, it may be reported that experimental group 1 devoted more time to the vocabulary aspect of writing, which was also found when learners' first and final drafts were analyzed. Finally, the convention total scores of both experimental groups are

significantly higher than those of the control group. Thus, it may be concluded that AWE feedback on grammar, spelling, and mechanics was found to be efficient in promoting learners' writing achievement regarding these areas. It was hypothesized that use of AWE feedback made a significant difference on Turkish EFL learners' writing achievement. The findings regarding achievement tests scores confirmed the hypothesis which claims that AWE feedback has a significant effect on learners' writing achievement.

AWE systems are believed to be helpful for its feedback provision grammar and mechanics, but feedback on content can be challenging for them (Chukharev-Hudilainen & Saricaoglu, 2014; Ranalli et al., 2017). Moreover, AWE feedback is thought to encourage learners for revisions and self-edits; consequently, it enhances their writing achievement (Liao, 2016) and supports learners to create error-free sentences (Li, 2007). In a similar vein, it might be stated that participants in this study benefited from AWE feedback regarding grammar and mechanics. They are also believed to write texts including fewer errors and improve their writing achievement thanks to AWE feedback. Another advantage of AWE use for learners that deserves due attention is that learners can improve their word usage thanks to the thesaurus function embedded in the systems (Wang et al., 2012). Similarly, learners of this very study improved their vocabulary skills by utilizing that function by utilizing more sophisticated words in their subsequent drafts. That is, in addition to helping learners make fewer errors, AWE feedback might be believed to have a crucial role in developing learners' word stock.

This study confirms the results of the study conducted by El-Ebyary and Windeatt (2010) in that AWE systems help learners decrease the number of grammatical errors on multiple drafts, which may be considered as an improvement in grammar use as in this study. The findings of this study were also reported by Fang (2010) who also found that AWE feedback has an important role in promoting learners' writing achievement. Moreover, the results are consistent with those of Wang et al. (2012) who reported that the number of grammatical errors of learners declined on post-tests, which may indicate the effectiveness of AWE feedback on grammatical improvement of learners. In addition, a comparison of the findings with those of Li et al. (2015) confirms the effectiveness of AWE feedback on decreasing the number of grammatical errors. These results also reflect those of Liao (2016) who declared that learners made significant progress in grammar after utilizing AWE software system. It is encouraging to compare this figure with the one found by Li et al. (2017) who determined

that the number of errors learners made significantly decreased thanks to AWE feedback, which might reflect the effectiveness of AWE feedback on grammar.

Ghufron and Rosyida (2018) also employed Grammarly as AWE system and discovered that learners using AWE system performed better in writing tests; thus, it might be reported that the results of this study are in line with those of Ghufron and Rosyida (2018). Similar to this study, Ghufron and Rosyida (2018) also emphasized that Grammarly might be believed to be inefficacious in developing learners' content and organization. As for the Turkish context, Erdal-Bulut (2019) also reported similar results in that AWE feedback has positive effects on learners' writing achievement. These results are also in agreement with those obtained by Gençer (2019) who pointed out that AWE feedback might improve learners' grammatical and mechanical accuracy. However, this outcome is contrary to that of Wilson and Czik (2016) who found no significant differences in learners' writing achievement after utilizing AWE feedback.

This very study explored the effects of AWE feedback on Turkish EFL learners' writing motivation. The data respecting the effects of AWE feedback on Turkish EFL learners' writing motivation were gathered via written opinion surveys and semi-structured interviews. The analysis of qualitative data represented that AWE feedback affected Turkish EFL learners' writing motivation positively. The majority of the participants in the experimental groups indicated that their writing motivation improved thanks to AWE feedback. Learners also expressed the reasons why their writing motivation developed. When the factors affecting writing motivation are addressed, it might be stated that learners felt less dependent on others during their writing process. Moreover, they indicated that they had the opportunity to correct their errors themselves with AWE support. When these factors are taken into consideration, learners may be believed to succeed in writing without the support of others and to be actively involved in their own learning process.

Learners also commented that the writing process became easier for them. This may be explained due to the fact that as AWE systems provide instant and comprehensible feedback for learners' errors, the time and effort learners devoted to editing their essays were minimized. In addition, students explained that they could understand their errors easily, learn from their errors, made fewer errors; thus, it may be stated that AWE feedback might have a teaching role for learners. Besides, learners reported that they used more sophisticated words thanks to the thesaurus dictionary of the systems and improved their grammar and

punctuation. That is, AWE feedback might be believed to motivate learners towards writing when these factors are taken into consideration.

When the motivation factors are analyzed, it might be stated that motivating factors in groups can be considered as intrinsic motivation described by Deci and Ryan (1985) as intrinsic motivation is carrying out an action as the activity is intrinsically interesting and pleasing. Moreover, Deci and Ryan (2017) emphasized the importance of intrinsic motivation for learners' life-long learning. In that respect, using AWE software systems can be believed to foster the learning process of the students in the long term due to the fact that learners are thought to have the inner motivation and the feeling of success by completing the task themselves. In addition, Ushioda (2008) argued that learners who have intrinsic motivation tend to use problem-solving strategies. In a similar vein, learners employ problem-solving and critical thinking strategies during their engagement with AWE feedback via self-correction and by critically thinking on the accuracy of the feedback before implementing it in their essays.

This very study supports the findings of the study of Fang (2010) which employed *MyAccess* as AWE software and found that AWE fostered the writing motivation of the learners as in this very study. Moreover, these basic findings of this study regarding the effects of AWE feedback on writing motivation are consistent with the research of Wang et al.' (2012) showing that AWE feedback enhances learners' writing motivation. Wang et al. (2012) utilized *CorrectEnglish* AWE software in their study, and learners noted that their motivation towards writing developed after they used AWE feedback. This finding was also reported by Dikli and Bleyle (2014) which employed *Criterion* as an AWE system concluding that learners' AWE use may develop writing motivation.

These results reflect those of Li et al. (2015) who also found that learners became more motivated to write after employing *Criterion* as the source of AWE feedback. The results of this study are in agreement with those obtained by Wilson and Czik (2016) who utilized *PEG Writing Scholar* as AWE software in that they declared AWE feedback was found to have positive effects on writing motivation. Another study employing *PEG Writing Scholar* as AWE software took place in Turkey. The findings of this study are in accord with the recent study of Erdal-Bulut (2019) indicating that AWE feedback plays a pivotal role in enhancing the writing motivation of the learners. Consequently, it can be stated that even though the previous studies employed various AWE software systems in their studies, they

found similar results suggesting AWE feedback positively affects learners' writing motivation; that is, it is not limited to just one system.

The effects of AWE feedback on Turkish EFL learners' writing self-efficacy beliefs were investigated in this study. A writing self-efficacy questionnaire was implemented in both experimental and control groups as pre-test and post-tests to find out the effects of AWE feedback on Turkish EFL learners' writing self-efficacy. Furthermore, learners were also asked to express their opinions in written opinion surveys and during interviews with respect to AWE's effect on writing self-efficacy. The questionnaire was analyzed using SPSS (21.0) program. The result of the tests indicated a significant difference between experimental group 2 and the control group; however, no significant difference was found between experimental group 1 and other groups. Thus, according to quantitative data results, it might be stated that AWE feedback was found to be fostering writing self-efficacy only in experimental group 2.

On the other hand, when qualitative data were analyzed, it was figured out that most of the participants in experimental group 1 reported that their writing self-efficacy has developed thanks to AWE feedback. Therefore, it might be stated when two sources of data are taken into consideration that AWE feedback might be efficacious in enhancing learners' writing self-efficacy. Participants also explained the factors affecting their writing self-efficacy. Surprisingly, the factors affecting writing self-efficacy were found to be similar to those of writing motivation. That is, learners reported that they felt less dependent on others, made fewer errors, utilized more sophisticated words, enriched their essays, corrected their errors themselves, and improved their skills regarding punctuation, grammar, and vocabulary thanks to AWE feedback, which increased their writing self-efficacy. From this point of view, it might be commented that learners considered becoming an autonomous learner and improving language skills as the factors affecting writing motivation and writing self-efficacy positively. It was also hypothesized that use of AWE feedback made a significant difference on Turkish EFL learners' self-efficacy in writing. The findings with respect to self-efficacy tests scores validated the hypothesis which claims that AWE feedback had a significant effect on learners' writing self-efficacy.

Bandura (1986) noted the self-efficacy is "people's judgments of their capabilities to organize and execute courses of action required to attain designated types of performances" (p. 391). Thus, it might be noted that learners' capabilities regarding writing might have increased thanks to AWE feedback. Moreover, Wigfield and Eccles (1992) argued that

people's self-efficacy judgments may affect the activity types learners desire to take part in. Thus, learners may be believed to become more interested in writing since their self-efficacy increased. Schunk (1981) and Pajares (1996) claimed that learners' doubts about their capabilities may lead them to reduce the effort and time devoted to a particular activity. AWE feedback may be considered as a factor that dispels doubts of learners by enhancing their writing self-efficacy, for learners themselves correct the errors in their texts successfully with their capabilities.

Bandura (1991) argued that failures may discourage the individual. Thus, it might be stated that learners' having feedback from their teachers with lots of correction may be discouraging for them; however, as learners correct their own errors utilizing AWE feedback without any criticisms, this might be believed to prevent the feeling of failure. Bandura and Schunk (1981) emphasized the importance of setting sub-goals as a key factor to foster writing self-efficacy. Thus, learners might be believed to set their sub-goals such as making fewer errors on subsequent drafts, utilizing more sophisticated words, and learning language rules with the help of AWE feedback might be some of the reasons for the improvement in writing self-efficacy.

Pajares and Schunk (2001) put forward that learners who consider themselves less-competent than their peers may have a lower level of self-efficacy. Thus, when learners consult their peers for feedback, they might believe they are not as successful as their peers. However, AWE systems enable learners to improve the quality of their texts with its feedback provision by preventing social comparison and to allow learners to learn at their own learning pace. Regarding this, AWE feedback might be believed to affect learners' writing self-efficacy substantially.

When the relevant literature was reviewed, it might be stated to the best of the researcher's knowledge that studies focusing on the effects of AWE feedback on learners' writing self-efficacy are found to be scarce. This finding is consistent with that of Ghufron and Rosyida (2018) who found similar results regarding the AWE effect on self-efficacy. Moreover, as for the Turkish context, Erdal-Bulut (2019) employed PEG Writing Scholar in her research study and found out that utilizing AWE feedback may foster learners' self-efficacy in writing. Thus, it might be stated that the result of this study and that of Erdal-Bulut (2019) might indicate that AWE feedback might be efficient for increasing Turkish EFL learners' writing self-efficacy.

In this study, the kinds of errors learners corrected using AWE feedback were explored. To investigate what kind of errors learners corrected using AWE feedback, the content analysis method was employed. With that regard, students' essays written during the study were analyzed. Each student in experimental groups wrote 6 essays utilizing AWE feedback during the intervention. First and final drafts of essays were compared to investigate the changes learners made between drafts. In addition, lexical and structural varieties in learners' essays were also examined. When two experimental groups are compared regarding the types of errors they corrected using AWE feedback, it could be stated that participants in Grammarly group made more grammatical errors and corrections than ProWriting Aid group. Two groups focused on correcting article errors during their engagement with AWE systems. It could be noted that article use may be believed to be problematic for the participants of this study. Thus, both AWE systems can be believed to provide effective feedback for errors related to article use.

The other two categories of errors are related to tense and agreement errors. As stated, both systems do not provide content related feedback in free versions; thus, tense corrections of the systems are based on the structures of the sentences. As for agreement errors, participants in Grammarly group consulted AWE feedback more than participants in ProWriting Aid group. In addition, Grammarly can be believed to provide more proper corrections for agreement errors when the correction rates of each group are addressed. Learners in both groups also needed help for other grammatical errors such as pronoun, clause, infinitive-gerund, active-passive, modals in their texts. Thus, both systems might be believed to support learners in those areas by providing efficient feedback during the editing process of the learners. However, it should be reminded again that learners in both groups criticized the systems as AWE systems encourage utilizing active structures.

When it comes to the lexical variety of the groups, it might be indicated that participants in ProWriting Aid group made two times more exchanges of vocabulary items compared to participants in Grammarly group. A possible explanation for this might be that learners in ProWriting Aid group might have considered thesaurus function more user-friendly and efficacious than learners in Grammarly group; however, it should be stated that learners in Grammarly group also expressed in written opinion survey and interviews that they benefited from AWE system with its thesaurus function.

Similar to lexical variety results, learners in ProWriting Aid group also made more errors and corrections concerning mechanics than participants in Grammarly group. As discussed,

learners in both groups stated that they have not improved their spelling skills considerably even though the number of spelling errors is high. About capitalization, Grammarly was found to be not adequate with its feedback provision regarding this aspect of language in the free version. Finally, as for punctuation errors, ProWriting Aid seemed to provide more punctuation feedback in the free version than Grammarly; that is, Grammarly provided corrections for some punctuation errors only in the premium version.

In conclusion, it might be noted that learners in both groups benefitted from AWE systems remarkably by correcting their errors with regard to grammar, vocabulary, and mechanics of the language. Participants in Grammarly group might be believed to focus on grammatical corrections more, and participants in ProWriting Aid group may be thought to consult AWE feedback for increasing the vocabulary variety and correcting mechanical errors of their texts more than the participants of Grammarly group.

This study confirms the findings of Chen and Cheng (2008) who also found that learners benefited from AWE feedback regarding grammar, spelling, and punctuation similar to the result of this study. The similar results of this study were also reported by El-Ebyary and Windeatt (2010) who reported that participants of their study consulted AWE feedback for grammatical errors. Moreover, the result of this study is consistent with that of Wang et al. (2012) which represented that learners utilized AWE feedback for their grammar and spelling errors. Lavolatte et al. (2015) employed Criterion and Liu and Kunnan (2016) utilized WriteToLearn, and the findings of these studies address that the systems are sometimes incapable of detecting some grammatical errors; similarly, it was found in this study that AWE systems may not always spot grammatical errors, which might show that they need improvement for their feedback provision.

The findings of this study also accord with Li et al.'s (2015) earlier observations, which showed that learners needed AWE support for their grammatical errors. Similar to this study, Cavaleri and Dianati (2016) employed Grammarly in their study and correspondingly reported that learners benefited from AWE system regarding grammar. These results reflect those of Li et al. (2017) and Gençer (2019) who also found that learners made use of AWE system thanks to their feedback regarding grammar. Thus, considering the findings of previous studies and this study, it might be indicated that learners might benefit from AWE feedback with its feedback provision on grammar, mechanics, and word usage.

Finally, Turkish EFL learners' opinions about AWE feedback were explored in this very study. To figure out learners' opinions regarding AWE feedback, a written opinion survey including ten questions was prepared and implemented after the experimentation ended. In addition, the researcher conducted semi-structured focus group interviews with some of the participants in experimental groups. Qualitative data were analyzed employing the content analysis method. Regarding the learners' perceptions of AWE feedback, it may be stated that the advantages of AWE use outperform the disadvantages. That is, learners considered AWE feedback useful in writing classes; moreover, they believed that they were able to edit their papers themselves with their active involvement in the learning process. Besides, they asserted that they could understand their errors easily and learn from their errors thanks to AWE feedback, which might be considered as two major benefits of AWE use. Learners also addressed that the amount of time they employed for the editing process decreased considerably and also that the systems were user-friendly.

Regarding improvement in writing skills, participants in both groups put forth that their knowledge of grammar, punctuation, vocabulary use and spelling developed thanks to AWE feedback and that the number of errors they made decreased significantly. Their beliefs of AWE feedback were also found to be positive encouraging AWE use in writing classes. That is to say, almost all students in both groups declared that they would keep using AWE feedback for their written work. As for the final comment, AWE feedback helped learners to become independent learners by decreasing the need they expected from others. However, both groups criticized AWE systems as they did not provide context related feedback in the free version and as they provided inaccurate feedback sometimes, which might show that systems need improvement.

The result of this study regarding learners' perceptions of AWE use supports the study of Chen and Cheng (2008) in that learners found AWE feedback helpful in areas such as grammar, spelling, and punctuation like in this study. Moreover, it is encouraging to compare the result of this study with that found by El-Ebyary and Windeatt (2010) who commented that the opinions of the learners regarding AWE feedback were positive. Similar to the statements of the participants in this study, participants of their study also reduced the number of mechanical errors. The findings of this study also accord with the study of Fang (2010), which showed that learners who used *MyAccess* as AWE system held positive attitudes toward AWE feedback in writing classes; furthermore, the participants of that study also reported they would use AWE feedback in the future, which is similar to comments of

the participants of this study. This finding is consistent with that of Wang et al. (2012) who found that learners' perceptions of using AWE feedback were favorable.

The result of this study reflects those of Dikli and Bleyle (2014) and Li et al. (2015) who also found that the opinions of students regarding AWE use are positive. As in this very study, Cavaleri and Dianati (2016) employed *Grammarly* as AWE system and found similar results representing that the software is an easy-to-use one and that learners could learn grammar rules with the help of the explanations of the system. These results corroborate the findings of a great deal of the previous work of Li et al. (2017), Liao (2016), Zhang (2020) who found learners are in favor of utilizing AWE feedback in writing classes. In accordance with the present results, a previous study by Nova (2018) who used *Grammarly* as an AWE system has demonstrated that learners similar to this study reported that the system sometimes provides misleading feedback and does not provide context related feedback in the free version. In addition, these results are in agreement with O'Neill and Russell's (2019) findings which showed learners' perceptions of *Grammarly* are positive, for its feedback is detailed and prompt.

The findings of this very study are contrary to the study of Chen and Cheng (2008) in that learners considered the explanations of AWE feedback not informative. The participants in this study did not make any negative comments regarding the explanations of AWE systems. Similarly, the participants in the study of Dikli (2010) declared that the feedback of AWE system was more than necessary, long, and not always usable; however, learners in this study did not criticize AWE feedback regarding those points.

To conclude the findings of this study, it may be stated that AWE feedback might be regarded as efficient in promoting learners' writing achievement with respect to grammar, spelling, mechanics, and lexical variety. Learners may be believed to get benefitted from AWE feedback with its feedback provision on conventions and with its thesaurus function which encourages learners to utilize a variety of vocabulary items in their essays. The results also indicated that the use of AWE feedback might be advantageous for enhancing learners' writing motivation and writing self-efficacy. The improvement in students' overall writing performances, and the positive changes in students' task- and self-beliefs might be also regarded among the factors that fostered students' motivation and self-efficacy in writing. Moreover, learners held positive attitudes towards AWE use in writing classes. However, it should be stated that free versions of AWE systems were found to be inadequate in areas

such as focus, content, and organization parts of the essays. Thus, it can be stated that AWE feedback may be efficacious when implemented with teacher feedback.

It may be stated that AWE feedback lessened teachers' workload regarding providing feedback as it provided instant and consistent feedback on the surface-level errors. Most importantly, it should be stated that AWE feedback may be believed to improve learner responsibility and lead to autonomy (Liao, 2016). Similarly, Harvey-Scholes (2018) and Wang et al. (2012) also emphasized the role of AWE feedback for learner autonomy. In a similar vein, Chen and Cheng (2008) related the improvements in learner autonomy to the use of AWE systems in the process-based writing approach. Therefore, learners in this study might be believed to improve their autonomy, for they could accomplish the editing process with the help of AWE feedback without having to consult others for feedback. Learners' comments regarding being less dependent on others, self-correction and increase in writing self-efficacy may show the improvement of learner autonomy as well.

5.2. Pedagogical Implications

The results of this very study suggested the potential effectiveness of AWE feedback on Turkish EFL learners' achievement, motivation and self-efficacy in writing. Therefore, in terms of English language teaching and learning, this study has several pedagogical implications. First of all, it might be stated that AWE feedback has a potential role in improving learners' writing achievement. Moreover, learners may benefit from AWE feedback to correct their errors regarding grammar, punctuation, spelling and etc. and to improve their word stock thanks to the thesaurus function of the systems. Besides, it was found out that AWE feedback also has the potential for enhancing learners' writing motivation and self-efficacy. All these need due attention due to the fact that learners can be believed to take an active part in their own learning process thanks to AWE support, which might be an indication of learner autonomy.

Considering the heavy workload of teachers and growing class size, it might be stated that AWE feedback may ease teachers' writing instruction by providing instant and consistent feedback especially on the surface-level features of writing. Regarding the findings of this study, it might also be stated that even free versions of AWE systems may be preferred in writing classes, for they give learners an opportunity to make corrections for a variety of error types. In addition, learners mostly held positive attitudes towards using AWE feedback

which may show that implementing AWE feedback in writing classes will be encouraging for learners.

This study also revealed that free versions of AWE systems may not be totally adequate as an only source of feedback for all aspects of writing, as they lack providing feedback on content and organization of the texts. Furthermore, students may exert their effort to improve grammar, punctuation, and vocabulary aspects of texts and may ignore the crucial points such as content, focus and organization if AWE feedback is utilized as the main source of feedback. Thus, teachers and learners are suggested to be aware of the limitations of these AWE systems. Therefore, it can be stated that teacher+AWE feedback may be integrated together to enhance the effectiveness of both feedback types, which will enable learners to actively participate in learning and teachers to focus more on content and organization of learners' writings.

5.3. Suggestions for Further Research

This study was conducted with 91 EFL Turkish learners studying in the academic writing course at a preparatory school of a state university. As the results may not be generalized to the larger population, a further study with a larger sample size might be carried out to reach more reliable results. Moreover, a further study may investigate the effects of learners' proficiency level as for the benefits of AWE feedback. It may be also researched whether the explanations of AWE feedback are comprehensible for students with a lower level of proficiency. Therefore, further studies need to be carried out in order to validate the effectiveness of AWE feedback on learners' writing achievement.

This study employed the free versions of two AWE systems. Further studies may employ the free version and premium version of the same systems in different groups to explore the quality of feedback. A study focusing on the comparison of free and premium versions could indicate to what extent free versions of AWE systems are sufficient for providing feedback.

The duration of this study is also limited to three weeks of experimentation. Thus, a longitudinal study should be undertaken to explore the long term effects of AWE feedback on learners' writings. Also, such a study may investigate the decrease in the number of errors in subsequent essays of learners. That study may present promising results regarding the effects of AWE feedback on specific error types. Thus, teachers and students may be more aware of the strengths and weaknesses of AWE feedback.

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APPENDIX



Appendix A (Holistic Rubric)

Pennsylvania Writing Assessment Domain Scoring Guide					
Domain>	Focus	Content	Organization	Style	Conventions
Score	The single controlling idea made with an awareness of purpose about a specific topic.	The presence of ideas developed through facts, examples, anecdotes, details, opinions statistics, reasons and/or conclusion.	The order developed & sustained with & across paragraphs using transitions including introduction and conclusion.	The choice, use, and arrangement of words sentence structures that create author voice & tone.	The use of grammar, mechanics, spelling, usage, and sentence structure.
16 - 20	Sharp, distinct controlling point made about a single topic with evident awareness of purpose.	Substantial, specific and/or illustrative content demonstrating strong development & sophisticated ideas.	Meaningful arrangement of content with evident and/or subtle transitions.	Precise, illustrative use of variety of words & sentence structures to create consistent writer voice & tone appropriate to audience.	Evident control of grammar, mechanics, spelling, usage and sentence formation.
11 - 15	Apparent point made about a single topic with sufficient awareness of purpose.	Sufficiently developed content with adequate support, elaboration or explanation.	Functional arrangement of content that sustains a logical order with some evidence of transitions.	Generic use of variety of words & sentence structures that may or may not create writer voice & tone appropriate to audience.	Sufficient control of grammar, mechanics, spelling, usage, & sentence formation.
6 - 10	No apparent point but evidence of a specific topic.	Limited content with inadequate elaboration or explanation.	Confused or inconsistent arrangement of content with or without attempts at transition.	Limited word choice & control of sentence structures that inhibit voice and tone.	Limited control of grammar, mechanics, spelling, usage, & sentence formation.
1-5	Minimal evidence of a topic.	Superficial and/or minimal content.	Minimal control of content arrangement.	Minimal variety in word choice & minimal control of sentence structures.	Minimal control of grammar, mechanics, spelling, usage, & sentence formation.
0	Non- Scoreable -Is illegible i.e. includes so many indecipherable words that not sense can be made of the response. -Is incoherent i.e. words are legible but word order is so garbled that response makes no sense. -Is insufficient i.e. does not include enough to assess domains adequately -Is a blank paper.			Off-Prompt -Is readable but did not respond to prompt	

Appendix B (Writing Self-Efficacy Questionnaire)

Self-Efficacy in Writing Inventory

Dear Participant,

A questionnaire was presented below to measure your attitudes and perceptions towards EFL writing. Please read the questions and mark the most appropriate choice. I would like to thank you for your kind participation.

TALHA ALTUNTAŞ

Part I: Background Questionnaire

Your age: _____

Your Gender: Female (1) Male (2)

Class: _____

1= I cannot do it at all	2= I cannot do it well	3= I can do it	4= I can do it very well	
Statements				
	1	2	3	4
1. I can use the grammar rules that I learned in class easily and correctly.				
2. I can match style with topic easily. <i>E.g.</i> If I am asked to write an essay, I can use the appropriate conventions to write a good essay. When asked to write a story, I can write according to the conventions of story writing.				
3. I can express and support my opinion easily.				
4. I can choose and defend a point of view.				
5. I can write very-well organized compositions.				
6. I find it easy to start writing on a given topic.				
7. I can write grammatically correct sentences in my compositions.				
8. I can use a style that is appropriate to the task.				
9. When given a topic to write about, I can think of ideas quickly.				
10. I can write paragraphs that flow well.				
11. When writing a composition on a given topic, I find it easy to decide which style I should use. For example, if I am asked to write a report, I can use the appropriate conventions to write a report.				
12. When given a topic to write about, I can think of ideas easily.				
13. Although I occasionally make mistakes when writing, I generally write good compositions.				
14. I can use nouns, verbs, adverbs, and adjectives in the right position in a sentence.				
15. I can use punctuation correctly.				
16. I find it easy to include all the information that should be dealt within on any given topic.				
17. I can locate and use suitable sources of information for any writing topic.				
18. I can write error-free sentences in my compositions.				
19. I can write coherent compositions.				
20. I can edit my compositions and correct mistakes in punctuation, capitalization, paragraph structure.				
21. When given a topic to write about, I can think of ideas quickly.				

Appendix C (Written Opinion Survey for Experimental Groups)

Aşağıdaki sorular çalışma sürecinde kullanmış olduğunuz program (Grammarly / ProWritingAid) ile ilgili düşüncelerinizi öğrenmek amacıyla hazırlanmıştır. Vereceğiniz cevaplar gizli kalacak olup sadece çalışma için kullanılacaktır. Teşekkür ederim.

Talha ALTUNTAŞ

1. Grammarly / ProWritingAid hakkında ne düşünüyorsunuz?

.....
.....
.....
.....

2. Kullanım öncesi ve sonrası akademik yazma becerinizde herhangi bir değişiklik gözlemlediniz mi? Varsa nelerdir?

.....
.....
.....
.....

3. Uygulama öncesi ve sonrasını karşılaştırdığınızda yazma motivasyonunuzda ne gibi değişiklikler oldu? Kullanmadan önce yazmaya karşı daha motivasyonlu muydunuz? Ya da kullandıktan sonra yazmaya karşı olan motivasyonunuz arttı mı?

.....
.....
.....
.....

4. Uygulama öncesi ve sonrasını karşılaştırdığınızda yazma öz yeterliğinizde ne gibi değişiklikler oldu?

.....
.....
.....
.....

5. Çalışma sonrası Grammarly / ProWritingAid uygulamasını kullanmayı düşünür müsünüz?
Neden evet/ Neden hayır?

.....
.....
.....
.....

6. Grammarly / ProWritingAid kullanırken hangi tip hatalarınızı düzelttiniz?

.....
.....
.....
.....

7. Grammarly / ProWritingAid kullanım süresi boyunca, programı kullanırken yeterince zaman harcadınız mı? Yoksa aldığınız dönüt(feedback) ün üstüne eleştirel düşünmeden direkt düzeltip düzeltilmiş versiyonu (second draft) teslim mi ettiniz?

.....
.....
.....
.....

8. Sizin için Grammarly / ProWritingAid programının pozitif yönleri nelerdir?

.....
.....
.....
.....

9. Sizin için Grammarly / ProWritingAid programının negatif yönleri nelerdir?

.....
.....
.....
.....

10. Sorularda yönetilmeyen fakat Grammarly / ProWritingAid ile ilgili eklemek istediğiniz hususlar nelerdir?

.....
.....
.....
.....



Appendix D (Screenshots of ProWriting Aid)

The screenshot shows the ProWriting Aid interface with the Grammar Check panel open on the left. The main text area contains a paragraph about motherly teachers and another about distant teachers. The Grammar Check panel shows 8 grammar issues and 7 spelling issues.

Grammar Check

- grammar 8 issues found
- spelling 7 issues found

Grammar Check ABC
Checks your text for grammar errors and potential word mis-use.
[More about this report](#)

Core Repeats Structure Readability

First type of teacher according to their behaviours are motherly teachers. Motherly teachers always behave supportive. If a student experiences a hard situation, motherly teachers tries to help the student with his/her words. For example, a student in front of the class does not sure about his /her ideas and needs help to hnder the others' laughs and acrimonious words, motherly teachers are always there. Also, motherly teachers are merciful. A student who did a wrong thing and understood his/her mistake and if the problem is not a big deal, the teacher forgives the student easily like our mothers. In addition, the motherly teachers are the person who reminds you something that you do not care much but it is actually important. For instance, the teaches remind you to take your belongings when you are going or the weather is cold and you did not wear your coat, the teacher warns you about to wear like your mother did in the morning. Contrast to this teacher type, we have also distant teachers.

Distant teachers are really different from motherly teachers. Distant teachers does not care about your personal life so much, they are more focused on your lessons, your participation to class and your grades. Distant teachers do not listen yours excuses. you should be careful about your assignments, you should give your assignments on time not to experience a bad situation with your teacher. also, you should participate the class you can not say i was not at the class when you were giving this assignment. Moreover, distant teachers' talking style is more formal. They organize the sentences properly and chooses the words carefully. when you are talking with the teacher, you can feel the walls of around her/him.

The screenshot shows the ProWriting Aid interface with the Thesaurus Check panel open on the left. The main text area contains a paragraph about motherly teachers and another about distant teachers. The Thesaurus Check panel shows 43 Verbs, 57 Nouns, 20 Adjectives, and 8 Adverbs.

Thesaurus Check

- 43 Verbs
- 57 Nouns
- 20 Adjectives
- 8 Adverbs

Thesaurus Check

Core Repeats Structure Readability

cool
frosty
raw
bitter
wintry
bleak
icy
snowy
chill
crisp

school, we learn so much thing about different ments are "teachers". Teachers are the key to reach behaviours to students. We can classify the teachers nts, which are motherly teachers and distant

ours are motherly teachers. Motherly teachers always tuation, motherly teachers tries to help the student f the class does not sure about his /her ideas and ous words, motherly teachers are always there. did a wrong thing and understood his/her cher forgives the student easily like our mothers. In reminds you something that you do not care much going or the weather is cold and you did not wear your coat, the teacher warns you about to wear like your mother did in the morning. Contrast to this teacher type, we have also distant teachers.

Distant teachers are really different from motherly teachers. Distant teachers does not care about

The screenshot shows the ProWriting Aid interface displaying Document Scores and Document Statistics. The Document Scores section shows Overall Score (45), Grammar (32), Spelling (45), Style (59), and Terminology (N/A). The Document Statistics section shows Word Count (419), Sentences (27), Paragraphs (4), Characters (2,046), and Characters With Spaces (2,545).

Document Scores (Scores out of 100 for key document areas)

45	32	45	59	N/A
OVERALL SCORE	GRAMMAR	SPELLING	STYLE	TERMINOLOGY
👍 / 100	👍 / 100	👍 / 100	👍 / 100	/ 100

Key Actions

- A high "glue index" suggests you're using lots of filler words. Try reducing these. Look at the sticky sentences section below for more specific guidance.

Document Statistics (The key statistics about your document)

419	27	4	2,046	2,545
WORD COUNT	SENTENCES	PARAGRAPHS	CHARACTERS No Spaces	CHARACTERS With Spaces

Appendix E (Screenshots of Grammarly)

The screenshot displays the Grammarly interface for an untitled document. The main text area contains two paragraphs of text with several words underlined in red, indicating spelling or grammar issues. A large, semi-transparent watermark 'WYK' is overlaid on the text. The top of the interface shows a navigation bar with a back arrow and a menu icon. Below the text is a rich text editor toolbar with options for bold, italic, underline, heading, link, list, and text color. The word count is shown as 417 words.

Write with Grammarly

Add a title. We hope you're well!

Every person goes to school in a period of their life. At school, we learn so much thing about different subjects. To learn something the most important elements are "teachers". Teachers are the key to reach information. in addition, every teacher has different behaviours to students. We can classify the teachers into 2 groups according to their behaviours to students which are motherly teachers and distant teachers.

First type of teacher according to their behaviours are motherly teachers. Motherly teachers always behave supportive. If a student experiences a hard situation, motherly teachers tries to help the student with his/her words. For example, a student in front of the class does not sure about his /her ideas and needs help to hnder the others' laughs and acrimonious words, motherly teachers are always there. Also, motherly teachers are merciful. A student who did a wrong thing and understood his/her mistake, and if the problem is not a big deal, the teacher forgives the student easily like our mothers. In addition, the motherly teachers are the person who reminds you something that you do not care much but it is actually important. For instance, the teaches remind you to take your belongings when you are going or the weather is cold and you did not wear your coat .the teacher warns you about to wear like your mother did

417 words

Untitled document

every person goes to school in a period of their life. At school, we learn so much thing about different subjects. To learn something the most important elements are "teachers". Teachers are the key to reach information. in addition, every teacher has different behaviours to students. We can classify the teachers into 2 groups according to their behaviours to students which are motherly teachers and distant teachers.

First type of teacher according to their behaviours are motherly teachers. Motherly teachers always behave supportive. If a student experiences a hard situation, motherly teachers tries to help the student with his/her words. For example, a student in front of the class does not sure about his /her ideas and needs help to hnder the others' laughs and acrimonious words, motherly teachers are always there. Also, motherly teachers are merciful. A student who did a wrong thing and understood his/her mistake, and if the problem is not a big deal, the teacher forgives the student easily like our mothers. In addition, the motherly teachers are the person who reminds you something that you do not care much but it is actually important. For instance, the teaches remind you to take your belongings when you are going or the weather is cold and you did not wear your coat .the teacher warns you about to wear like your mother did

417 words

All alerts

- CONCISENESS
 - in-addition → **also** **besides**
 - The phrase **in addition** may be wordy. Consider changing the wording.
 - Learn more
- behaviours - Change the spelling
- behaviours - Change the spelling
- First - Change the article
- behaviours - Change the spelling
- supportive - Change the adjective
- tries - Change the verb form

Hide Assistant

Overall score **29**
See performance

Goals
3 of 5 set

All alerts

Correctness
28 alerts

Clarity
Mostly clear

Engagement
Bland

Delivery
Just right

Premium
Advanced alerts

Get Expert Writing Help

Plagiarism

hard situation, motherly teachers tries to help the student with his/her words. For example, a student in front of the class does not sure about his /her ideas and needs help, to hinder the others' laughs and acrimonious words, motherly teachers are always there. Also, motherly teachers are merciful. A student who did a wrong thing and understood his/her mistake, and if the problem is student easily like our mother person who reminds you something actually important. For instance, when you are going to school, you should bring your belongings when you are going to wear your coat, the teacher in the morning. Contrast to the teachers.

Distant teachers are really distant teachers does not care about you. If you are not focused on your lessons, you will be bored. Distant teachers do not listen to your assignments, you should give your assignments on time not to experience a bad situation with your teacher. Also, you should participate

Synonyms

1. Inaccurate

crazy **incorrect** **faulty**
perverse **mistaken**

2. Immoral

wicked **naughty** **base** **evil**
corrupt

3. Referring to a side to be kept from view

back **reverse** **opposite**
inside **obverse**

Appendix F (Consent Form)

Consent form prepared for the participants of the study

RESEARCH CONSENT FORM

Name of Researcher(s)
Talha Altuntaş
Title of study
The Effectiveness of Automated Writing Evaluation as Self-editing Tools and Their Effects on Learners' Writing Achievement, Motivation and Self-Efficacy in Writing

Please read and complete this form carefully. If you are willing to participate in this study, ring the appropriate responses and sign and date the declaration at the end. If you do not understand anything and would like more information, please ask.

- I have had the research satisfactorily explained to me in verbal and / or written form by the researcher. **YES / NO**
- I understand that the research will involve: (*analysis of assignments, questionnaires and interview*) **YES / NO**
- I understand that I may withdraw from this study at any time without having to give an explanation. This will not affect my future care or treatment. **YES / NO**
- I understand that all information about me will be treated in strict confidence and that I will not be named in any written work arising from this study. **YES / NO**
- I understand that any audiotape material of me will be used solely for research purposes and will be destroyed on completion of your research. **YES / NO**
- I understand that you will be discussing the progress of your research with others at Sivas Cumhuriyet University **YES / NO**

I freely give my consent to participate in this research study and have been given a copy of this form for my own information.

Name & Signature:

Appendix G (Learners' Corrections Made Utilizing AWE Systems)

Students' corrections made utilizing Grammarly

Tense

1. you didn't ~~heard~~ hear it
2. As we have ~~understand~~ understood
3. individual sports ~~are~~ look tedious
4. Clothing ~~is~~ also protects the human body
5. I have never ~~forget~~ forgotten that event.
6. Most of the students ~~are~~ suffer from

Agreement

1. It ~~become~~ becomes only thanks to teachers
2. She ~~start~~ starts to tell
3. Each of them ~~represent~~ represents a different idea
4. each of them ~~are~~ is important
5. While some ~~costs~~ cost us a year
6. I am not a person who ~~hate~~ hates

Article

1. Because **the** development of the world
2. ~~the~~ another one is informal clothing.
3. to cover **the** human body
4. but it is ~~a~~ an inevitable situation
5. you will notice **an** enormous difference
6. According to ~~a~~ research

Pronoun

1. In front of ~~its~~ it,
2. such as ~~it's~~ its comfort
3. ~~us~~ our stress
4. because of ~~it's~~ its nature
5. ~~It's~~ Its chief is my mother
6. ~~It~~ Its color

Infinitive-Gerund

1. they do not want ~~to~~ their students **to** get low marks
2. Teacher tends to ~~chese~~ choose their favorites
3. The main purpose of Twitter is to be aware of the current events
4. they make us ~~to~~ think

Modals

1. we can ~~divided~~ divide into two parts
2. Nobody could ~~took~~ take
3. She could ~~did~~ do
4. I might ~~playing~~ play computer games

Comparative

1. team sports are ~~more easy~~ easier than individual sports
2. you can be ~~more cool~~ cooler
3. ~~more calm~~ calmer
4. to look ~~more thin~~ thinner.

Verb

1. Teachers ~~affect~~ influence our lives deeply
2. There are a lot of things which ~~annoy~~ bother you
3. it seemed easier than I ~~thought~~ estimated
4. you should ~~find~~ look for a special place
5. This place ~~attracts~~ catches your attention

Noun

1. Such teachers have a high degree of ~~influence~~ impact on our language ~~development~~ improvement.
2. It is an excellent ~~option~~ opportunity for them
3. Because of ~~anxiety~~ stress.
4. The ~~hall~~ exam room
5. It affects my ~~concentration~~ attention

Linking Words

1. ~~Besides~~ Furthermore, he doesn't warn students a lot
2. ~~In addition~~ Also, we feel relaxed
3. ~~Thus~~ Therefore, you should find
4. ~~Besides~~ Additionally,

5. ~~For example~~ For instance

Adverb

1. They behave ~~tolerant~~ tolerantly toward students
2. We ~~often~~ frequently see teachers
3. ~~Undoubtedly~~ Unquestionably
4. There were ~~almost nearly~~ approximately
5. ~~Very~~ extremely fresh

Adjective

1. the most ~~important~~ significant among them.
2. Like everyone, I was so ~~excited~~ thrilled
3. the luxurious ~~big~~ huge building
4. black tiny **disgusting** mosquitoes
5. Even a very ~~small~~ tiny detail
6. ~~handsome~~ charming character

Spelling

1. ~~Furtermore~~ Furthermore
2. ~~marvellous~~ marvelous
3. with ~~flovers~~ flowers
4. ~~elourful~~ colorful
5. with ~~eoffe~~ coffee

Punctuation

1. First of all, he is more attractive
2. Also, students prefer the teacher who sincere
3. Therefore, this exam makes us nervous
4. In our daily lives,
5. However, some people

Students' corrections made utilizing ProWriting Aid

Tense

1. Money makers ~~are~~~~does not~~ do not
2. this relation among them ~~became~~ becomes
3. individual sports ~~are~~ look tedious
4. The groom's brothers ~~are~~ also come there

Agreement

1. it also ~~give~~ gives
2. because no one ~~have~~ has to be same
3. Each person ~~have~~ has to
4. each of them ~~are~~ is important
5. The red carpet with hand-woven colorful motifs ~~evokes~~ evoke the past I am not a person who ~~hate~~ hates
6. My mother ~~were~~ was drinking
7. She also ~~have~~ has good personal characteristics.
8. I hate people who ~~loves~~ love to talk about themselves

Article

1. but it is really ~~a~~ an entertaining activity
2. during ~~the~~ winter holiday
3. In addition, if you want to be ~~a~~ successful person
4. The final exam of the preparatory class was ~~the~~ one of the most important exams
5. all people have ~~a~~ different feelings
6. A giraffe with ~~a~~ very big ears

Pronoun

1. that will make ~~you~~ your winter holiday
2. ~~This~~ These days
3. For ~~this~~ these reasons,
4. ~~it's~~ its walls

Infinitive-Gerund

1. ~~make~~ making a snowman will be an entertaining activity.
2. I forced myself to ~~focusing~~ focus on the questions
3. He makes me ~~to~~ hate more
4. They start to ~~cooking~~ cook.

Modals

1. the students ~~fail to~~ cannot understand
2. We can ~~divided~~ divide the leisure
3. they can ~~watching~~ watch TV
4. We may not ~~chese~~ choose our friends
5. Everyone can ~~spent~~ spend

Comparative

1. If you go with a group, it would be ~~more funny~~ funnier.
2. learn to be ~~more brave~~ braver

Verb

1. those who ~~make distinction~~ distinguish
2. the teachers who ~~behave~~ act
3. it also ~~provide~~ gives
4. to ~~become~~ develop into strong individuals
5. which I ~~mentioned~~ pointed out

Noun

1. in ~~society~~ community
2. Another ~~example~~ illustration is that
3. some ~~characteristics~~ aspects
4. Your ~~sadness~~ grief
5. my ~~strain~~ anxiety

Linking Words

1. ~~So~~ Therefore , we can classify teachers
2. because ~~of~~ they live outside
3. In addition **to** these,
4. **In addition**, if you want to be a successful person
5. **Furthermore**, the exam was hard for me
6. ~~In~~ **On** the other hand
7. ~~As a result~~ **In conclusion**

Adverb

1. This contributes ~~greatly~~ notably to the success of the students.
2. teachers are ~~really~~ remarkably different from
3. Education has ~~a very~~ an extremely important place in our lives.

4. Despite her age, my mother is a ~~really~~ truly charming woman

Adjective

1. Having a ~~sincere~~ trustworthy
2. is a ~~good~~ an efficient way
3. in a ~~bad~~ way an impulsive manner
4. ~~strict~~ authoritarian teachers
5. more ~~enjoyable~~ satisfying

Spelling

1. ~~somehings~~ something
2. For every ~~assignment~~ assignment
3. Money ~~makres~~ makers
4. supportive ~~relationship~~ relationship
5. ~~activites~~ activities
6. ~~Cheere~~ cheer up
7. a physical ~~activityy~~ activity
8. ~~eostum~~ costume

Punctuation

1. For every assignment they give,
2. much little, but
3. On the other hand,
4. Also, they use
5. When it comes to indoor activities,
6. In spite of these characteristics, what I admire

Appendix H (Sample Essays Written Utilizing AWE Systems)

PLACE THAT LEADS TO PEACE

Have you ever visited a peaceful place once in your life? There are some places that you can feel peaceful on the earth, so this place is also one of them. On a lovely summer day, a place called “Delta park Neeltje Jans” captivated me with its spectacular atmosphere, and I even remember the smallest details of that wonderful remarkable place.

Imagine a place full of fresh air and amazing incredible sea fragrance which is enough to carry away you from your oppressive life into a new unique world. Big white windmills which are rotating spinning with the wind breeze makes you feel like you are just a little being on this huge world. Sounds of the sea waves hitting the wall will make you face with your sweet memories remembrances. Moreover, gray grey color of the sea will remind you of your memories' memories' dark side. Even though they are depressing distressing, you will still smile because of the place's place's great atmosphere. Moreover Furthermore, long and wide ships which are coming from far away will strengthen the waves, so you will feel the water droplets hitting your face, and your soul will refresh. On the other hand, some strange voices will attract your attention, which belongs to the seals. Seals' Seals' mirror-like eyes will let you fall in love with them, and you will become more addicted to their enchanting movements. Their childlike smiles will make you remember of your childhood days, which was more peaceful.

Thinking about this place is also enough to relax soften you. Whenever I think about this place, it feels like stepping into a wonderland which takes you far away from world's difficulties world's pressures. Having such a beautiful magnificent place in your mind is a great way to find discover peace.

THE PERFECT PLACE

The idea of finding a perfect place has been a great question and dream for human kind. Thanks to this dream humans have built many places such as sanctuaries, gardens, castles. Some of these places were built to please gods, some of them to make a loved one happier, but in the end most of these places were the ~~cocrete~~ concrete proof of people's desire for a perfect area that they can go, and feel as if they were really a part of this crazy world. However, I have always thought that those places are just buildings which had stories, but I have never thought a place could have proven me wrong in massive ways. Place which proven me wrong is Gaziantep Castle. That castle has ~~amazed~~ astounded me in many ways both because of its great history and because of every little detail I have seen there.

Before you even enter the castle, the first thing you would see is the great features that are sitting right at the middle of the city. Gorgeous structure of the castle looks like the time around that place has somehow stopped at the war times. The next thing you would see is the ~~beautiful~~ magnificent Turkish flag on the top of the castle. The greatness of a Turkish flag that is touching the sky makes me remember how people of Gaziantep's saved our city from French soldiers. When you step in the yellow stone road which once Gaziantep's young soldiers ran and died there, you can feel the love for a city. After you walk through the round stone gates of the castle, the first thing you probably notice will be the cold air which is greeting and honoring you. Because of the oldness of the castle, you will also feel the dust that is running in the halls of the castle as if they were the young ~~soldiers~~ souls. There will be a red carpet that will guide you during your walk in the castle. As you walk, you will see the statues of generals, captains and soldiers that played a great role in the ~~salvation~~ liberation of Gaziantep. Moreover, there will be speakers which will tell you the story of those people, and you can also see the guns that those soldiers used during the war. You can also see little windows and holes that opens to little rooms and ~~secrets~~ secret passages, those places are usually closed because due to castles' oldness, some rooms and secret passages are collapsing. If you try to shout, you will hear your ~~voice's~~ little echoes, which may sound like some ghosts are responding. On the other hand, when you touch the walls, your hands will be covered in grey dust, but in the ~~mean time~~ meantime you will feel the coldness as if you are touching the furious thoughts of young ~~Sehit~~ kamil.

In ~~coclusion~~ conclusion, Gaziantep Castle is very important to me because of its both ~~histoy~~ history and its beautiful ~~stucture~~ structure, and I ~~belive~~ believe anyone who will see the beautiful castle will love the castle. If you do not have a special place that has a great place in your heart that does not mean your whole live will be that way, it means you just do not have enough experience in your life.



GAZİLİ OLMAK AYRICALIKTIR..