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Investigating the Effect of Automated Writing Evaluation on EFL Learners' Writing Accuracy:

The Case of Master Students at Biskra University.

Dissertation submitted to the Department of English Language and Literature

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Declaration

I, Fatima Ezzahra SBAA, do hereby declare that this submitted work is my original work and has not previously been submitted for any institution or university for a degree. I also declare that a list of references is provided forward indicating all the sources of the cited and quoted information. This work was certified and completed at Mohammed KHEIDER University of Biskra.

Algeria

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Signature:

Dedication

This study is dedicated to my beloved parents

To my sister and brothers

To family and friends

And to my precious one

Thank you for your endless love and support

Acknowledgments

I would like to express my gratitude to all the teachers who put their faith in me and urged me to do better, thank you.

Abstract

The effect of Automated Writing Evaluation feedback has been the subject of heated debate for over two decades. Research on the effectiveness of computer-generated feedback on writing proficiency in general and writing accuracy in particular yielded nothing more than contradicted and inconclusive findings. To this end, the present study employs a mixed-methods approach to exploring the short-term effects of the automated writing evaluation feedback through ProWritingAid on EFL students' writing accuracy at the Department of English language and literature at Biskra University. The current study also sought to describe students' and teachers' attitudes towards the use and implementation of automated writing evaluation software and feedback. The results obtained from the pre-test and post-test revealed that the use of ProWritingAid has an overall positive effect on students' short-term writing accuracy. Moreover, the findings from the teachers' semi-structured interviews and students' post-treatment semi-structured questionnaire revealed their perceptions and confirmed the potential benefits of automated writing evaluation feedback as a writing assistant and a tool to help EFL students improve their writing accuracy. As a result, academic writing instructors are recommended to encourage the implementation and use of automated writing evaluation software inside and outside the classroom.

Keywords: Automated Writing Evaluation, automated writing evaluation software, EFL students, ProWritingAid, Writing Accuracy.

List of Abbreviation and Acronyms

AWE: Automated Writing Evaluation

CALL: Computer Assisted Language Learning

CF: Corrective Feedback

EAP: English for Academic Purposes

EFL: English as a Foreign Language

ELT: English language Teaching

ESL: English as a Second Language

WCF: Written Corrective Feedback

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General Introduction

INVESTIGATING THE EFFECT OF AWE FEEDBACK

Writing is one of the pillars for building a successful academic career. Mastering the craft of writing not only shows that the writer has a full grasp of the linguistic structure of the language but also that the s/he is able to communicate their knowledge and ideas most effectively.

Mastering writing, however, is not an easy task; especially for English foreign language learners due to the complexities inherent to this productive skill. Despite the large body of research on English as a foreign language (henceforth, EFL) writing teaching and learning, teachers find it rather challenging to develop a writing course that targets all of the learners' learning needs and objectives. To resolve this problem, writing instructors are expected to assist, evaluate, and provide feedback to learners throughout the process of writing production.

The provision of feedback as a pedagogical practice in EFL writing teaching has been a topic of a prolonged dispute with scholars and researchers taking divergent stances. It is nonetheless noteworthy that feedback is a necessary and an 'inevitable' teaching strategy through which teachers can help guide, assist, criticise, and evaluate EFL students on both content and form aspects of their written compositions (Hyland & Hyland 2006, Huang, Li, et al., 2020). While content-based feedback is essential for fostering EFL learners' higher-order thinking skills such as evaluation, analysis, synthesis of data, and other cognitive and metacognitive abilities, form-based feedback is also of paramount importance because grammar accuracy is much needed to achieve academic success.

Besides teacher and peer feedback, automated writing evaluation (henceforth, AWE) is increasingly being used by learners as a pedagogical tool to help them create clearer, more accurate pieces of writing. AWE software provides both summative and formative feedback by giving an overall score of the written composition and highlighting or marking erroneous forms, followed by corrections and explanations. The existing AWE

systems mainly provide feedback on lexico-grammatical aspects of texts such as spelling, grammar, punctuation, sentence structure, style, and word choice. Although being denounced as promoting formulaic and mechanical writing (chen & cheng, 2008), AWE feedback has the potential to unburden teachers' heavy workload of marking and correcting surface-level errors of written assignments (e.g., essays) and focus more on content evaluation.

Research on AWE feedback suggests that computer-generated feedback has potential benefits and harms on students' writing quality; therefore, this study attempts to investigate the effects of AWE feedback on EFL learners' writing accuracy, especially on aspects of grammar and mechanics. It also aims to identify both teachers and students' perceptions and attitudes towards the use and effectiveness of AWE feedback for improving writing accuracy.

1. Statement of the Problem

Writing is deemed a key element of students' academic English development (Dikli & Bleyle, 2014). The abundance of research on writing instruction however does not make it any easier to be taught or learnt. In the EFL context, writing is an even more daunting skill to be mastered as it necessitates complex competencies, namely linguistic knowledge of the target language, content knowledge, higher-order thinking skills (analytical skills, idea generation, concept formation, etc.), as well as time and effort.

Relevant to research on writing instruction, feedback on writing seems to be a subject of heated debate. The conflicting findings and views on feedback may be attributed to the heterogeneity of research done where different research methods, different contexts, different forms and purposes of feedback may all affect its functionality (chen & cheng, 2008). Feedback, nonetheless, remains an indispensable aspect of EFL writing

development because it diagnoses and identifies learners' weaknesses and helps them overcome them.

Based on the researcher's experience as a master's student at the University of Biskra, we observed that master students face serious language problems relating to accurate grammar, spelling, and punctuation exhibited in their writing productions. These students are unsatisfied with the amount of feedback they receive from their writing or academic writing teachers as it neither suffixes with their learning needs nor does it help them identify their strengths and weaknesses to perform better in the future. Restricted by time and heavy workload, writing instructors usually provide limited personalised content-based oral or written feedback in the form of comments, and little to no grammar-based feedback.

While writing instructors at Biskra University promote peer feedback and writing workshops to supplement traditional teacher feedback, they oftentimes ignore the role of computer-delivered feedback. Research on automated feedback (also known as Automated Writing Evaluation AWE) suggests that formative feedback provided by AWE software could positively affect students' writing performance and grammar accuracy thanks to its immediate feedback (Dikli & Bleyle, 2014). These studies set forth that AWE feedback must be perceived as complementary to teachers' feedback as opposed to being exclusively relied upon.

To our best knowledge, no research has yet addressed AWE feedback as a writing evaluator in the Algerian context. To this end, the present study aims to fill this gap by investigating how AWE feedback through ProWritingAid affects students' essay writing accuracy.

2. The Variables in this Study

The main variables that will be under study are:

- The independent variable: AWE feedback on writing
- The dependent variable: Essay writing accuracy

3. The Research Questions

This research seeks to answer the following research questions:

RQ1: Does ProWritingAid feedback affect students' essay writing accuracy?

RQ2: To what extent does ProWritingAid feedback help students notice and revise their most recurrent language problems?

RQ3: What are the students' and teachers' perceptions of and attitudes towards the effectiveness of automated feedback for improving writing accuracy?

4. The Research Hypotheses

Based on the abovementioned research questions, we propose the following research hypotheses:

RH1: ProWritingAid affects learners' essay writing accuracy positively

RH2: Automated feedback through ProWritingAid does help students notice and revise their most recurrent language problems to a great degree.

RH3: Teachers and learners may have positive attitudes regarding the use of automated feedback as a tool for improving learners' writing accuracy.

5. The Research Aims

The general aim of this study is to investigate the effects of AWE feedback on learners' essay writing accuracy.

More specifically, this research work aims to:

- Determine whether the usage of AWE would result in improvements in EFL learners' essay writing accuracy.
- Explore the potential benefits and drawbacks of web-based feedback on learners' writing performance.

- Identify teachers' and learners' attitudes and views regarding AWE feedback as a supplementary pedagogical tool for ameliorating learners' essay writing accuracy.

6. The Research Methodology for this Study

For this research project, the researcher will adopt a Mixed-methods Approach due to the nature of the study, which intends to examine the effects of AWE feedback on EFL learners' writing accuracy as well as explore teachers' and learners' attitudes and views vis-à-vis the usage of automated feedback to improve the overall writing performance. The study will follow an explanatory sequential mixed-methods research design on one pre-post-test group for the case of master EFL students at Biskra University.

Regarding the data collection methods, document analysis by means of students' pre-test and post-test essay drafts will enable the researcher to measure the effects of the treatment. To complement the previous data collection method, a semi-structured questionnaire with Master students as well as a semi-structured interview with written expression/ academic writing teachers will be administered to gain necessary qualitative data and substantiate the quantitative data.

Teachers of academic writing and Master students in the section of English at Biskra University will be the population for the present study. The said population is thought the most convenient because Master students are expected to attain a high level of writing proficiency; the said group however still shows major deficiencies relating to accurate grammar, spelling, punctuation, and other lexico-grammatical aspects of writing. Unlike other levels, Master students take an academic writing course in which they learn to develop the writing skills required for their future academic research. Correspondingly, the researcher is going to select, based on a convenience sampling technique, one group as the sample of this pilot study (n = 7).

7. Significance of the Study

It is unequivocal that little to no research has been done on AWE feedback in the Algerian context. Therefore, this research project will serve as an introduction to research on AWE feedback effects on learners' writing accuracy in the same context. This study may help raise awareness on the potential benefits and drawbacks of implementing computer-assisted language learning (henceforth, CALL) as a supplementary pedagogical tool for EFL writing teaching and learning. Moreover, the findings will likely help students to decide on whether or not to rely on AWE feedback for form-based feedback and how to get the most benefit of it in conjunction with teacher content-based feedback.

A Provisional Structure of the Dissertation

The following is the intended structure for this research work:

Chapter One: Selective Literature Review

Chapter Two: AWE Feedback on Writing

Chapter Three: Fieldwork and Data Analysis

8. Demystifying Terminology/Glossary

A number of terms require some elucidation to determine how and in which sense the researcher uses them.

AWE. Automated Writing Evaluation also known as Automated Essay Scoring (AES), is defined by Shermis & Burstein, 2003 (as cited in Cotos, 2014) as "the ability of computer technology to evaluate and score written prose." AWE software like Grammarly, My Access!, Criterion, Write and Improve, ProWritingAid provide summative and formative feedback on submitted writings and provides analysis on lexical complexity, syntactic variety, discourse structures, grammatical usage, word choice and content development (Chen & Cheng, 2008). In the present study AWE and electronic feedback (e-feedback) are used interchangeably.

Feedback. In the present study, feedback is conceptualised as the information given to learners about their performance by a teacher or someone taking a teaching role (in this context, AWE software). Its main purpose is to help guide and evaluate learners' performance to bridge the gap between what learners can do and what they should be able to do (i.e., learning goals and objectives). Ideally, feedback lays the foundation for further learning and performance development.

Writing accuracy. Refers to the accurate use of the language system in writing. In other terms, it refers to the correct use of grammar, punctuation, and vocabulary. Writing accuracy is a salient feature in writing generally, and in academic writing specifically because the correct use of the language system mirrors the writer's credibility.

Chapter One

Contents

Introduction

The present chapter attempts to present the theoretical aspect of L2 writing and L2 writing accuracy. This chapter will therefore explore definitions and concepts related to L2 writing, writing accuracy, and errors in writing respectively.

1.1 L2 Writing

1.1.1 The Nature of Writing

Writing is the combination and arrangement of symbols or letters into words and sentences. In a sense, this view is not altogether wrong. Writing is indeed the arrangement of letters into words, words into sentences, and sentences into text(s); nevertheless, how these letters, words, and sentences are arranged to make coherent texts is not arbitrary but rather governed by certain systematic rules (Byrne, 1998; Hyland, 2003).

In fact, this somewhat narrow view fails to capture the complex nature of writing. Writing encompasses the process of transferring thoughts into meaningful written text(s) through the recursive process of idea generation, drafting, revising; writing, and rewriting until the writer is satisfied with the end product (Byrne, 1998; Hyland, 2003). Unlike speaking, writing involves asynchronous communication with the reader; hence, the writer needs to make sure that his or her message is clear enough for the reader to interpret and understand (Broughton, et al., 1980; Byrne, 1998). For this reason, writing tends to be more standardised and less flexible than speaking.

Another way to look at writing is from a social perspective. While it can be described as an individual, private activity in the sense that much of the composing process takes place between the writer and himself/ herself, writing, most of the time, is intended for an audience (Broughton, et al., 1980). In this view, the writer does not just write for the sake of writing, instead, he/she writes with a predetermined purpose in mind.

Writing has been conceptualised more or less differently at different points in time by different scholars across different disciplines. In an attempt to provide an all-inclusive view of the nature of writing, Hyland (2003) concludes:

> While every act of writing is in a sense both personal and individual, it is also interactional and social, expressing a culturally recognized purpose, reflecting a particular kind of relationship, and acknowledging an engagement in a given community. This means that writing cannot be distilled down to a set of cognitive or technical abilities or a system of rules and that learning to write in a second language is not simply a matter of opportunities to compose and revise. (p. 27)

The focus of this research is on L2 writing, an umbrella term referring to writing as a second language as well as writing as a foreign language.

1.1.2 Difficulty of writing

The fact that writing is a complex activity requiring multiple sets of skills and competencies is well established (Byrne, 1998; Hyland, 2003). Following Byrne's (1998) categorization of writing problems, the latter are categorised under three headings: psychological, linguistic, and cognitive problems.

1.1.2.1 Psychological problems

The solitary non-interactive nature of the writing activity makes writing challenging.

1.1.2.2 Linguistic problems

In speaking, speakers tend to pay less attention to the organisation, grammaticality, and coherence of sentences because meaning is usually maintained through interaction. In writing, however, the comprehensibility of a text depends on the writer's choices of

organising, sequencing, and linking sentences. Writers, thus, have to meticulously draw on multiple linguistic resources to make their writing clear and comprehensible to the readers.

1.1.2.3 cognitive problems

Speaking involves the natural spontaneous medium of communication whereby the speaker does not need much conscious effort to communicate. Writing, on the other hand, lacks the property of spontaneity because it requires higher levels of conscious and cognitive efforts "to master the written form of the language and to learn certain structures which are less used in speech, or perhaps not used at all, but which are important for effective communication in writing" (Byrne, 1998. p. 05).

Byrne's account of the difficulties inherent to the writing activity mainly highlights the underlying differences between speaking and writing. It should be noted, however, that difficulties in writing are not limited to those mentioned above.

1.1.3 L1-L2 Writers' Differences

Much of the writing instruction theory is informed by English as a first language writing instruction which proved to be inefficient and misleading in English as a second/foreign language writing instruction and practice. L2 writing context is unique and therefore needs, to a certain degree, a unique framework of theory, research, and practice (Grabe in Silva & Matsuda, 2001).

In comparing L1 and L2 writers, Grabe (in Silva & Matsuda, 2001), Hyland (2009), and Barone & Cargile (2020) account for their similarities and differences. For the purpose of readability, the L1 and L2 writers' differences will be listed in the following themes:

a) Proficiency: L1 writers are in most cases proficient in their L1; meaning that they have a command of lexical, grammatical, and syntactic aspects of the language, unlike their L2

writers counterparts who face problems with language proficiency (Grabe in Silva & Matsuda, 2001; Hyland, 2009; Barone & Cargile, 2020). This lack of language proficiency causes L2 writers to shift their attention to the learning of linguistic aspects at the expense of the higher-order concerns of writing (Hyland, 2009).

b) Experience: L2 writers have less experience and practice in the skills they need for writing in the target language. Grabe (in Silva & Matsuda, 2001) believes that "Practice in writing often does not match up well with the writing demands that students must address in courses across the university curriculum" (p. 44).

c) Rhetoric: L2 writers operate with different rhetorical patterns from those of the L1 writers. In other words, L2 writers have rhetorical and cultural preferences rooted in their L1 with which they organise ideas and present information into written discourse (Grabe in Silva & Matsuda, 2001; Hyland 2009).

d) Assessment: while L1 writers are usually assessed based on higher-order skills such as critical thinking, creativity, and individual voice; L2 writers value form-focused assessment and feedback which help them improve their writing accuracy (Grabe in Silva & Matsuda, 2001).

The consistent efforts to draw the L1-L2 writers' differences along with empirical research findings on the matter have substantially helped in the development of the L2 writing theory (Grabe in Silva and Matsuda, 2001). L2 writing instructors now have a clearer view of L2 writing nature and L2 writers' specific needs; as a result, they are more capable of making efficient pedagogical decisions to address their learners' needs.

1.1.4 L2 Writing Instruction Approaches

From its emergence as a field of inquiry and research, ESL and EFL writing theorists, researchers, and practitioners have made considerable efforts to discover and

define the nature of L2 writing and L2 writing instruction. These efforts took the form of theories, approaches, and pedagogical frameworks for ESL and EFL writing instruction. The ESL and EFL writing classroom have witnessed shifts in paradigms from the early 1960s to the late 1980s, with the product-based approach, the process approach, and English for academic purposes being the influential approaches to ESL/EFL writing instruction.

1.1.4.1 The Product Approach

Before the 1970s, writing was influenced by the audiolingual method of second language teaching which drew on both theories of structural linguistics and behaviourist psychology, giving the rise to what is known as the product-based approach. Writing in the product-based writing classroom was of 'secondary concern', serving only as a reinforcement practice to master previously learned grammatical structures and vocabulary (Kroll, 1990). Teachers taught the grammatical patterns and rules presumed to be problematic because of differences with students' mother languages (Kroll, 1990; Ferris, 2013). Students were simply seen as imitators or manipulators of already learned formal linguistic patterns. As a result, positive second language behaviour reflected in grammar accuracy and correctness were reinforced while errors, i.e. negative second language behaviour, were unaccepted and avoided (Kroll, 1990, Ferris, 2013).

1.1.4.2 The Process Approach

Despite the underlying differences between L1 and ESL composition, L1 writing research and practice were, and remain to be, of significant influence on ESL and EFL writing research and practice (Onozawa, 2010). In the 1970s, influenced by Native English Speakers (NES) composition theory of 'the expressive approach', ESL composition researchers and practitioners shifted their focus from the product-based approach to the

process-based approach to writing instruction (Onozawa, 2010; Ferris, 2013; Kroll 1990). Thereby, rather than focusing on producing error-free, grammatically-accurate pieces of writing, teachers and learners were "encouraged to focus on discovering ideas, drafting, revising, working collaboratively, and sharing success" (Ferris, 2013, p.08).

The process approach thus views writing as the process of creative thinking in which learners generate and develop ideas through a recursive process of prewriting, drafting, revising, and editing (Onozawa, 2010; Kroll 1990; Ferris,2013). Not long after the adoption and application of this approach to ESL and EFL writing classrooms, researchers and practitioners in both ESL composition and second language acquisition expressed their concerns regarding its effectiveness and applicability to the ESL context (Ferris, 2013; Onozawa, 2010). Ferris (2013) maintains that pedagogical practices in native-speaker writing classes cannot be simply adopted to ESL and EFL writing classes without due evaluation of the ESL/EFL writers' distinct context, ESL and EFL writers do need pedagogical designs tailored to their specific learning needs.

1.1.4.3 English for Academic Purposes (EAP)

English for academic purposes (henceforth EAP) is an offshoot of the genre orientation to writing instruction, which emphasises purposeful, context-oriented writing (Hyland, 2003; Kroll, 1990; Hinkel, 2004). The English for academic purposes approach pays special attention to the context in which writing occurs or will occur, that is, the academic context. Hence, EAP writing teachers should engage and 'socialise' their learners with the academic discourse through goal-oriented tasks, such as analysis and examination of 'expert' academic texts and their structures (Hyland, 2003, Kroll,1990), intensive study of relevant content, synthesis and presentation of information (Kroll, 1990). These tasks aim to familiarise the learners with the genre-specific conventions that they

need to adhere to achieve academic success (Kroll, 1990). In short, EAP approaches writing as the purposeful act of communication, which follows a set of conventions agreed upon within the academic community.

Despite the continuous efforts made on the part of ESL writing theorists, researchers, and practitioners to develop a holistic understanding of L2 writing, it remains, to date, premature to decide what ESL writing instruction should and should not be like (Kroll,1990). So, before deciding on whether to adopt and/or adapt certain theorie(s), teachers need to raise a number of questions in order to re-evaluate the effectiveness and the merits of certain approaches against others in certain teaching/learning contexts. Hyland (2003), for instance, suggests a synthesis of different approaches as he sees them as "complementary alternatives for designing courses" (p.22).

1.2 Writing Accuracy in L2 Writing

As mentioned in the section above, L2 writing has witnessed major paradigm shifts from product-focused writing to process-oriented writing moving to more social/genre-based writing. In parallel with these changes, the view of accuracy in writing, also known as grammatical correctness, has changed from being the centre of attention to being completely marginalised and then back to being reconsidered.

1.2.1 Definition of Accuracy

In its general sense, accuracy in writing refers to the relatively high degree to which a writer's text conforms to the target language's norms, with *norms* referring to the grammatical rules and conventions of the said language. Unlike spoken language, writing is more restrictive and less tolerant of deviation; therefore, correctness and conformity to the language's grammatical system are of great importance (Broughton, et al., 2003).

Similarly, Foster and Skehan (1996) define accuracy as the error-free use of language in both spoken and written form which can be measured in contrast to target-like language use. To them, accuracy mirrors the learner's current developmental level of language knowledge.

In the same vein, Lahuerta (2016) perceives accuracy as "the absence of deviations from a particular linguistic norm or the absence of errors" (p. 77).

In another definition, Buck, Byrnes, and Thompson (1989; in Hadley, 2003, p.17) distinguish accuracy in language as "the acceptability, quality and precision of the message conveyed".

Wallis (1996; as cited in Wolfe-Quintero, Inagaki, Kim, 1998) holds a rather communicative-oriented view of accuracy. According to him, accuracy promotes correct and accurate use of language when it is used for communicative purposes.

Based on the aforementioned definitions, it is fair to say that scholars (Forster, & Skehan, 1996; Lahuerta, 2016; Hadley, 2003; Wallis, 1996**)** share similar conceptions of language/grammatical accuracy.

1.2.2 The importance of Accuracy in L2 Writing

The importance of accuracy in L2 writing and L2 academic writing, in particular, cannot be overstated. Self-evidently, A well-written piece of writing reflects the writer's writing proficiency and vice versa. While writing proficiency is measured based on the CAF triad (developed by Skehan, 1989) which refers to complexity, accuracy, and fluency respectively; accuracy plays an instrumental role in the shaping of language and writing proficiency (Hinkel, 2002).

Moreover, writing is more restrictive and less tolerant of deviations than speech (Broughton, Brumfit, Flavell, et al., 2003). In extension, academic writing is even more restrictive and convention-oriented; therefore, the role of grammatical accuracy in L2 writing is deemed primordial for academic success (Hinkel, 2004). On a similar note, in advocating the role of grammar and grammatical accuracy in L2 language learning, Celce-Murcia (1991) argues that accuracy and grammatical control are paramount in the academic setting. She believes that academically bound L2 writers' writing should present a 'reasonable' degree of accuracy. Both Celce-Murcia (1991) and Ferris (1995) accounted for the issue of the high frequency of grammar errors in L2 learners' academic writing; they maintained that the high number of errors may compromise the level of grammatical accuracy thus resulting in learners' writings being unaccepted by the readers. In other words, grammatical inaccuracies undermine effective communication and render the written product confusing to the readers.

Furthermore, grammatical accuracy in writing is necessary for avoiding misunderstanding or misinterpretation of information and/or message (Larsen-Freeman, 2003). Subtle differences in verb tense or use of subordination, for instance, could change the meaning the writer intends to make; this proves that how we use and order the language items (grammar) shapes meaning and its interpretation.

In conclusion, content cannot be separated from form, in fact, the language choices we make in writing shape content. With that being said, L2 writing teachers should assist learners in developing their levels of grammatical accuracy to help them attain university-level writing demands and beyond.

1.2.3 Developing L2 Writers' Grammar Accuracy Through Grammar Instruction

Language for ESL and EFL writers creates a major obstacle in L2 writing (Hyland, 2003; Qu, 2017; Polio 2019). L2 writers have the chorus tasks of learning to write as well as learning the target language (English) simultaneously (Hyland, 2003). ESL and EFL writing classes, especially genre-based university-level writing classes, underemphasize the importance of explicit grammar instruction in developing accuracy. Instead, the focus of these writing classes is shifted to the instruction of genre conventions, composing strategies, and idea generation (Polio, 2019).

Academically bound ESL and EFL writers, more or less proficient alike, require grammar instruction to attain the high degree of accuracy required in academic prose (Hinkel, 2004). Although the instruction of a linguistic form does not always guarantee its acquisition (Corder, 1967), Norris and Ortega's meta-analysis (2000) of 77 published research reports relating to the effectiveness of explicit grammar instruction demonstrates that "grammar learning focused instruction of any sort is far more effective than any type of teaching methodology based on focused exposure without explicit teaching" (Norris & Ortega, 2000 as cited in Hinkel, 2004, p.26).

It is worth noting that we are not referring to the traditional isolated sentence-level grammar teaching and exercises apart from meaningful context; rather, we are referring to the focus on from in context to foster meaningful language use. Supporting grammar instruction within the communicative paradigm, Frodesen (in Celce-Murcia 2001) states:

> From the perspective of grammar as a resource in shaping accurate and effective communication, it seems clear … that focus-on-form should to some extent be an integral part of the instructional design for second language writing classrooms. This does not mean, however, that all kinds of

> grammar instruction are useful in the ESL/EFL writing classroom. Nor does it mean that students will automatically be able to transform input received through explicit grammar instruction into productive output. Such transfer from input to output ... requires that teachers consider and reflect on many learners, situational, and linguistic variables relevant to their students and classroom contexts. Awareness of these variables can greatly assist teachers in deciding when and how to incorporate grammar into writing instruction, as well as in selecting those grammatical features most deserving of students' attention and practice for any given context. (p.234)

Frodesen acknowledges L2 writing teachers that not any kind of grammar input will necessarily result in output; thus, teachers need to take into consideration a number of contextual variables in order to make efficient pedagogical decisions that will, in return, benefit their learners within their respective teaching/learning context.

Explicit instruction of grammar (the metacognitive explanation of grammar rules) is also rewarding in that it accelerates the acquisition of a language's grammatical knowledge which will, in one way or another, help students attend to and make better use of teachers' corrective feedback (Hinkel, 2004).

Writing accuracy makes an essential component of effective written communication; ergo, the lack of it could cause mild to serious communicative breakdowns. While the odds are high for L2 writers to produce error-free written communication, they should put forth more effort to learn and acquire the grammatical knowledge necessary in developing L2 writing accuracy and proficiency. For clarity purposes, this research focuses on investigating the effects of Automated Writing Evaluation (henceforth AWE) feedback on writing accuracy and mechanics.

1.3 Errors

1.3.1 The Conception of Error

It is no easy task to frame a single inclusive definition of error in English as a second language and/or English as a foreign language learning context; the concept of error in English as a second language and English as a foreign language (henceforth ESL and EFL respectively) has been defined differently by different scholars at different points in time.

Corder (1967) views errors in L2 as 'evidence' of a learner's current stage of linguistic development, or, in other words, errors are seen as indicators of a learner's language system competence and knowledge up to the present time. He believes that errors committed by L2 learners are similar to those committed by children during their L1 acquisition.

Conversely, Ferris (2010) identifies errors in learners' writing as the "morphological, syntactic, and lexical forms that deviate from rules of the target language, violating the expectations of literate adult native speakers" (p. 03). Similarly, Brown (2007) distinguishes errors as the "noticeable deviation from the adult grammar of a native speaker" (p.258).

Based on the aforementioned definitions, the concept of error in the ESL and EFL context can be synthesised to encompass two key concepts: (a) error as evidence of learners' language system development operating at the time, and (b) error as the deviation from the conventional grammatical rules of the target language.

1.3.2 Classification of Errors: Errors vs Mistakes

The problem of error/ mistake distinction has been a subject of a prolonged discussion since its introduction by Corder (1967) in his book 'The Significance of Learner's Errors', he distinguishes the two concepts. According to him, error refers to "the systematic errors of the learner from which we are able to construct his knowledge of the language to date" (Corder, 1967, p. 167), whereas a mistake refers to errors in performance. Simply put, an error is a systematic deviance from adult native speakers' conventional language system often relating to the learner's language competence, while a mistake is unsystematic and often relates to a learner's performance (Corder, 1967). An example of a mistake would be as follows: an unfocused learner says 'the boy play' although he/she knows that verbs in the simple present tense with the third person singular he (the boy) takes 's' at the end (plays).

In the same line, Brown 2007 refers to mistakes as 'performance errors' caused by a failure to employ a known language system correctly (Brown, 2007). He further argues that, like native speakers, second language learners make mistakes in their discourse and are able to recognize and correct them. Therefore, mistakes should not be associated with a lack of competence but with the 'lapses' in performance and/or communication breakdowns caused by some psychological factors, such as slips of the tongue, tiredness, and hesitation in the course of speech production (Brown, 2007). On the other hand, Brown identifies errors as the "idiosyncrasies in the language of the learner that are direct manifestations of a system within which a learner is operating at the time" (Brown, 2007. p.258). The definition of error by Brown (2007) resembles that of Corder (1967) in that both accentuate error as deviance from the grammatical system of that of a native speaker

and that errors mirror, in a way, the learner's language competence (Corder, 1967; Brown, 2007).

Coder and Brown's error-mistake distinction seems to be a simple black and white issue; however, it had been called into question due to its vagueness in identifying and classifying erroneous language instances. In the ESL/EFL teaching/learning context, differentiating between an error and a mistake is not always easy. According to James (1998), an error cannot be self-corrected, whereas a mistake can be self-corrected if pointed out to the learner; nevertheless, unless the learner is not only capable of recognizing the mistake but also able of correcting him or herself, the error-mistake problem remains unsettled. In an attempt to resolve this error-mistake dichotomy confusion, Brown (2007) advises teachers to rely on the frequency of deviance as a criterion to determine the classification of an erroneous language instance as an error or a mistake.

1.3.3 The Two Major Sources of Errors

Research on Second Language Acquisition and Foreign Language Acquisition has identified two major sources of learners' spoken and written errors.

1.3.3.1 Interlanguage Errors

As the name suggests, interlingual errors are caused by the conscious or unconscious interference of the mother language elements into the target language performance (oral or written). In other words, it is the application of the mother language's linguistic behaviours into the target language behaviour (Richards, 1971). It is conceivable inevitable to learn a new language without the influence and interference of the acquired language's linguistic features (Ellis, 1997). Interlingual errors encompass phonological, morphological,

syntactic, and semantic errors often caused by the underlying differences between the L1 and the L2 systems (Ellis, 1994). Some morphological and syntactic errors of L2 learners, Corder (1973) argues, are similar to errors common among native speakers' children during their L1 acquisition. Therefore, interlingual errors are considered a sign of L2 language learning development.

1.3.3.2 Intralingual Errors

Prior to the development of Error Analysis (the EA), Contrastive Analysis was the prevalent approach to studying learners' errors, ascribing all errors made in L2 production to the interference of the learner's mother language elements. This premise was soon questioned and rejected in light of the emergence of Error Analysis which identified sources of errors other than the mother language interference, i.e., intralingual errors (Richards, 1971). Intralingual errors as defined by Richards (1971) "are those which reflect the general characteristics of rule learning, such as faulty generalisations, incomplete application, and failure to learn conditions under which rules apply" (pp. 5-6). Throughout the target language learning process, learners tend to make generalisations, analogies, and hypotheses about the new language system based on their short and limited knowledge and experience with this language (Othman, 2015). These types of errors are more common in ESL and EFL learners' performance than those caused by L1 interference, Richards (1971) contends.

Conclusion

The foregoing chapter aimed at providing a theoretical overview of L2 writing accuracy encompassing its definitions, importance, and ways to develop it. Additionally, it included definitions and conceptualisations and relevant theoretical aspects of L2 writing as well as errors in L2 writing. In the following chapter, the researcher will provide a

theoretical overview of corrective feedback as well as automated writing evaluation feedback which makes one way to develop L2 writing accuracy.

Chapter Two

Contents

Introduction:

In this chapter, we will first explore definitions and types of written corrective feedback, we will then compare the efficiency of different types of WCF, examine its potential in improving writing accuracy, and account for learners' reactions to WCF. Definitions of Automated Writing Evaluation, its effects on writing accuracy, its underlying advantages and drawbacks, and learners' perceptions regarding its use will be later discussed.

2.1 Written Corrective Feedback (WCF)

2.1.1 Definition

First, it is important to note that while there are different types and delivery modes of corrective feedback, this research focuses primarily on written corrective feedback (henceforth WCF) provided on grammatical errors and the mechanics of writing (form-focused feedback).

Since the 1980s, written corrective feedback has been a subject of continuous research and controversy with regard to its role in developing L2 writers' writing accuracy (Nassaji & Kartchava, 2021). Nevertheless, this controversy did not translate into differing views of what constitutes WCF.

Bitchener & Storch (2016) define WCF as "a written response to a linguistic error that has been made in the writing of a text by an L2 learner" (p. 01). According to them, WCF generally refers to comments provided on grammatical and mechanical errors (punctuation, spelling, capitalization) rather than on content errors.

In line with Bitchener and Storch's definition, Leow & Suh (in Manchón & Polio, 2022) describe WCF as any response given by a teacher, a researcher, or a peer to bring the

L2 writer's attention to an error committed in his or her written composition. The error may be grammatical as well as it may be organisational and/or pertaining to content.

Kartchava (in Nassaji & Kartchava, 2021) the other defined Corrective Feedback as "information provided to second language (L2) learners about the accuracy of their output" (p. 598). These responses, information, or comments involve more or less explicit input provided by the environment (teachers, peers, supervisors, software, etc) to inform L2 learners/writers of their erroneous output. The term WCF has been used interchangeably in the literature with "error correction", "grammar correction", and "treatment of error" thus constraining WCF to grammatical errors (Ferris, 2010).

In this respect, it is fair to say that researchers share somewhat similar views and definitions of WCF.

2.1.2 Strategies for Providing Corrective Feedback (types of WCF)

Teachers use different strategies to provide WCF. Among others, these strategies include direct feedback, indirect feedback, focused feedback, unfocused feedback, and metalinguistic feedback.

2.1.2.1 Direct feedback

Also known as overt feedback, refers to when the teacher provides the corrected form for the learner/writer (Ferris & Robert, 2001; Ellis, 2009). Bitchener & Ferris (2012) define it as the type of feedback

> which provides some form of explicit correction of linguistic form or structure above or near the linguistic error and usually involves the crossing out of an unnecessary word/phrase/ morpheme, the insertion of a missing

word/phrase/morpheme, and/or the provision of the correct form or structure. (p. 65).

2.1.2.2 Indirect feedback

Occurs when the teacher indirectly indicates that there is an error in the learner's writing. Ellis (2009) categorises indirect feedback into two subcategories: a) locating the error by underlining or circling it and b) indicating the error without location (by recording in the margin the number of errors made in a line) (Bitchener & Ferris, 2012).

2.1.2.3 Metalinguistic CF

Involves the provision of metalinguistic or explicit comments regarding the nature of the errors made (Ellis, 2009). This explicit comment could take two forms: a) the use of codes, or as Ellis (2009) puts it 'abbreviated labels', for different types of errors, or b) the provision of brief metalinguistic explanations of the errors.

2.1.2.4 Focused feedback

Is when the teacher provides corrective feedback on selected error types. For example, the teacher only provides feedback on subject-verb agreement errors. Therefore, the correction tends to be intensive (Tootkaboni & Khatib, 2014).

2.1.2.5 Unfocused feedback

Involves the teacher's correction of all or most errors in a learner's written text (Ellis, 2009). Thus, the correction tends to be extensive (Tootkaboni & Khatib, 2014).

2.1.3 The Relative Efficiency of Different Corrective Feedback Types

Ellis (2009) emphasises that there is no secret recipe for corrective feedback and that what might work in one teaching/learning context might not work in another, as Hyland & Hyland (2006) note "it may be ... that what is effective feedback for one student in one setting is less so in another" (p. 88). Several studies, (Hyland & Hyland, 2006;

Ellis, 2009; Ferris, 1995; Ferris & Roberts, 2001; Bitchener & Knoch, 2010) among many others, have been conducted over the years in an attempt to answer the simple yet troublesome question: which corrective feedback strategy is most effective in developing L2 learners writing accuracy. Much to ESL composition teachers' detriment, results from the large body of research yielded no clear-cut answers.

In comparing the effects and effectiveness of direct and indirect corrective feedback, studies like those of Robb, Ross, & Shortreed, (1986) and Ferris, (2006) reported no statistically significant differences between the effects of the direct and indirect feedback on writers' writing accuracy. It is important to note, however, that most of these studies were limited to the examination of the immediate effects of CF on revised drafts or on subsequent writings. This calls for more longitudinal investigations to better capture the long-term effects of the different types of feedback on writing accuracy.

On another note, Bitchener & Knoch (2010) remind us that "what is most effective is determined by the goals and proficiency levels of the L2 writers" (p. 210); consequently, lower proficiency writers would benefit more from direct feedback due to their limited linguistic repertoire (Ferris, 2011). On the other hand, indirect feedback is preferred for higher proficiency writers because it "invites writers to draw on their linguistic knowledge when attempting to correct the errors that have been identified" (Bitchener & Knoch, 2010).

The same could be said of the effectiveness of the other feedback strategies; research is yet to determine which type of corrective feedback is most effective in certain teaching/learning settings. This may well be due to the complex factors surrounding corrective feedback (Ferris & Roberts, 2001; Ellis, 2009). These factors include, among others, teacher background, training, linguistic knowledge, feedback practices; varied learners' language proficiencies, learning styles, motivation; varied treatments and scopes,

research designs, types of writing, types of errors…etc (Hyland & Hyland, 2006; Ellis, 2009; Tran, 2013).

Despite the research's failure to provide a clear answer to the question mentioned earlier, Ellis (2009) postulates that it is important that teachers "have a clear and explicit account of the options available to them, an understanding of the rationale for each option, and some knowledge of the research findings (uncertain as these are)" (p. 106).

2.1.4 The Effectiveness of Written CF for Improving Linguistic Accuracy

There has been mounting research on the efficacy of WCF in improving L2 learners' writing accuracy following the publication of Truscott's 1996 controversial essay "The case against grammar correction in L2 writing classes" (Ferris, 1997, 2010,2011; Bitchener & Knoch, 2010; Nassaji & Kertchaval, 2021). Prior to Truscott's infamous essay, research on WCF was scarce with only a few studies that examined the short-term effects of corrective feedback on EFL learners' linguistic progress (Ferris, 2010, 2011). The said studies indicated that learners who received WCF were able to edit their texts successfully and made significant reductions in the number of errors in the revised drafts (e.g., Fathman & Walley, 1990 in Kroll, 1990). Analysing these studies, Truscott (1996) heavily criticised their underlying research designs and results. His argument was based on the ground that short-term improvement in revised texts with the help of teachers does not indicate learning as well as it does not guarantee the sustainability of this improvement in new texts. He described error correction as ineffective and even harmful; he even went further when he called for the abandonment of error correction in L2 writing classrooms when he stated "grammar correction has no place in writing courses and should be abandoned" (1996, p. 328). What is ironic, however, is that his (Truscott's) stance against error correction only led to growing interest in the investigation and the examination of the

effects and effectiveness of grammar correction on linguistic accuracy in both SLA and L2 composition research.

Ferris' (1999) "The case for grammar correction in L2 writing classes: a response to Truscott (1996)" came as a response to Truscott's claims. She noted in her essay that grammar correction can indeed be effective when it is given to what she termed as "treatable errors". Treatable errors, according to Ferris (1999), are those rule-governed errors such as subject-verb agreement, definite and indefinite articles, and verb forms to mention a few, whereas "untreatable errors" are those that are idiosyncratic in nature (e.g., relating to word order, idiomatic expressions), are more difficult to be 'treated' and acquired through grammar correction, irrespective of the latter's level of explicitness. This is highlighted in Truscott's (1996) argument where he explained that syntactic, morphological, and lexical knowledge are acquired differently across different levels of development. In parallel, empirical research on the effectiveness of WCF in improving L2 learners' writing accuracy has demonstrated that some error categories are more amenable to WCF than others (Ferris, 2011).

In a study examining the effect of WCF on three linguistic categories (the past simple tense, the use of article system, and prepositions) Bitchener, Young, & Cameron (2005, as cited in Bitchener & Knoch, 2010) found that the L2 writers improve their accuracy in the first two "treatable" errors whereas there was no significant improvement in the idiosyncratic use of prepositions. In another study, Ferris (2006) measured the progress of 55 students' essays over a one-semester period in five broad error categories (verbs, noun endings, articles, word choice, and sentence structure). The research findings revealed overall significant reductions in the mentioned error categories by the end of the semester. However, the reduction rate of some errors (verb and lexical errors) was much

more significant than other errors (articles use and sentence structure) (Ferris, 2006). In another study, (Chandler, 2003) compared the accuracy level of the experimental and control group over a 10-week period. The experimental group received WCF on their essay and was required to correct and revise it before handing in the next one, whereas the control group revised and corrected all of the 5 assigned essays by the end of the 10-week period. Results revealed that the experimental group substantially outperformed the control group in the level of accuracy. To this effect, (Chandler, 2003) postulates that an increase in the experimental group writing accuracy "refute(s) the assertion that having students correct errors is ineffective" (p. 279).

Due to space limits, we are unable to cover all the studies conducted on the efficacy of WCF on linguistic/writing accuracy; however, in reviewing the literature, we were able to draw the following conclusion: the effectiveness of WCF for improving linguistic/writing accuracy remains uncertain in any generalised sense (Ferris, 1999, 2006, 2010, 2011; Guenette, 2007; Bitchener & Knoch, 2010; Nassaji & Kartchava, 2021). While it has been established that WCF can help L2 writers make short-term improvements in their redrafts in some error categories, it is still premature to say that these improvements are predictors for long-term gains (Truscott & Hsu, 2008 as cited in Ferris, 2011).

Given the variability of results of these studies, why then continue to provide feedback? Ferris (2011) argues that the provision of grammar feedback should continue because:

- Error feedback helps students revise and edit their texts (p. 12)
- Error feedback leads to accuracy gains over time (p. 12)
- Students and teachers value error feedback (p. 13)
- Written accuracy is important in the real world (p. 14).

2.1.5 Learners' Reactions to Feedback

As previously mentioned, many variables affect, and sometimes determine, the potential of the written corrective feedback, one of which is the learner variable (Ferris, 1995; Ellis, 2009; Ferris, 2011; Storch in Nassaji & Kartchava, 2021). Logically, the value of feedback would be compromised if learners do not attend to it. In this respect, several studies have emerged in an attempt to investigate two key issues surrounding learners' responses to feedback: a) learners' feedback perspectives and preferences and b) learners' responses to and engagement with feedback. The literature on CF confirms that learners do not only value corrective feedback but also realise it encompasses an essential part of their performance development (Ferris, 1995, 2011; Hyland & Hyland, 2006). Survey research shows that although ESL/EFL learners and writers generally value the type of feedback that brings their attention to their grammatical errors (form-focused feedback), they do also appreciate comments made on the content of their writings (Hedgcock & Lefkowitz, 1994 as cited in Hyland & Hyland, 2006). As one possible result, learners react and respond to corrective feedback in a variety of ways: they could pay no attention to it (Truscott, 1996), they could correct the error(s), delete the part(s) of the text containing the error(s), substitute the erroneous language form with the corrected form, … etc (Ferris, 2006; Nassaji & Kartchava, 2021). In her study, (Ferris, 2006) demonstrated a number of revision categories made in response to CF in 146 ESL students' essay redrafts; the revision categories are shown in the table below.

Table 2.1

Student revision analysis categories (from Ferris 2006)

Label	*Description*
Error corrected	Error corrected per teacher's marking.
Incorrect change	Change was made but incorrect.
No change	No response to the correction was apparent.
Deleted text	Student deleted marked text rather than attempting correction.
Substitution, correct	Student invented a correction that was not suggested by teacher's marking.
Substitution, incorrect	Student incorrectly made a change that was not suggested by teacher's marking.
Teacher-induced error	Incomplete or misleading teacher marking caused student error.
Averted erroneous teacher marking	Student corrected error despite incomplete or erroneous teacher marking.

In the same study, Ferris (2006) reported "a strong relationship between teachers' error markings and successful student revisions on the subsequent drafts of their essays" (p. 97). Results showed that over 80 percent of the revisions were correct. This demonstrates that learners are able to attend to feedback provided by the teacher and use it effectively in revising and refining their writings. For development to occur, however, learners need to pay close attention to the corrective feedback provided to them as opposed to simply receiving it. On this note, Guenette (2007) contends that learners "have to notice the feedback and be given ample opportunities to apply the corrections" (p. 52).

In short, it is positively useful for teachers to take into account learners' learning differences as it helps them tailor more efficient feedback to maximise learning gains for each learner, as Hyland & Hyland (2006) state "what is effective feedback for one student in one setting is less so in another" (p. 88).

2.2.1 Automated Writing Evaluation Feedback

"Feedback has long been regarded as essential for the development of L2 writing skills, both for its potential for learning and for learner motivation" (Hyland & Hyland, 2006, p.83). As it had been noted earlier in this chapter, L2 writers, particularly EFL writers, value and expect corrective feedback on their written compositions, especially the type of feedback that grabs their attention to grammatical and mechanics issues in their writings (Huang, 2011). Attending large groups of learners, however, is no simple task as it increases the workload teachers already suffer from (Ranalli, 2018). Advances in technology, particularly in the area of natural language processing (NLP) and latent semantic analysis (LSA), have led to the development of web-based software and systems that can automatically analyse users' written compositions/texts (Hockly, 2019). These online software/systems come with the potential of a) assisting teachers by freeing them from the chorus task of attending to sentence-level errors and b) assisting learners by providing instantaneous corrective feedback on different aspects of their writing, for example, grammar and mechanics.

2.2.2 Automated Writing Evaluation (AWE) Definition

First, it is important to point out that, although in some instances used interchangeably, automated essay scoring is different from automated writing evaluation, which is the focus of the present study. Automated essay scoring refers to the automated summative scores/grades generated by computer software/systems in response to a submitted written composition (dominantly essays) for assessment purposes. On the other hand, automated writing evaluation refers to the automated formative feedback generated by computer software/systems in response to a submitted written composition (e.g., journal

entries, narratives, essays, etc.) for pedagogical purposes, i.e., feedback for learning (Ware, 2011; Weigle, 2013; Hockly, 2019).

Automated writing evaluation (also known as automated feedback or computer-generated feedback) refers to "the use of automated tools to provide information that will help students improve their writing" (Weigle, 2013, p.41); this information could take the form of "general comments, specific comments and/or corrections" (Stevenson & Phakiti, 2014, p. 52).

AWE feedback for formative purposes has been used increasingly inside and outside language classrooms since the development of AWE software/systems. These software/systems are powered by techniques such as Artificial Intelligence (AI), particularly Natural Language Processing (NLP) and Latent Semantic Analysis (LSA) (Weigle, 2013; Stevenson & Phakiti, 2014), which analyse submitted texts and generate instant scores and/or evaluative feedback on various aspects of the text (grammar, mechanics, style, content, organisation) (Hyland & Hyland, 2006; Chen & Cheng, 2008; Stevenson & Phakiti, 2014). AWE software employs a variability of feedback types; Garrett (1987 as cited in Cotos, 2011) classifies them into the following four categories

> (1) only the correct answer is presented, (2) the location of errors is indicated based on a letter-by-letter comparison of the learner's input with the machine-stored correct version, (3) error messages associated with possible errors are stored in the computer and are presented if the learner's response matches those possible errors based on an analysis of the anticipated incorrect answers, and (4) problematic or missing items are pinpointed based on a linguistic analysis of the learner's response compared

> to an analysis derived from relevant grammar rules and lexicon of the target language. (p. 423)

Some of the commercially available web-based AWE software/systems are *My Access!*, Criterion, Grammarly, and ProWritingAid. The latter is the AWE system used in this study.

2.2.3 The Effectiveness of AWE Feedback in Improving Writers' Writing Accuracy

Due to the developments in technology and the new opportunities it offers, AWE software/systems/programs are being more and more used by teachers and students for a variety of purposes (Chen & Cheng, 2008). AWE systems present themselves as writing assistants which complement teacher feedback and help students by providing extensive evaluative feedback on submitted writings/texts (Weigle, 2013; Hockly, 2019 Thi & Nikolov, 2021). Many L2 composition researchers (see Weigle, 2013; Thi and Nikolov, 2021) recommend that automated feedback is best exploited in writing instruction when students use AWE systems to revise lower-order concerns of writing (sentence-level grammar and mechanics), whereas higher-order concerns (e.g., content and organisation) are provided by the L2 writing teacher(s).

The increased popularity and use of these AWE systems inside and outside writing classrooms have piqued the interest of many researchers (Ware, 2011; Thi & Nikolov, 2021). Among the many questions raised is whether AWE feedback is efficient in improving writing accuracy.

In their 13-week semester study on L2 lower-intermediate university-level students, Thi & Nikolov (2021) investigated the effect of the integrated use of Grammarly and teacher feedback on the students' writing performance. Results from the pre-test and

post-test suggest that writing accuracy has significantly increased and that students have made fewer language-related errors by the end of the semester.

In another study, Li et al. (2017) explored both short-term and long-term effects of Criterion feedback on intermediate-high and advanced-low ESL students' writing accuracy. The findings of short-term effects revealed that Criterion feedback helped students reduce errors in eight out of nine error categories of the revised redrafts (revisions of the same paper). Short-term gains of feedback, however, did not transfer into long-term improvements as there was no statistically significant error reduction in error categories except the category of run-on sentences.

Similarly, examining the impact of Criterion feedback on 70 ESL students of varying language proficiencies, Li et al. (2014) study results suggested the AWE feedback led to increased revisions and improved accuracy of redrafted papers. However, this study measured the accuracy development of multiple drafts of the same paper rather than multiple papers, therefore, it fails to capture the long-term effects of AWE feedback on writing performance.

The decrease in error rates indicates that students are able to make use of AWE feedback to improve the accuracy of their texts (Stevenson & Phakiti, 2014). However, in his study, Attali (2004 as cited in Stevenson & Phakiti, 2014) withdrew 71% of his data set from analysis because the participants (writers) neither revised their texts nor submitted their redrafts. This lack of AWE feedback use, in fact, "places a question mark against the efficacy of AWE for stimulating students to revise their texts" (Stevenson & Phakiti, 2014, p. 60).

In their critical review of research into the effects of AWE feedback, Stevenson & Phakiti (2014) contend that improvements in redrafts of the same text could be attributable

to students' revision skills rather than to their use of AWE feedback. Similarly, improvements in successive texts could be attributable to instructional or developmental factors.

Much like the research on the efficacy of teacher corrective feedback, research on AWE feedback is far from conclusive as to whether AWE is associated with improved writing accuracy. This may be due to "paucity of research, heterogeneity of existing research, the mixed nature of research findings, and methodological issues in some of the existing research" (Stevenson & Phakiti, 2014, p. 62).

2.2.4 AWE Feedback Affordances and Limitations

Defined as any process of learners' use of computers for language learning purposes (Aubrey & Shintani in Manchon & polio, 2022), computer-assisted language learning (CALL) presents itself with a multitude of advantages and limitations and AWE feedback is no exception.

Reportedly, AWE programs have noticeable features which favour it from teacher feedback:

- AWE programs provide instant feedback on as many submitted texts (Hockly, 2019; Weigle, 2013; Zhang, 2019).
- AWE programs create multiple revision and learning opportunities (Zhang, 2019)
- AWE programs provide global feedback on language and content as well as show error types (Hockly, 2019; Weigle, 2013; Zhang, 2019)
- AWE feedback helps learners recognise their recurring language problems; thus, it increases learners' reflection and learner autonomy (Weigle, 2013; Hockly, 2019; Zhang, 2019)

Despite the AWE's affordances, critics have pointed to its underlying technological limitations which distinguish it from human reviewers:

- AWE feedback tends to be form-focused, in other words, it overemphasised the correctness of language-level features of writing (grammar and mechanics) and promotes formulaic language (Hockly, 2019; Zhang, 2019).
- Critics question the ability of a machine to evaluate writing as it presumably segregates writing from its core social-communicative context (Hockly, 2019; Zhang, 2019).
- Critics of AWE programs claim that learners can learn to "game the system" (Hockly, 2019) through avoidance strategy which entails the avoidance of using the language that would cause errors.
- AWE feedback fails to address individual learner differences (Renalli, 2018).
- AWE software may miss or misidentify some types of errors (Dikli & Bleyle, 2014).

2.2.5 Learners' Perceptions on AWE Feedback

Relevant to research on AWE feedback is learners' attitudes and perceptions regarding the use of AWE systems. For instance, in the study conducted by Li et al. (2015), 18 out of 27 students expressed high levels of satisfaction with using Criterion. The 18 students repeatedly commented on the helpfulness of its corrective feedback. However, two of the 27 students expressed their dissatisfaction with the mistakes made by the program. Dikli and bleyle (2014), on the other hand, investigated the differences between AWE system Criterion feedback and teacher feedback. Perceptions regarding the use of Criterion were generally positive; however, students reported that instructor feedback was more focused, accurate, and valuable.

In another study by O'neil and Russels (2019), the overwhelming majority of the cohorts expressed their satisfaction with Grammarly feedback. Others, nevertheless, reported some areas of concern with regard to the accuracy of the program's feedback as it sometimes missed or misidentified some errors and/or even suggested faulty corrections. In the same line, high percentages of negative reactions were reported in Chen and Cheng's (2008) naturalistic classroom-based inquiry whereby *My Access!* integration was not perceived very positively by students. Students found *My Access!* Problematic because "It favours lengthiness, it overemphasises the use of transition words, it ignores coherence and content development, and it discourages unconventional ways of essay writing" (p. 104).

The mixed learners' perceptions and engagement with automated feedback are attributed to personal, contextual, and instructional factors. What is common in the literature is that students saw AWE programs as "but one other resource available to them to revise their writing" (Dikli & Bleyle, 2014, p. 12).

Conclusion

The role of written corrective feedback in improving writing accuracy has long sparked a series of heated debates (Truscott, 1996; Ferris, 1999) with proponents vouching for its usefulness and opponents calling for its abandonment. Although there appears to be no clear evidence of WCF's long-term benefits on writing accuracy (and writing proficiency in general), it remains an integral part of L2 writing teaching and learning. Apart from teacher-mediated feedback, computer-generated feedback seems to offer several favourable features that distinguish it from other traditional mediums of feedback. In light of the mixed research findings, further research in the EFL context is especially called for.

Chapter Three

Fieldwork and Data Analysis

Contents

Introduction

This chapter intends to report, analyse and synthesise the findings of the current investigation's collected data. First, it reviews, describes, and justifies the chosen research paradigm, research approach (es), and research methods and design as well as explains the rationale behind every methodological decision. Next, it reports the analysis of each data collection tool. Finally, this chapter attempts to answer the initially raised research questions by discussing and synthesising the research findings.

3.1 Research Methodology for this Study: Choices and Rationale

3.1.1 Research paradigms:

The philosophical worldview that has informed and guided our methodological research choices is the pragmatic paradigm. By definition, Pragmatism embraces the application of a plurality of research methods in order to reach a more exhaustive understanding of the underlying phenomena/ problem (Creswell & Creswell, 2018). It rejects the view that truth is accessed through a single research method. On the contrary, it urges researchers to make use of both quantitative and qualitative research methods which best serve their research questions and aims. With regard to the nature of the present study, and because pragmatism uses "pluralistic approaches to derive knowledge about the problem" (Creswell & Creswell, 2018, p.48), the pragmatic paradigm was deemed the most optimal for the present study.

3.1.2 Research Approach (es)

In accordance with the pragmatic research paradigm, the research approach adopted for this study is the mixed-methods approach. As our prime purpose of this research is to gauge the effect of AWE feedback on writing accuracy and examine students' and

teachers' perceptions vis-à-vis automated feedback, the researcher needs both quantitative and qualitative data to attain the predetermined aims.

3.1.3 Research Design (s)/ Strategy (ies)

The current study adopted a case study along with an explanatory sequential mixed methods design which served our predetermined research aims. With reference to time, students' accessibility, and feasibility of the research, we deemed a case study within a naturalistic setting to be most fitting. Furthermore, because the research subjects (students) were not randomly assigned, and because the study aimed to evaluate the effect of an intervention, a quasi-experimental design was accordingly implemented. It is therefore noteworthy that the generalizability of the results falls beyond the scope of our research.

3.2.1 Data Collection Methods

As far as the current investigation is concerned, three data collection tools were chosen in the course of collecting and gathering data. These included the students' pre-test and post-test essay drafts, the post-treatment questionnaire, and the teachers' interview.

3.2.1.1 The students' pre-test and post-test essay drafts

The two tests were used as the main data gathering tool to answer the current study's first and second research questions. Unfortunately, due to time constraints, lack of cooperativeness from the subjects' part, and the limited number of essays assigned to Master one English students in the academic writing course, we were only able to evaluate the short-term effect of AWE feedback on the accuracy of two drafts of the same essay.

3.2.1.1.1 Structure and aim

The structure of the post-test consisted of an essay draft in response to the following essay prompt: write an essay wherein you compare the Algerian educational system with another country's educational system. The essay was assigned to the students by their academic writing teacher as part of their continuous assessment. The post-test involved the edited draft of the same essay. Students uploaded, edited, and revised their essays based on the feedback provided by the automated writing evaluation software ProWritngAid. Due to many factors such as students' lack of cooperativeness and time constraints, the researcher was incapable of conducting a longer treatment over a longer period of time. The aim of the pretest was primarily to measure the informants' prior writing accuracy. The post-test consisted of the post-edited draft of the same essay. Similarly, the post-test essay drafts were analysed to measure the effects of computer-generated feedback on students' short-term accuracy.

3.2.1.1.2 Piloting and validation

Given the fact that students' essays were part of their academic writing course assignments, no piloting or validation was necessary.

3.2.1.2 Students questionnaire

A post-treatment questionnaire was designed and administered to answer the present study's third research question which aims at uncovering students' perceptions and attitudes regarding the AWE feedback as a writing assistant.

3.2.1.2.1 Structure and aim

A semi-structured questionnaire was administered online through google form. The respondents comprised only those who participated in the study and have used

ProWritingAid. It sought to discover the informants' perceptions and attitudes regarding their brief experience with automated writing evaluation feedback. It also sought to depict their levels and areas of satisfaction and/or dissatisfaction with the software's feedback.

3.2.1.2.2 Piloting and validation

Prior to administration, the questionnaire was reviewed and revised by our supervisor who found that no changes or amendments were required.

3.2.1.3 The Teachers' Interview

In order to capture the teachers' perceptions and attitudes in relation to automated writing feedback, a teacher interview was crucial.

3.2.1.3.1 Structure and aim

Three face-to-face meetings were scheduled with three written expression/academic writing teachers. The three teachers were highly cooperative and accepted to be audio recorded. A combination of close-ended and open-ended questions constituted the two-sectioned semi-structured interview. The primary aim of this data collection method is to explore teachers' perceptions and attitudes towards AWE feedback.

3.2.1.3.2 Piloting and validation

In pursuance of reducing possible obscurity and redundancy, the interviews were emailed to five written expression teachers/researchers inside and outside the country. Three of which provided us with evaluative feedback. No major changes were made except for the merging of two redundant question items into one.

3.2.3. Data Collection procedures

With respect to the ethical consideration, students who made the sample of this study signed an informed consent letter which clearly informed them of their rights and guaranteed their anonymity. The interviewed teachers, as well, signed consent letters, thereby accepting to be recorded. The data collection procedures consisted of four stages: 1) the collection of the essays' first drafts (pre-test), 2) the collection of the edited essay drafts (post-test), 3) the collection of the post-treatment questionnaire responses and 4) the teachers' interview.

3.2.4 Data Analysis Procedures

In accordance with the mixed-methods research approach, and since the data collected was both quantitative and qualitative in nature, the researcher made use of the data analysis methods of both trends. First, the pre-test and post-test were examined and analysed whereby the errors detected by the software and the others spotted by the researcher were coded by means of codes and highlights. The pre-test and post-test documents were also examined to measure the extent to which AWE feedback has improved students' writing accuracy; suitably, descriptive statistical analysis was exerted. Given the fact that the present investigation does not seek to generalise results, no inferential statistical analysis was held. As for the qualitative aspect of this research, thematic analysis was adopted for the description and interpretation of the obtained non-numerical collected data.

3.2.5 Population and sampling technique

Written expression/ academic writing instructors, as well as seven master one EFL students at Biskra University constitute the population of this study. Since the

generalizability of results falls beyond the scope of our research, a non-probability convenience sampling was chosen accordingly to conduct our research. A total number of seven students were conveniently chosen to form the sample of this study. In correspondence with the research objectives, three written expression/ academic writing instructors were chosen to be interviewed.

3.3. Study description and rationale

3.3.1 The treatment implementation or the description of the researched phenomenon

Prior to the treatment, two online synchronous tutorial sessions via google meet were scheduled to familiarise the students with the software ProWritingAid. After that, students were asked to upload, revise, and edit their essays based on the AWE feedback. Students pre-edited and post-edited essay drafts were then collected and analysed.

3.4 Results of the study

3.4.1 Results of the pre-test and post-test

Does ProWritingAid feedback affect students' writing accuracy? And to what extent does computer-generated feedback help students notice and revise their most recurring language problems?

To answer the first and second research questions, a corpus of 14 essay drafts was analysed to determine whether the use of AWE software ProWritingAid affected students' writing accuracy. Seven students (n= 7) submitted two drafts of one essay; the first of which was considered the pre-test and the second one the post-test. The students uploaded and revised their pre-edited drafts using the feedback provided by ProWritingAid. The pre-edited and post-edited essay drafts were then segmented, analysed, and compared by the researcher to determine whether the AWE resulted in any improvement in terms of

writing accuracy. The accuracy measure used in this study is the number of errors divided by the number of T-units (E/T), a widely used accuracy measure in second language research (Wolfe Quintero et. al., 1998).

The essays were first segmented into T-units which stands for minimal terminal units or "the shortest unit into which a piece of discourse can be cut without leaving any sentence fragments as a residue" (Hunt, 1970, p. 189). Afterward, the researcher coded the errors that have not been detected by the software. Table 3.1 illustrates the number of errors detected by the software, the number of errors detected by the researcher, the number of error corrections made based on the software feedback, and the number of error corrections made by the students independently.

From a preliminary observation, we noticed that the software did not detect all of the errors existing in the students' drafts; In fact, it only spotted 27% of the committed errors. Nevertheless, students reduced about 83% (61 errors out of 73) of the software-identified errors in the second drafts. On the other hand, only 29% (57 out of 192) of the errors which ProWritingAid did not detect were spotted and corrected independently by the students. This demonstrates that the use of AWE software encourages students' increased revision.

Table 3.1

Students' pre-test errors and post-test corrections

	Number of Pre-test errors detected by the software	Number of corrections made based on the software's feedback	Number of the pre-test errors detected by the researcher	Number of the post-test corrections made by the students	Number of overall errors in the pre-test essay drafts	Number of overall corrections

Student 1	9	9	16	14	23	23
Student 2	39	27	88	25	127	52
Student 3	21	21	26	1	47	22
Student 4	1	1	21	3	22	4
Student 5	2	2	9	0	11	2
Student 6	1	1	14	5	15	6
Student 7	0	0	18	9	18	9
Total	73	61	192	57	265	118

One of the present study's aims is to measure the effect of AWE feedback on students' writing accuracy; accordingly, table 3.2 displays students' pre-test and post-test accuracy scores.

Table 3.2

Students' pre-test and post-test writing accuracy

Students	Accuracy of the pre-test	Accuracy of the post-test	Difference
Student 1	1.38	0.11	1.27
Student 2	3.43	2.08	1.26
Student 3	1.95	1	0.95
Student 4	0.91	0.65	0.26
Student 5	0.52	0.42	0.10
Student 6	0.29	0.18	0.11
Student 7	0.9	0.42	0.48

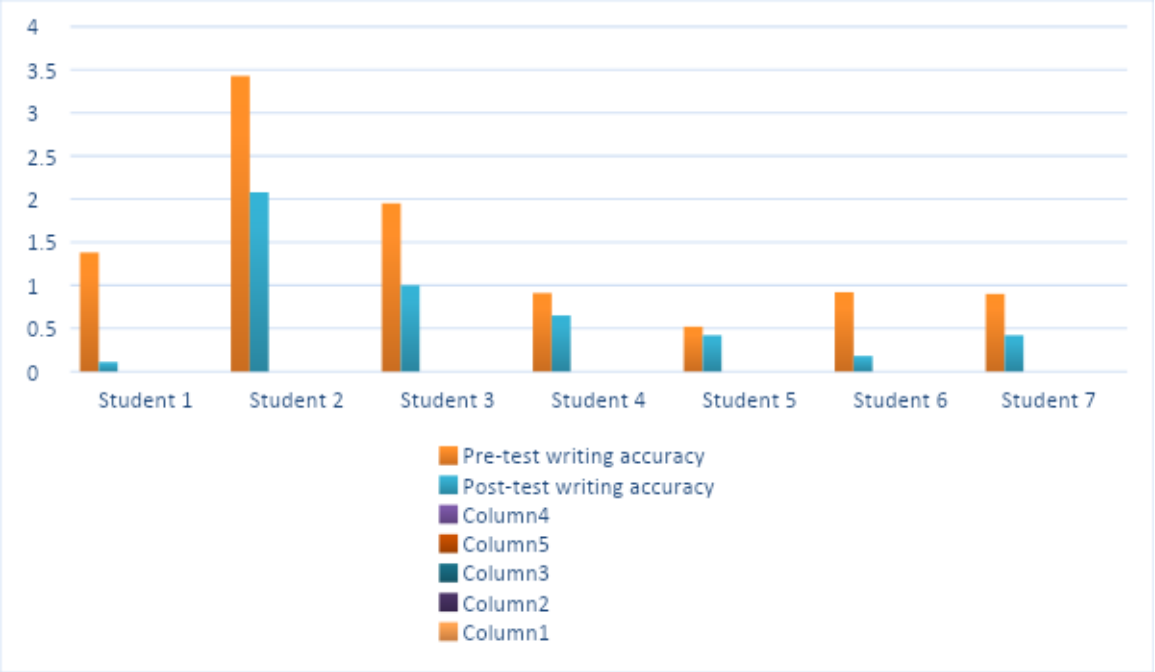
The purpose of table 3.2 is to show the different levels of students' writing accuracy and how it is affected by the AWE feedback. For example, student 2 made about

3.43 errors per T-unit in his/her first essay draft which is a rather high ratio of errors. On the other hand, student 6 made only about 0.29 errors per T-unit. The obtained scores reflect the informants' overall low level of accuracy except for students 5 and 6.

Overall, the post-test scores indicate that students' writing accuracy has improved in their essay redrafts. Logically, some students made more significant improvements than others which may well be due to the student's initial level of accuracy. Student 5, for example, reduced about 0.11 errors per T-unit because the number of errors in his/her first draft was already relatively low (0.52 errors per T-unit). Conversely, student 2's number of post-test errors has substantially decreased with a reduction of 1.26 errors per T-unit. Figure 3.1. further illustrates students' pre-test and post-test writing accuracy differences.

Figure 3.1

Comparison between students' pre-test and post-test writing accuracy



To compare the informants' overall writing accuracy achievement in the pre-test and the post-test, the mean values were calculated. Table 3.3 and figure 3.2 below

visualises very clearly the pre-test and post-test accuracy mean values as well as their difference.

Table 3.3

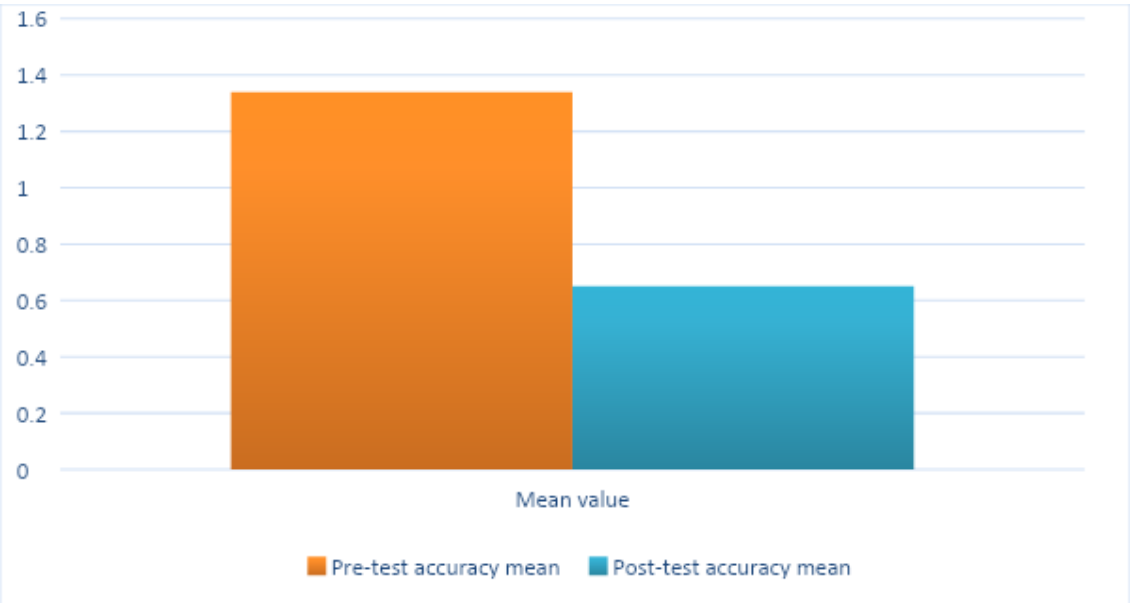
Comparison between pre-test and post-test mean scores

Pre-test mean	Post-test mean	Difference
1.34	0.65	0.69

As shown in Table 3.3, the pre-test mean value in accuracy is 1.34 which means that students, in general, made about 1.34 errors per T-unit. This demonstrates that students' writing accuracy level is relatively low because they are unable to write without making errors. All of the students in the pretest made errors in writing varying between 3.43 to 0.29 errors per T-unit.

Figure 3.2

Comparison between pre-test and post-test mean scores



The post-test mean value in accuracy, however, shows that students reduced more than half of the errors (a reduction of 0.69 errors per T-unit). Notably, all of the students in the post-test made errors in writing varying between 2.08 to 0.11 errors per T-unit. This reduction of errors, although significant, does not mean that students have developed in terms of accuracy because out of seven students, three students still made about 2.08 to 0.65 errors per T-unit which is a high score of errors (student 2 made 2.08 errors per T-unit, student 3 made 1 error per T-unit, and student 4 made 0.65 errors per T-unit). In contrast, the remaining four students showed significant improvements in terms of accuracy with student 1 showing the most significant reduction in error ratio (a reduction of 1.27 errors per T-unit).

As can be inferred from table 3.3 and figure 3.2, the post-test mean score differs considerably from that of the pre-test. Outwardly, we could say that ProWritingAid feedback did improve students' writing accuracy; however, referring back to Table 3.2 and figure 3.1, one cannot ignore the fact that some students did show more significant improvements than others (student 1 in contrast to student 5). Others made significant reductions with regard to error ratio yet still exhibited low levels of accuracy (for example, students 2 and 3). It is worth noting here that the terms decreased and reductions are used because students' writing accuracy improves when the number of errors decreases. Accordingly, referring back to the two mean scores confirms our assumption that ProWritingAid feedback positively affects students' writing accuracy. This is evidenced by the difference between the posttest and pretest mean scores which was 0.69. Another substantial evidence of ProWritinAid's positive effect on writing accuracy is that all seven students made fewer errors in the second draft. Students however need more remedial work to attain the accuracy level needed and expected in academic writing.

With that being said, it is worth mentioning that despite being practical for measuring subjects' developmental language accuracy, measures of accuracy fall short in capturing and describing the magnitude of errors committed and corrected. In this regard, the second research question concerns the inquiry as to whether AWE feedback assists students in noticing and revising their most recurring language problems (i.e., errors).

First, as mentioned earlier in this section, the software failed to detect all of the students' grammatical errors (only 27% of the errors were spotted). We also pointed out that students did notice and correct some errors which were not detected by ProWritingAid; in fact, about 29% (57 out of 192) of these errors were corrected by the students without the software assistance. Additionally, we have observed that the software provided feedback mainly on spelling and punctuation errors. Although these two mechanical error types are critical, especially in academic writing, other types of errors also hold a greater magnitude in compromising the quality of the written composition. Table 3.4. shows clearly the error types and the number of errors identified by the ProWritingAid versus those detected by the researcher.

Table 3.4

The number and types of errors identified by ProWritingAid versus the number and types identified by the researcher

Error	Detected by ProWritingAid	Detected by the researcher	Total
Spelling	23	19	42
Punctuation	29	37	66
Article	2	28	30
Verb form	1	11	12
Preposition	4	21	25

Possessive s	2	4	6
Word form	2	8	10
Capitalization	5	13	18
s-v agreement	2	16	18
Run-on	3	6	9
Miscellaneous	0	8	8
Fragment	0	8	8
Verb tense	0	3	3
Verb form	0	5	5
Word order	0	5	5
Total	73	192	265

As we can notice from table 3.4, 15 error types had been identified in the students' essay drafts. ProWritingAid, though, failed to identify 5 out of these 15 error types, namely fragments, verb tense, verb form, word order, and miscellaneous errors- which the researcher could not fit into any of the other 14 identified error types. Even the spelling and punctuation errors identified by ProWritingAid, which constitute the majority of the error types detected by the software (about 71% of the total errors), made up about only 48% of the total spelling and punctuation errors exhibited in the students' essay drafts.

Additionally, the software failed to spot most of the errors in three error types found especially prominent in all of the 7 students' essays; those types include errors relating to preposition use, article use, and subject-verb agreement.

Table 3.5

Percentages of errors and corrections in relation to the total number of errors and corrections

Errors detected by the software	Corrections based on the software feedback	Errors detected by the researcher	Corrections made by students independently
27%	51%	72%	48%

As displayed in table 3.5, the software provided feedback on about 27% of the total errors (73 out of 265), whereas 72% (192 out of 265) of the overall errors in students' pre-test drafts were detected by the researcher. The table also shows that students made nearly the same percentages of corrections in relation to the overall error corrections with or without the assistance of the software's feedback. It seems obvious in looking at table 3.1, table 3.4, and table 3.5 that ProWritingAid provided feedback on a limited range and number of errors in comparison to those spotted by the researcher.

Referring to table 3.1, we notice that students corrected about 83% of the AWE spotted errors; nevertheless, table 3.4 demonstrates that the majority of these errors pertain to the category of writing mechanics (spelling and punctuation). This study proved the deficiency of the software ProWritingAid in detecting what the researcher sometimes found critical and grave errors that had not only decreased students' level of writing accuracy but also undermined effective, clear communication. The excerpts below are extracted from one of the students' essays further illustrate the software's limitations.

In Algeria licence degree graduates can be teachers.

… before they proceed to the university for the graduates, verse those who fail where they can apply for vocational training centres…

Evidently, the two excerpts are full of lexico-grammatical errors and difficult to understand. The same excerpts were marked correct by ProWritingAid and, as a result, were not corrected.

Synthesising the data from tables 3.1, 3.4, and 3.5, we can come to the conclusion that computer-based feedback through ProWritingAid did not help students revise their most recurrent language problems. Even though the use of ProWritingAid did result in improvements in terms of the overall accuracy level, the latter may be attributed to reductions in writing mechanics errors as well as to students' individual revising skills.

3.4.2 Results of the semi-structured questionnaire

As mentioned earlier, the semi-structured questionnaire was designed to examine students' perceptions and attitudes regarding AWE feedback as a tool for improving writing accuracy. The questionnaire comprises three major sections and a total of 21 question items.

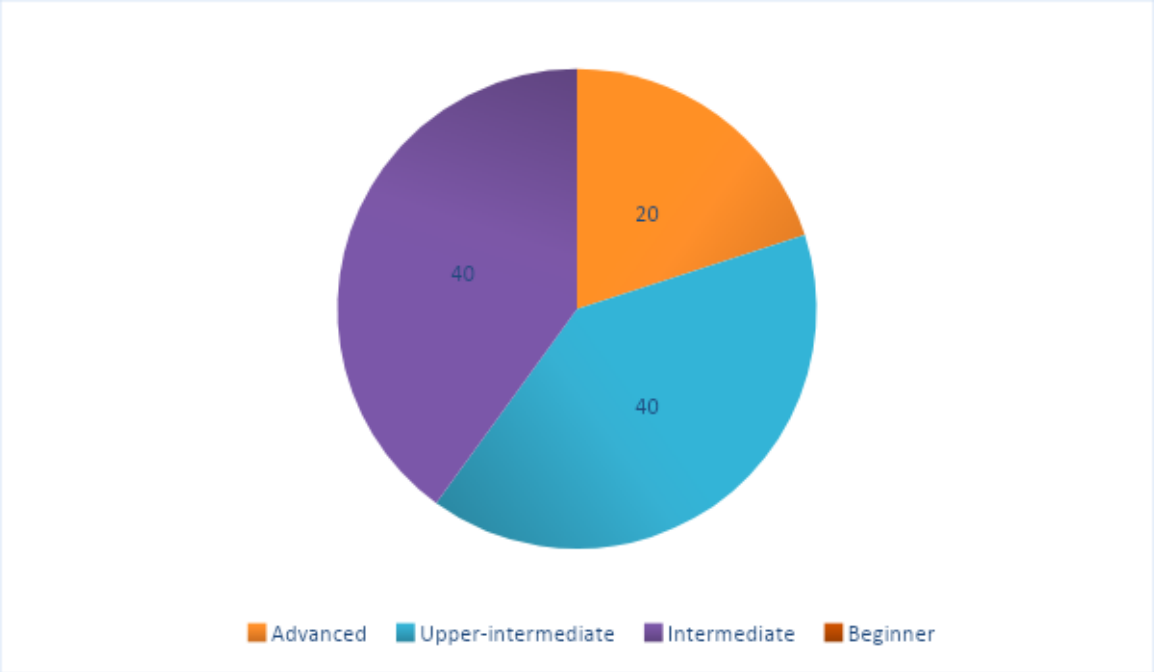
Section One: Students' Perceptions of Writing and Feedback on Writing

Out of seven participants, five responded to the questionnaire. The remaining two could not complete it because they had no internet access. 100% of the respondents were females which reflects the predominance of females in such fields as English (language learning in general).

Q2. How do you evaluate your English writing proficiency?

Figure 3.3

Students' self-reported English writing proficiency



As displayed in figure 3.3, 40% (2 out of 5) of the respondents self-reported their English writing proficiency as intermediate, another 40% (2 out of 5) as upper-intermediate, and 20% (1 out of 5) as advanced. The overall responses were considered accurate in comparison with the informants' essays, with the exception of one informant whose English writing proficiency, based on measures of fluency, complexity, and accuracy, was deemed of a beginner level.

Q3. According to you, what is the most difficult aspect of writing?

Table 3.6

The Writing Areas Students Mostly Find Difficult

Aspect of writing	Number	Percentage

Grammar	1	20%
Spelling	0	0%
Punctuation	1	20%
Vocabulary	2	40%
Content	0	0%
Style	1	20%
Total	5	100%

It is abundantly clear that writing in EFL can sometimes be a daunting task, more so, academic writing in EFL presents itself with a multifold of challenges. As displayed in table 3.6, students had differing beliefs on what constitutes the most difficult aspect of English writing. While 40% of the respondents believe that grammar and punctuation are challenging, 60% of them perceive vocabulary and style to be puzzling and impeding.

Q4 How much do you agree or disagree with the following statements?

Table 3.7

Students' perceptions of English writing and feedback on writing

		Frequency				
		Percentage				
Item No	Statements	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
1	I find English writing important	4	1	0	0	0
		80%	20%	0%	0%	0%

2	I find English writing difficult	1	0	4	0	0
		20%	0%	80%	0%	0%
3	During writing, I find grammar difficult.	0	2	1	2	0
		0%	40%	20%	40%	0%
4	During writing, I find spelling difficult.	0	0	1	3	1
		0%	0%	20%	60%	20%
5	During writing, I find punctuation difficult.	0	1	2	1	1
		0%	20%	40%	20%	20%
6	I find feedback on writing important.	3	2	0	0	0
		60%	40%	0%	0%	0%
7	I find grammar feedback on writing important.	3	2	0	0	0
		60%	40%	0%	0%	0%
8	I am satisfied with the grammar feedback provided by the teacher.	0	3	1	1	0
		0%	60%	20%	20%	0%
9	I am satisfied with the content feedback provided by the teacher	1	0	0	1	0
		20%	60%	0%	20%	0%
	Total			05		
				100%		

Item 1: It seems logical to find out, at the outset, whether students perceive English writing as important because beliefs drive actions; in other words, students would be more open to learning opportunities if they believe writing to be important. Clearly, as demonstrated in table 3.7, students were in accordance with the fact that the English writing skill is paramount.

Item 2: Generally speaking, the writing skill is branded as the most difficult of all the four language skills to learn and master, especially for foreign language learners. In effect, 80% of the students maintained a neutral stand whereas only 20% strongly agreed that English writing is difficult.

Item 3: Responses to this item were divergent in nature. Whereas 40% of the respondents agreed that grammar in writing is difficult, another 40% disagreed. In some way, this mirrors the respondents' diverse language proficiency levels. Students of higher language proficiency levels usually pass the threshold of grammatical difficulties whereas others of lower levels of language proficiency still struggle with lower-order concerns of writing.

Item 4: The majority of the respondents (80%) were either in strong disagreement or in disagreement with the statement 'during writing, I find spelling difficult' whereas the minority (20%) maintained a neutral position. This is perhaps either due to the students' allegedly strong command over the orthographical aspect of language or to their unawareness of their committed spelling mistakes.

Item 5: The levels of agreement ranged from 'agree' to 'strongly disagree' with the statement suggesting that punctuation in writing is difficult. Because of the variability of results (as shown in table 3.7) and the limited number of respondents, we cannot conclude whether punctuation in writing creates a challenge for students. However, referring to the results of the essay analysis, it was proven that students make a plethora of punctuation mistakes/errors.

Item 6: Since students acknowledged the importance of the writing skill (see item 1), it only seems logical for them to be in favour of any form of facilitative input that could help them ameliorate their writing performance. Consistently, all of the students either strongly agreed (60%) or agreed (40%) that feedback on writing is important.

Item 7: In inspecting students' perceptions on the importance of grammar feedback, it came to our notice that their answers mismatched those of item 3. The majority of students did not regard grammar in writing as difficult; however, most of them perceived grammar feedback to be essential (60% strongly agreed and 40% agreed). Therefore, and in concord with the literature, EFL students value and expect form-focused feedback.

Item 8: Much to our surprise, 60% of the respondents agreed with the statement 'I am satisfied with the grammar feedback provided by the teacher whereas 20% responded with neutral and another 20% disagreed. Ordinarily, tertiary level writing instructors focus more on content and organisational feedback because it is easier to administer than grammar feedback, especially in crowded classes.

Item 9: To measure the relevance and the possibility of integrating AWE form-focused feedback with teacher content-focused feedback, students were asked to report their levels of satisfaction with the teacher-mediated content-based feedback. The answers revealed that the majority (60% agreed and 20% strongly agreed) were satisfied with the teacher content feedback whereas only 20% were not satisfied.

As one may infer from the students' responses, students place a great value on writing as well feedback on writing. As such, diagnosing students' learning needs and preferences should be the point of departure for any pedagogical choice.

Q5. What kind of feedback do you prefer to receive or think will benefit you the most?

In order to determine students' preferences with regard to written corrective feedback, this specific question was posed.

Table 3.8

Students' Feedback Preferences

Types of feedback	Percentages
Feedback on Grammar	20%
Feedback on mechanics	20%
Feedback on vocabulary	0%
Feedback on organisation	20%
Content-based feedback	20%
All of them	20%
Total	100%

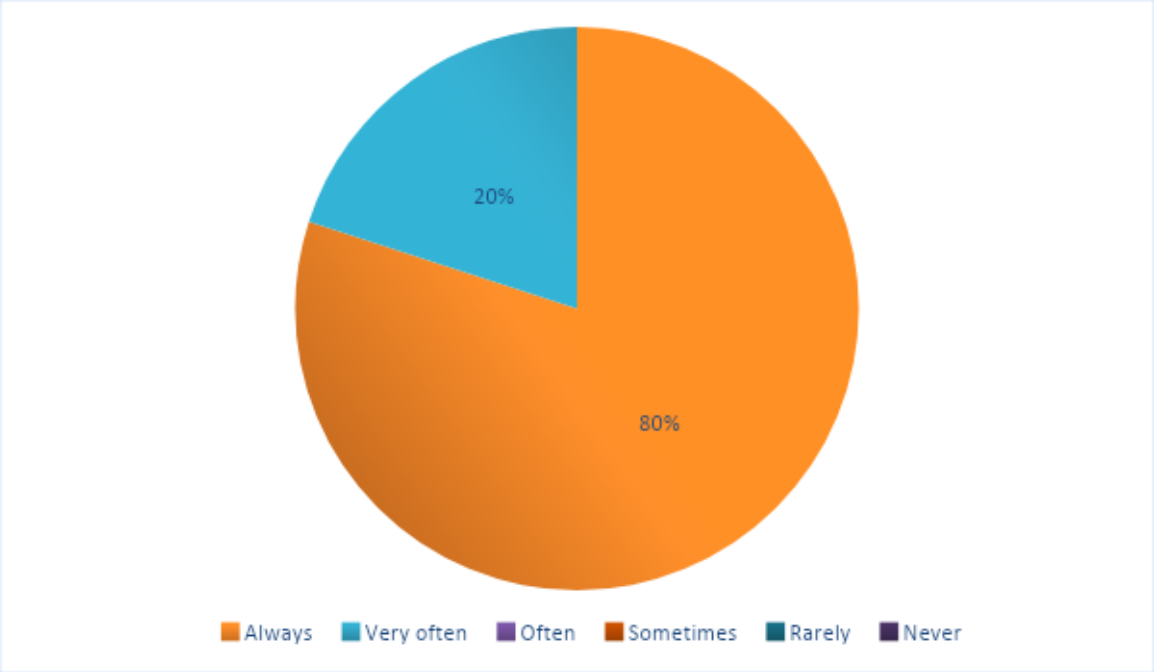
As clearly shown in table 3.8, each student preferred a distinctive kind of feedback. Surprisingly, none of the respondents reported a preference on vocabulary feedback although it was found in question 3 to be an area of students' writing difficulty. On the other hand, students showed feedback preferences on both higher-order (content and organisation) and lower-order writing concerns (grammar and mechanics).

Q6. How often do you attend to the feedback provided by the writing instructor?

This question sought to figure out how often students actually attend to the feedback provided by their writing/ academic writing instructor.

Figure 3.4

Students' frequency of attentiveness to the teacher-mediated feedback



As evident in figure 3.4, except for one student (20%) who reported that s/he makes use of the instructor's feedback very often, 80% of the students maintained that they always make use of the teacher's feedback. This signifies that the students pay attention to and value the writing instructor's feedback greatly. It also signifies that they are aware of the importance of feedback with regard to their language and writing development. Predominantly in EFL writing classrooms, the teacher is symbolised as the dispenser of information as well as the more knowledgeable evaluator; therefore, it does not come to our surprise that students are attentive to the teacher's formative feedback.

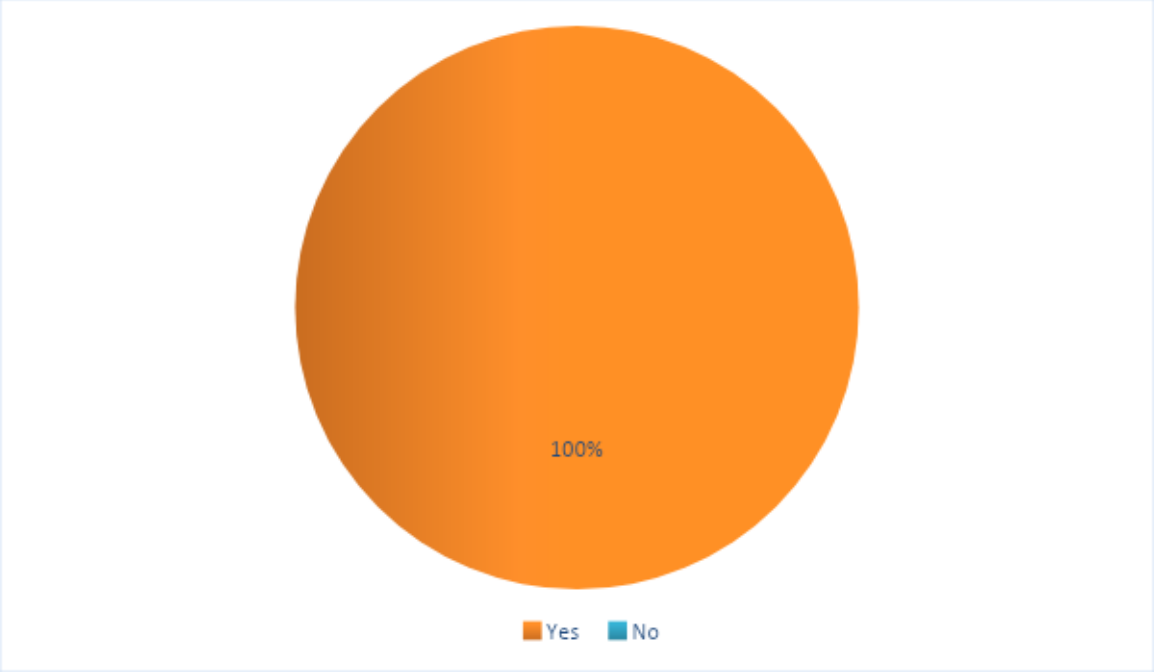
Section Two: Learners' Experience with ProWritingAid Feedback.

The present section sought to capture students' feedback on AWE feedback.

Q7. Were you familiar with automated writing evaluation before?

Figure 3.5

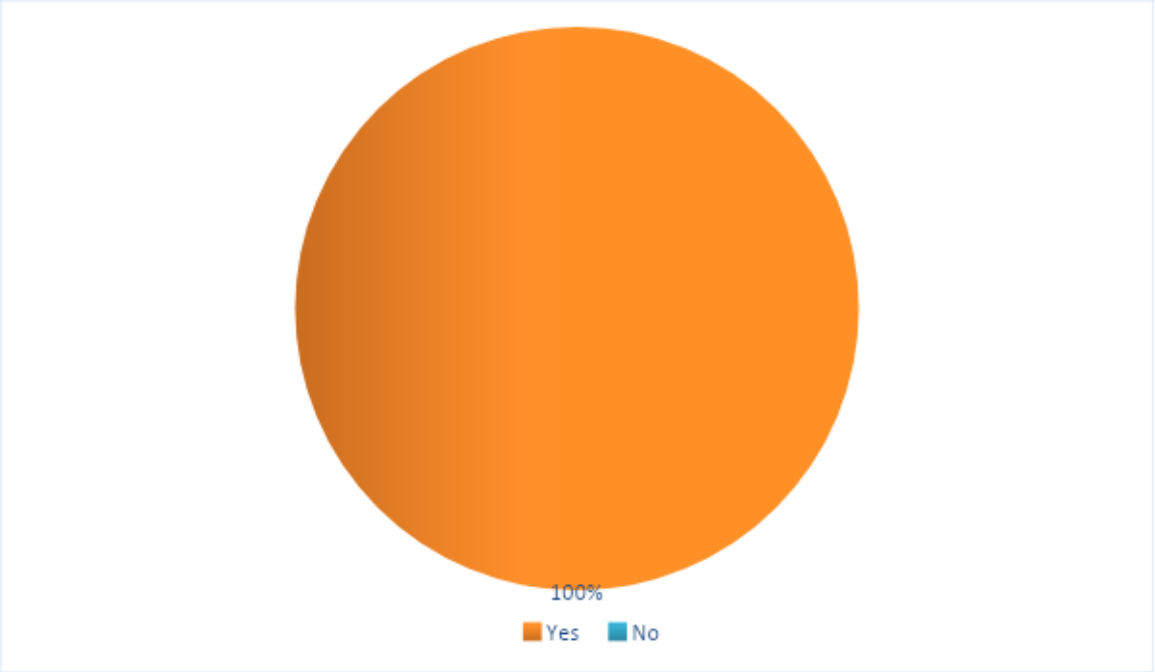
Students' familiarity with computer-generated feedback



Q8. If yes, have you used it before to complete your writing assignments?

Figure 3.6

Students' prior use of computer-generated feedback



Questions 7 and 8 sought to find out whether the respondents were accustomed to AWE software/ feedback. As portrayed in figure 3.5 and 3.6, all students without exceptions were not only familiar with computer-generated feedback but also did utilise it prior to the treatment to revise and edit their written compositions.

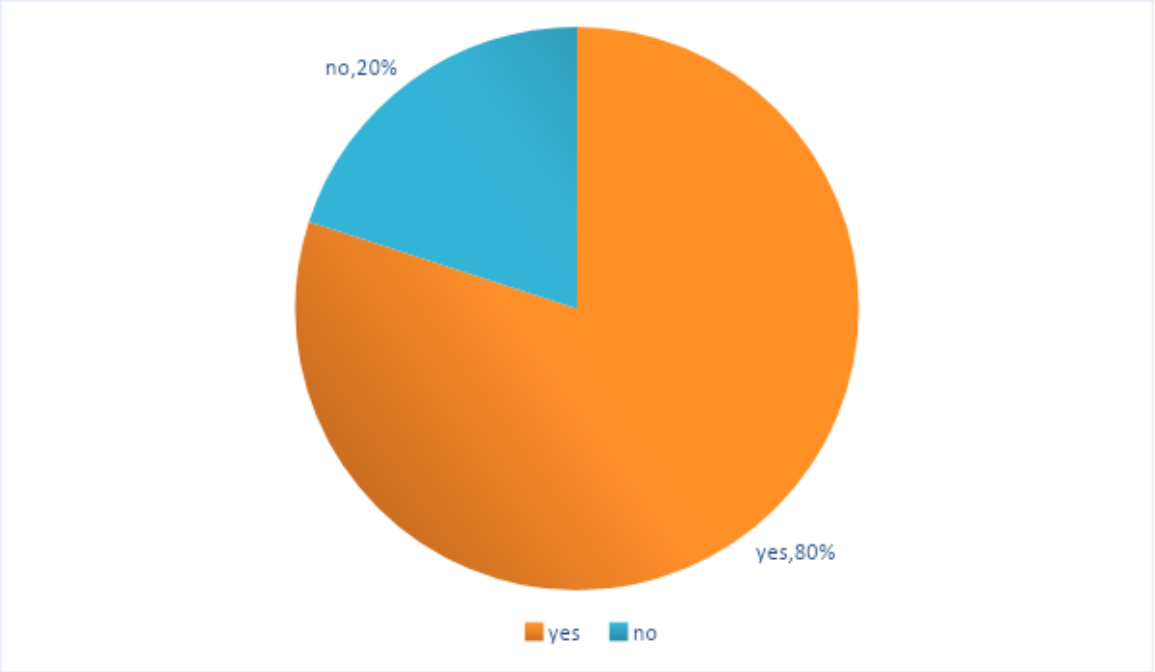
Q9 Did you encounter any problems when using the software ProWritingAid? If yes, please state them.

80% of the students (4 out of 5) maintained that they did face no considerable problem or difficulty while using the software ProWritingAid whereas 20% (1 out of 5) of them expressed that s/he did experience some degree of difficulty. One of the students annotated “it suggests many options that make the writer confused more about the correct one”, and another student added “sometimes when I tried to write something the software suggested something else and insisted on them and that is annoying”. The students’ remarks match the researcher’s observation in that ProWritingAid misidentifies errors and/or misunderstands the writer’s contextual intentions and, as a consequence, and in some instances, it suggests erroneous feedback which, as the student implied, confuses the writer.

Q10. Were you satisfied with the grammar feedback you received from ProWritingAid? Justify please.

Figure 3.7

Students’ Satisfaction with ProWritingAid Feedback



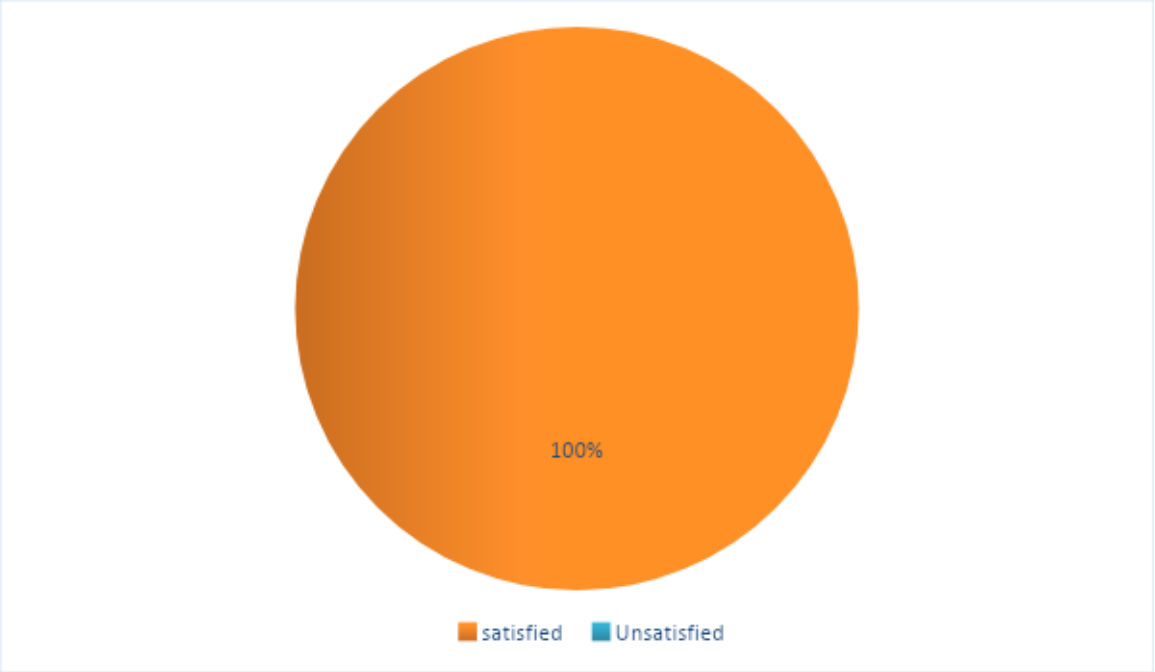
Unlike the preceding question which aimed to highlight any technical difficulty engendering from the software's usage, question 10 aimed to assess students' satisfaction with the provided automated grammar feedback. As figure 3.7 displays, 80% of the respondents were satisfied with the suggested grammar feedback. One student, however, commented "It underlined on many mistakes that it isnot even mistakes and the replacement of words (vocabulary which suggested) are out of the content". As previously remarked, ProWritingAid seems to suffer from such deficiencies as the marking of correct chunks of writing as erroneous and vice versa. This, with no doubt, strikes the validity of the feedback it provides. On the other hand, one student justified "it helped me with punctuation, as well as suggestions for other word choices" and another one added "because it fixes the mistakes and errors". Clearly, students were not only satisfied with the grammar feedback but also with other ProWritingAid features such as the thesaurus (synonyms and word suggestions). Although it had been proven that ProWritingAid has helped students reduce the number of errors in their revised drafts, the category of those reduced errors majorly pertained to mechanical errors. The large percentage of satisfaction

insinuates that students were unaware of the software's limitations in relation to error detection.

Q11. Were you satisfied with the spelling and punctuation feedback you received from ProWritingAid?

Figure 3.8

Students' satisfaction with the software's spelling and punctuation feedback



As demonstrated in figure 3.8, all of the students expressed their total satisfaction with the punctuation and spelling feedback delivered by the software. One of the respondents maintained that the spelling and punctuation suggestions were accurate, another one added "it helped me notice missing commas which I overlooked". This, in a way, indicates that the software did help students notice and correct their punctuation and spelling mistakes; nevertheless, one of the respondents complained "spelling yes since it

gives me the correct spelling of words, but punctuation not really since it doesn't follow the structure". By structure, we understand that the student meant to refer to the context of the essays. Substantially, the students' negative remark about the punctuation feedback confirms the results of the documents' analysis.

Q12. Did you pay much attention to the suggested corrections?

100% of the respondents contended that they did pay close attention to the error corrections suggested by the software. This suggests that all students were engaged and motivated to improve their writing.

Q13 Upon receiving feedback from ProWritingAid, what strategies did you opt for in revising and editing your essay?

Table 3.9

Students' revision strategies upon receiving AWE feedback

The revision strategies	Percentages
Accept all suggestions	20%
Ignore all suggestions	0%
Accept some	60%
Reread the essay and evaluate the provided feedback in relation to the essay	20%
Total	100%

We posed this specific question to depict the strategies used by students during the revision and editing processes. As shown in table 3.9, the majority of respondents (60%) accepted only some software corrections. On the other hand, only one of the respondents

reported that s/he reread the entire essay and assessed the provided feedback accordingly. Equally, only one student accepted all suggestions provided by the software.

AWE systems are designed to harness writers' analytical and revision skills; as a consequence, the mindless acceptance of the software corrections may lead students to become lazy and overly reliant on computer feedback. Mindful and critical analysis is indispensable if students are to improve their writing proficiency in general and writing accuracy in particular.

Q14. What kind of feedback was the most helpful to you?

Table 3.10 *Students' most preferred AWE feedback type*

Respondents	Their preferred AWE feedback type
Respondent 1	Grammar feedback
Respondent 2	Spelling
Respondent 3	Organisation
Respondent 4	Spelling and grammar
Respondent 5	feedback on punctuation

It appears that students share a general consensus with regard to their favoured AWE feedback; these consist of grammar, spelling and punctuation feedback. The said preferences do not come to our surprise since students usually either skip the process of revising and editing drafts or are oblivious of some grammatical and punctuation rules.

Section Three: Students' Perceptions of and Attitudes Towards Computer-Generated Feedback by ProWritingAid.

The aim of this section is to examine the investigated students' perceptions and attitudes toward computer-generated feedback after their experience with ProWritingAid.

Q15. What was, if any, your perception regarding computer-generated feedback?

Table 3.11

Students' prior views on computer-generated feedback

Respondents	Their prior views of AWE feedback
Respondent 1	it isstructured and more abstract, it does not focus on the content as far as it focuses on the shape
Respondent 2	Useful
Respondent 3	Wastes time
Respondent 4	I did not have an idea about it
Respondent 5	That it is not for free

Students' responses explicitly show that they held conflicting views and opinions about automated writing evaluation services/feedback. For one thing, respondent 2 thought it was useful while respondent 3 argued that it is a waste of time. Additionally, as one could tell from respondents 4 and 5 responses, the latter somehow contradict the responses to Question 8 in which all of the students reportedly confirmed their prior use of AWE systems.

Q16. What is your general perception now after having used ProWritingAid?

Table 3.12

Students' perceptions of AWE feedback after the use of ProWritingAid

Respondents	Their perceptions
Respondent 1	No response.
Respondent 2	it isa good tool to make you have a look at the mistakes you have made and how you can correct them in short time.
Respondent 3	Helpful.
Respondent 4	I found it useful.
Respondent 5	it is free and really helpful for the most part; it doesn't require a premium account for the basic things I need reviewed.

This question was posed to see whether students' perceptions regarding AWE feedback had changed after their experience with ProWritingAid feedback. Substantially, Students 3,4, and 5 views of AWE feedback had noticeably shifted towards the more positive end of the spectrum. In harmony with the literature, students appeared to be satisfied with the AWE software's ability to provide immediate, diagnostic feedback along with suggested corrections.

Q17. How much do you agree or disagree with the following statements?

Table 3.13

Students' perceptions regarding ProWritingAid's feedback

		Frequency				
		Percentage				
Item No	Statements	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
1	I find ProWritingAid feedback useful	3 60%	2 40%	0 0%	0 0%	0 0%
2	I find ProWritingAid feedback accurate	2 40%	3 60%	0 0%	0 0%	0 0%
3	ProWritingAid feedback helped me reduce errors in my composition	2 40%	3 60%	0 0%	0 0%	0 0%
4	ProWritingAid feedback helped me improve the accuracy of my essay	3 60%	2 40%	0 0%	0 0%	0 0%
	Total			05 100%		

Item 1: It is obvious from table 3.13 that the students either agreed (40%) or strongly agreed (60%) with the statement 'I find ProWritingAid feedback useful'.

Item 2: Although it had been established from the outset of this chapter that the researcher had discerned the technical shortcomings of the software ProWritingAid in spotting and

identifying all the errors in the students' written compositions, students' responses to item 2 indicate their obliviousness of the said limitations.

Item 3: Respondents expressed high levels of agreement with the statement 'ProWritingAid feedback helped me reduce errors in my composition'. In fact, 40% of them maintained that they strongly agree that the AWE feedback helped them reduce the number of errors in their essay redrafts whereas 60% agreed.

Item 4: Quite similarly, students' level of agreement with the statement **'**ProWritingAid feedback helped me improve the accuracy of my essay' ranged from agree (40%) to strongly agree (60%).

Fundamentally, table 3.13 portrays students' positive attitudes vis-à-vis AWE feedback through ProWritingAid. Based on their responses, students appear to trust the computer's ability in the provision of diagnostic corrective feedback on grammar and mechanics. This is made obvious in students' overall consensus that they did not only find ProWritingAid feedback useful but also accurate.

Q18 Based on your experience, can you identify the strengths of ProWritingAid feedback?

Q19 Based on your experience, can you identify the weaknesses of ProWritingAid feedback?

Table 3.14

Students' commentary on ProWitingAid's feedback advantages and weaknesses

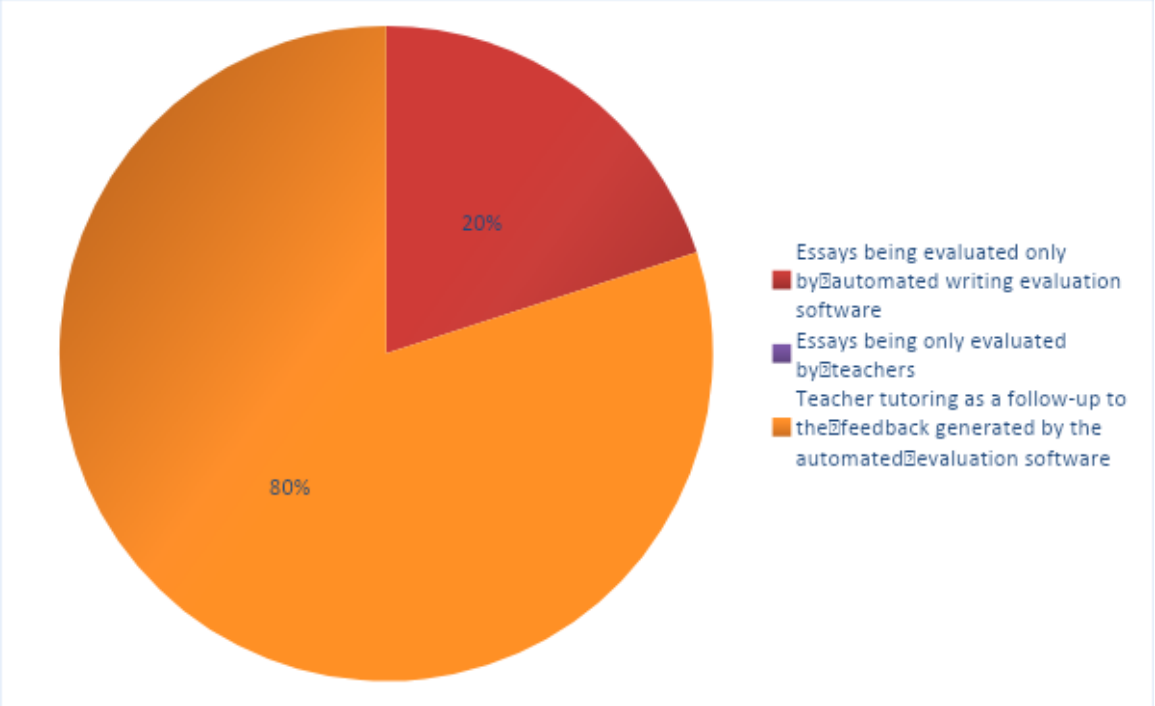
ProWritingAid strengths	ProWritingAid's weaknesses
Gives you options to correct the mistake / underlined the mistake and indicate the type of the mistake.	it isnot an advanced tool with an advanced parameters and options.
ProWritingAid eliminates common error types, inconsistent terminology, contextual spelling errors, grammar mistakes, and poor writing style.	The free version has a 500-word limit.
Variety of suggestions and you can find different writing styles.	Could not find any.
It focuses on all the elements in writing.	It doesn't relate to the content of the essay.
It covers many aspects of feedback all at once for free.	I have not encountered any.

Questions 18 and 19 were included to provide the respondents with the opportunity to reveal their own perceived advantages and drawbacks of the feedback provided by the software ProWritingAid. As clearly illustrated in table 3.14, the respondents appraised the software's ability to detect and indicate different types of errors as well as its ability to supplement a variety of suggested corrections. In contrast, three out of five students pointed out the software's underlying weaknesses. In this effect, one student commented "It does not relate to the content of the essay" and another put "it isnot an advanced tool …".

Q20. In your opinion, what is the optimal method for employing automated feedback? Please state why.

Figure 3.9

Students' preferred method for AWE feedback implementation



This question served to offer the respondents the chance to voice their opinion about the better application of automated feedback. The students were given three options of AWE implementation: a) essays being evaluated only by automated writing evaluation software, b) essays being only evaluated by teachers and c) teachers evaluation as a fellow-up to the feedback generated by the automated evaluation software. As shown in figure 3.9, the overwhelming majority of students (80%) preferred the integration of both teacher and automated feedback whereas only 20% of them preferred the separate integration of AWE feedback for writing evaluation.

Q21 Are you willing to use ProWritingAid in the future?

Without exception, all of the students proclaimed that they will be using ProWritingAid in the future. If anything, this reflects their positive perception and attitude toward computer-generated feedback.

Synthesising the questions' responses, we deduce that the investigated students generally hold a positive perception and attitude toward AWE feedback as a complementary writing assistant for improving writing accuracy.

Results of the teachers' interview

Teachers' interviews: Discovering teachers' perceptions and attitudes towards Automated Writing Evaluation feedback

In designing the semi-structured interview questions, we attempted to investigate two key areas. Six questions were aimed at exploring teachers' experience in teaching academic writing and/or written expression as well as their pedagogical practices in feedback provision. Another six questions were designed to elicit responses with regard to teachers' beliefs, perceptions, and attitudes toward Automated Writing Evaluation Feedback. We conducted three interviews with three written expression/ academic writing teachers.

Section one: teachers' experience in teaching academic writing and/or written expression and their pedagogical practices in feedback provision

First, we asked teachers how long they have been teaching written expression/ academic writing to see whether the variable of experience plays a role in teachers' beliefs and practices in teaching writing. The table below shows the period of teachers' writing instruction.

Table 3.15

Teachers' period of teaching written expression/ academic writing

Teachers	Span (years)
A	3
B	8
C	7

As illustrated in the table, teachers B and C have been teaching written expression for a relatively longer period of time than teacher A. We then asked about the writing teaching approach they opt for in teaching writing expression. As expected, older teachers use more traditional approaches to writing. Teacher B, the oldest of the three teachers, reported that he adopts the product-process approach in teaching written expression. In contrast, teachers A and B, teachers of a younger generation, seemed to apply an eclectic approach to teaching writing. According to teachers A and C, the eclectic approach is the most optimal approach to teaching EFL writing because "writing is a very demanding skill and our learners have different learning preferences. We try not to rely on one single approach because this will definitely not be beneficial for many students", teacher A contends. Without a doubt, teachers' beliefs in what writing is and how it should be taught influence pedagogical practices as well as students' attitudes toward the written expression course in general and the English academic writing in particular. Teachers were then asked to pinpoint the most recurring difficulties and challenges they meet in teaching written expression and/or academic writing. Their answers are illustrated in the table below

Table 3.16

Teachers' difficulties and challenges in teaching writing

Teacher	Difficulties and challenges in writing instruction
A	Difficulties relating to the transferability of output into correct input (learning) Repeated mistakes in areas that have been covered repeatedly
B	Content selection Lack of practice inside the classroom due to limited session time Problems in finding the balance between theory and practice Students' dependency on teachers to provide them with everything The challenge of providing feedback on the relatively large number of students productions
C	The time devoted to the module does not allow for much practice inside the classroom

As shown in the table above, teachers A, B, and C experience similar challenges in writing instruction. These challenges include, among others, 1) the lack of time allotted for the session and, as a result, lack of practice inside the classroom, 2) students' over-dependency on teachers to provide and explain the theoretical part of the lesson, 3) the challenge of attending to and providing corrective feedback on the relatively large number of students' productions and, 4) the lack of transferability of input into a correct output. On the latter note, teacher A commented "Sometimes we teach something for a

very long period of time … the struggle is basically with the practical part of written expression, with the committing mistakes or repeating the same mistakes". The lack of transferability of learning is not an unusual theme in the literature. As discussed in the first chapter, not all input results in learning due to such factors as the instruction method, learners' language level, and learners' motivation. The fourth question sought to unravel the type of problems students exhibit in their writing productions based on teachers' observations whose answers are summarized in the following table.

Table 3.17

Students' problems in writing based on teachers' observations

Teacher	Students' problems exhibited in their writing
A	Problems with coherence and cohesion. Issues with generating ideas and structuring essays. Problems with form, language, grammar, and vocabulary.
B	Unfamiliarity with the topic, generating ideas, and writing proper topic sentences. The lack of organisation, coherence, and cohesion. Struggling with the mechanisms of writing, spelling, punctuation, and grammar.
C	Grammatical mistakes, inaccurate spelling, and punctuation. Poor vocabulary, problems with cohesion and coherence. Differentiating between topic sentence and thesis statement.

As shown in the table, teachers reported on a variety of students' problems in writing. All three teachers stated that the majority of their students show low levels of

writing proficiency, which often hurdles the progress of the writing course. In the same vein, Teacher B adds "You find yourself revising the language, not the content … and if I focus on giving feedback on language, then I am jeopardising the focus on the content". Teachers usually have a course syllabus to follow and objectives to achieve. The mismatch between learners' current level and their expected level is what may lead to learners losing interest and motivation; therefore, slower or no learning gains.

We then asked teachers how often they provide feedback and what they take into consideration when doing so. The three interviewees reported that feedback is provided often. Teachers A and C reported that they provide different types of feedback, namely written feedback, oral feedback, structured, unstructured, coded, individual, and group feedback. They believe that different types of feedback benefit different types of students on different types of writing aspects. Teacher B, however, stated that he relies heavily on immediate, in-class, oral feedback. He argued the majority of students do not attend to delayed written feedback, so synchronous feedback is provided instead. The three interviewees did acknowledge the weight corrective feedback holds in fostering students' writing performance; they also did acknowledge that feedback should not be given arbitrarily as some important factors should be taken into consideration. Among these factors, the interviewees highlighted the learner's level and learner learning preferences factors. This demonstrates the importance of personalised corrective feedback which is often challenging to provide given the overcrowded classrooms and teachers' heavy workload.

Clearly, the first section of this interview did not touch on computer-generated feedback mainly because we wanted to lay the ground for the subsequent section. Computer-generated feedback is a relatively unfamiliar, under-researched area in the local

scene. To this end, the first section should not be seen as irrelevant to the second one; on the contrary, it served as a general overview of teachers' beliefs and perceptions on EFL writing and feedback provision which may or may not influence their perception of other delivery modes of feedback.

Section Two: Teachers' Perceptions and Attitudes Toward Automated Writing Evaluation (AWE) Feedback

Logically, before asking teachers about their perceptions of automated feedback, we asked whether or not they are familiar with AWE systems. All of the three interviewees named one particular AWE software: Grammarly. Teachers A and B stated that they have used it to edit and proofread their writing. Teacher C, however, stated that he has never used any AWE software for personal or instructional purposes. What is worth noting is that all the interviewees admitted that they are only familiar with automated feedback at face value (as a concept and not as a pedagogical practice).

Another pivotal question asked is whether or not teachers encourage students to use such software as an alternative writing assistant. Teacher A asserted that not only does he encourage students to refer to writing evaluation software but also provides free alternatives. On the other hand, teacher B stated that he does not feel the need to encourage his students because he knows they already use automated feedback services. Conversely, teacher C reported that he has never encouraged his learners to use AWE services. Teacher A along with B affirmed the usefulness and practicality of such automated evaluation services in assisting EFL students in their writing. On the latter note, teacher A argued that "as much as we think that automated writing evaluation services are not helpful because they correct directly; I think they are helpful to a certain degree, even scholars, professors, and native speakers use them".

Moving to the core of our research, we asked the interviewees whether they believe that computer-generated feedback helps students improve the accuracy of their writing. Teachers' answers are summarised in the following table.

Table 3.18

Teachers' beliefs on the effectiveness of AWE in helping students improve their writing accuracy

Teacher	Teachers' beliefs on the effectiveness of AWE
A	He believes that AWE feedback is helpful to a certain degree. He believes that AWE feedback helps draw students' attention to their repeated errors/mistakes through features like visual aids and metalinguistic explanations. He believes that AWE feedback helps students replace their inaccurate language patterns with correct, accurate patterns.
B	He believes that like any software, any technology-based tool in teaching/learning has its benefits and drawbacks. He suspects the effectiveness of AWE feedback in sharpening students' cognitive and analytical competencies needed in writing and editing. He believes that AWE feedback should be used as a last resort after students have proofread and edited their written compositions by themselves. He warns about the overdependence on AWE software and supports moderate use.
C	He believes that AWE feedback helps students improve the accuracy and quality of their writing solely in terms of grammar and mechanics.

	He argues that machines are unable to understand the pragmatic aspect of writing as well as humans do.
	He believes that AWE feedback has the potential of improving students' writing accuracy over time.

As demonstrated in the table above, all three teachers share some common ground with regard to beliefs on the effectiveness of AWE feedback in improving accuracy. They seem to be in accordance with the fact that AWE feedback as a writing assistant helps draw students' attention to their recurrent writing inaccuracies. Having noticed their errors/ mistakes, "students remember that they have committed that mistake before and, as a result, they will develop a new pattern of the right thing", teacher A explains. While teachers B and C did not deny the affordances of AWE feedback in assisting students' writing accuracy, they did spotlight some of its underlying limitations as well as its potential downsides. In doing so, they called for a conscious, cautious, and moderate use of such tools.

It has been clear thus far that the three teachers hold a relatively positive attitude toward AWE feedback. In question ten, we attempted to discover teachers' opinions of what they identify as effective and ineffective aspects of computer-generated feedback. Teachers B and C, as mentioned earlier, expressed their support for moderate use of any technological tool that promotes learning in any shape or form. Similarly, teacher A maintained that students should strive to take advantage of both modes of feedback (teacher and automated feedback). Yet, he considered the lack of interactivity in e-feedback to be a major deficiency. In the same line, teacher B identified another deficiency pertaining to the software's inability to correctly analyse and infer the contextual

dimension of the submitted written productions; as a result, these services would sometimes suggest faulty corrective feedback that confuses learners instead of helping them.

Given that automated writing evaluation software provides immediate personalised feedback on students' writing compositions, could it replace teachers' feedback? We included this question to gauge the teachers' overall perspective on how to best implement AWE feedback in the written expression/ academic expression course. The emerged answers are summarised in the following table

3.19

Teachers' beliefs on whether automated feedback can replace teacher feedback

Teachers	Teachers' beliefs
A	He believes that it is very difficult for AWE to replace face-to-face learning. He contends that teacher feedback and automated feedback should be seen as complementary to each other.
B	He believes that teachers are the best asset for content-based and organisational feedback. He perceives the two modes of feedback as complementary as opposed to alternatives.
C	He argues that it is impossible to replace teacher feedback. He believes that students should use AWE software for language-based feedback before submitting essays to the teacher for feedback on content and organisation.

It does not come to our surprise that the interviewees agree that teachers' writing evaluation cannot be replaced with computer-generated evaluation. As Teacher A has already noted, interactivity in learning is pivotal, a feature e-learning has yet to develop. As demonstrated in the table, all three teachers consider automated feedback as complementary to teacher feedback. Substantially, teacher B encourages both students and teachers to embrace AWE services when he remarked "we have to embrace all that is novel and innovative in teaching and learning … I think we are having a bonus next to our potential with the help of technology". In agreement with the literature, teacher C believes that the most effective way of implementing both modes of feedback is to use AWE feedback for lower-order concerns of writing (revising grammar and mechanics) and teacher feedback for higher-order concerns such as content and organisation.

Research findings showed that students' employment of AWE feedback has helped them reduce some types of errors. The literature has also demonstrated that students' use of AWE feedback could either make teachers' jobs easier or more difficult. On asking the teachers whether they believe students' use of automated feedback would facilitate or complicate their writing instruction, they responded as follows.

Table 3.20

Teachers' beliefs on the pedagogical merits of AWE feedback

Teachers	Teachers' beliefs
A	He believes students' use of AWE feedback would make their work easier. He questions whether it would be helpful for the students

B	He confirms that it would facilitate teachers' work. He insists that AWE feedback would help students learn from their mistakes
C	He believes that it would make teachers' jobs easier to a certain extent.

Bluntly, teachers believe that the implementation of AWE would make their work easier to a certain degree as it would bring students' attention to their most recurrent grammatical mistakes/errors thus freeing the teachers to focus on other more advanced aspects of writing.

3.5 Discussion and Summary of the Findings

Unlike the preceding section which was limited to describing and summarising the data obtained from the previously mentioned three data collection methods, the present section constitutes a summary of the findings along with discussion and interpretation.

This research was initiated as an attempt to examine the effects of computer-generated feedback on EFL students' writing accuracy. In addition, it attempted to find out the extent to which computer-generated feedback helps students notice their erroneous language patterns, as well as specify both teachers' and students' perceptions and attitudes towards automated writing evaluation feedback.

Following the nature and aim of the study, three data collection methods were employed in hopes of answering the three posed research questions. These questions along with their corresponding research hypotheses will be discussed in this section.

Research Question 1**:** Does ProWritingAid feedback affect students' essay writing accuracy?

This question was mainly designed to probe the effect of AWE feedback as a form-focused writing evaluator on students' writing accuracy. To answer this question, an explanatory sequential research design with a one-group-pretest-posttest design was employed for this investigation. Following the said design, 7 participants were tested before and after the implementation of the AWE feedback through the software ProWritingAid.

As previously mentioned, the pre-test and post-test essay drafts were analysed by means of accuracy measures. The accuracy measure adopted in this study is the total number of errors divided by the total number of T-units. The latter is defined as "one main clause with all subordinate clauses attached to it" (Hunt, 1965, p.20). With reference to the post-test, results revealed that AWE feedback has helped students reduce the overall number of errors. This positive effect is evidenced in the students' pre-test and post-test mean values. The difference between the former and the latter demonstrates that students reduced more than half of the errors committed in the pre-test; precisely, students made about 0.69 errors/T-unit less in their essay redrafts.

This reduction of errors, although significant, does not imply that students have developed in terms of accuracy because, out of seven students, three students still made about 2.08 to 0.65 errors per T-unit which is a high score of errors. This may be attributed, as one of the interviewed teachers suggested, to students' prior language proficiency levels.

Given the small sample size (7) of the present study, it is very unlikely to generalise the results to the larger population. Suitably, no inferential statistical measures were conducted. Hence, based on the pre-test and post-test mean values, we can preliminarily

conclude that AWE feedback has positive short-term effects on students' writing accuracy; however, as far as hypothesis testing is concerned, rejecting or accepting the null hypothesis requires further investigations on larger sample sizes over longer periods of treatment in order to ascertain the long-term effects of AWE feedback on learners' overall writing accuracy.

In this respect, it is safe to say that AWE feedback through ProWritingAid had a positive effect on students' overall short-term writing accuracy in the sense that students did not only correct the errors highlighted by the software but also corrected some of the errors which the software overlooked. In the same way, the literature has also proven that the use of computer-generated feedback not only encourages students to revise their work but also improves students' writing accuracy overdrafts (Hockly, 2019).

Research Question 2: To what extent does ProWritingAid feedback help students notice and revise their most recurrent language problems?

As it has been established in the results section, accuracy measures fail to capture the nature and magnitude of the language gains. In other words, such measures cannot describe precisely the nature of corrected/ learned language patterns and/or structures. This means that while AWE feedback could assist students in improving their overall writing accuracy, it does not necessarily indicate that it directs their attention to their most persistent language problems (i.e., errors).

In pursuance of answering the second research question, the researcher followed the following steps: first, students' pre-test drafts were uploaded by the researcher to the software ProWritingAid in order to count and categorise the software-detected errors. Second, the researcher pursued to analyse and identify the errors which the software overlooked (see table 3.4). Third, the students' post-test drafts were analysed to document

the number and types of corrections made by the students independently or in response to the software feedback.

It was clear, from a preliminary inspection, that the number and the types of errors spotted by the researcher significantly outnumbered those detected by ProWritingAid. More so, the software failed to detect a considerable number of recurrent errors in such categories as subject-verb agreement errors, preposition errors (misplaced or unnecessary use), and article errors (misuse or missing article).

Although students' responses to the questionnaire reflect their belief that ProWritingAid feedback helped them reduce the overall number of errors, the data from the corpus analysis suggests otherwise. As a matter of fact, only 27% of the total number of errors were spotted by the software, which mostly pertained to punctuation and spelling errors. Even though, as one of the interviewed teachers proclaimed, in academic writing punctuation and spelling errors are intolerable, other types of errors (such as verb tense, verb form, word form, subject-verb agreement, and word order) may obscure effective communication.

Given the fact that the software detected only about a quarter of the overall committed errors on a limited range of error types, we can come to the conclusion that ProWritingAid feedback did not draw students' attention to their most recurrent language problems; however, students' use of the program appears to have endorsed the proofreading and editing processes which is possibly why they were able to make correct corrections even without the assistance of corrective feedback. Even the inaccurate, misleading WCF seems to have triggered students to notice language forms, which, conceivably, facilitates the acquisition of correct language forms and promotes learner autonomy.

In short, we can say that ProWritingAid feedback did not help students notice and revise their most recurrent language problems; however, the use of the software did promote students' revision based on the simple fact that students made nearly the same number of error corrections with or without the assistance of automated written corrective feedback.

Research Question 3: What are the students' and teachers' perceptions and attitudes with regard to the effectiveness of automated feedback for improving writing accuracy?

The final research question was designed to disclose the perceptions and attitudes of both the participants of the current inquiry and the interviewed teachers toward Automated Writing Evaluation feedback as a writing assistant for improving EFL students' writing accuracy. In light of the affordances of AWE services and feedback, it was hypothesised that students and teachers may hold positive attitudes vis-à-vis the use and implementation of AWE feedback.

Although some of the interviewed teachers were not very well informed of AWE feedback (teacher C), they all seemed to have positive attitudes towards it. Mindful of its limitations, teachers have all supported the judicious and effective use of these computerised services. In this respect, the said teachers suggested a hybrid integration of both mediums of feedback where the linguistic aspect of the written composition are reviewed by an automated evaluation system, thereby freeing the teacher to evaluate and provide feedback on the higher-order concerns of writing.

In analysing the post-treatment questionnaire responses, one could infer that all students emerged to have positive attitudes toward the use of AWE software to improve their writing accuracy. Although some of the informants pointed out its shortcomings, the majority of them appeared to be satisfied with the feedback delivered by ProWritingAid.

Seemingly, students were mostly satisfied with the software's ability to detect and identify the types of errors as well as suggest their corresponding corrections. This meta-linguistic feedback does not only help students notice and correct their errors but also develops their long-term language competence (Hyland, 2003). Similar to the teachers' suggestions, students thought it is best if both traditional and automated writing evaluation be integrated together for more learning gains.

Conclusion

This final chapter strove to display, describe, summarise, and analyse the data gathered from the mentioned data collection tools. First, the chosen methodological decisions of this study were described and justified. Then, the obtained results of the study's three data collection methods were thoroughly described and analysed. Finally, these results were discussed and synthesised in relation to the raised research questions in order to draw the final conclusions.

General Conclusion

Writing is a complex skill demanding a complex set of linguistic and cognitive competencies. In the academic arena, EFL students need to develop their writing skills in order to engage in effective communication. Nevertheless, EFL students' writing is oftentimes branded as ineffective, inaccurate, and obscure. In an attempt to help students develop accuracy in writing and address their linguistic needs, writing instructors employ a variability of instructional methods and techniques, one of which is the provision of form-focused feedback. However, teacher feedback does not always satisfy students' learning needs and expectations; as a result, more and more students are looking into the use of automated writing evaluation software to complement the traditional teacher-mediated feedback.

Research findings into the effects of AWE feedback on students' writing accuracy have been inconclusive and sometimes paradoxical. In this regard, and as we observed that the majority of the participants had a relatively low level of grammar accuracy, we suggested the use of AWE feedback through the software ProWritingAid. Accordingly, the present study aimed at examining and measuring the effects of computer-generated feedback through the software ProWritingAid on students short-term writing accuracy. Following the non-probability convenience sampling technique, 7 master one EFL students at Biskra University were chosen as the sample for the current investigation along with three written expression/ academic writing instructors.

Dictated by the nature and purpose of the current investigation which inquired about the effect of using AWE feedback on writing accuracy as well as teachers' and students' attitudes regarding the use of computer-generated feedback, a case study design along with explanatory sequential mixed method on one-group pretest posttest design was deemed the most suitable. Correspondingly, both qualitative and quantitative data collection tools were used to gather relevant data, namely a pre-test and post-test, a

post-treatment questionnaire, and a teacher's interview. Qualitative and quantitative analysis procedures were applied to analyse the obtained data.

Results of the tests (pre-test and post-test) revealed that the use of ProWritingAid had helped the majority of students reduce the overall errors in the essay redrafts with or without the offered feedback. This positive effect accentuates the effectiveness of computer-generated feedback in helping students engage more in the process of writing by creating multiple learning opportunities thanks to its instantaneous feedback. It is nonetheless noteworthy that although the number of overall errors decreased in the post-test, the majority of students' writing accuracy remained relatively low. Additionally, the software failed to detect the majority of students' errors. In this respect, generally speaking, it was concluded that the AWE feedback had a positive effect on students' short-term writing accuracy; however, further longitudinal research is compulsory to determine the long-term effectiveness of computer-mediated feedback on students' writing accuracy.

In addition, it was found, through students' questionnaire responses that the implementation of automated writing evaluation feedback yielded positive attitudes. The majority of the informants expressed high levels of satisfaction with the feedback they received and reported that they will be using the software in the future. Quite similarly, the interviewed teachers reflected positive views vis-à-vis the usefulness and effectiveness of AWE feedback in ameliorating students' writing accuracy and metalinguistic knowledge, thereby alleviating some of the challenges they experience in teaching written expression.

Implications and Recommendations

Based on the obtained research results, the following pedagogical implications were drawn to provide some considerations that should be taken into account in order to help

students attain academic level writing proficiency in general and to better implement AWE feedback to improve students' writing accuracy in particular.

- First, teachers should seek to raise students' awareness of the vital role of writing, writing accuracy, and feedback in the academic setting.
- Although challenging, teachers need to be mindful of their students' learning preferences, writing strengths, and weaknesses from the outset of the academic year (through observation, diagnostic tests, or one-on-one conferences with the students) so as to make effective pedagogical decisions.
- As far as automated feedback is concerned, teachers need to familiarise themselves as well as their students with the available effective AWE programs.
- Teachers should encourage the judicious use of AWE programs by raising students' awareness of the affordances and limitations of the computer-mediated feedback. In other words, AWE feedback should be presented as complementary to traditional teacher-mediated feedback and not as an alternative.
- Students should seek to develop their writing proficiency in general and their writing accuracy in particular by creating further learning opportunities other than those assigned by the teachers.
- Students should make use of available free AWE programs to proofread their written compositions which would in return help them develop learning autonomy, metalinguistic knowledge, and analytical revision skills.

Limitations and Suggestions for Further Research

By no means, no study is perfect or free of limitations; these reflect the underlying challenges and issues that have emerged throughout the research process. Accordingly, the following are the limitations encountered while undertaking the present research.

The first prominent challenge is the inaccessibility of the participants. Out of 10 students, only 7 were committed and motivated to use the software and submit the required essay drafts. Therefore, and due to the small-sample size, the results could not be generalised to the larger population.

Another substantial limitation of this research project is that the treatment span was very short. This was due to the few written assignments assigned to master one student in the academic writing course.

Finally, the unavailability of books and articles in relation to AWE feedback in EFL writing settings created a major challenge for the researcher.

Based on the disclosed limitations, the researcher recommends future researchers to replicate the same study on a larger sample size over a long period of treatment in order to examine the longitudinal effects of AWE feedback on EFL students' writing accuracy and perceptions. Finally, it would be more apposite for future researchers to implement another more effective AWE program since the program used in this study proved to suffer from major technical limitations.

References

Ashoori Tootkaboni, A., & Khatib, M. (2014). The Efficacy of Various Kinds of Error Feedback for Improvement in the Writing Accuracy of Iranian EFL Learners. Bellaterra Journal of Teaching & Learning Language & Literature, 7(3), 30. https://doi.org/10.5565/rev/jtl3.529

Barone, S. M., & Cargile, C. (2020). L1 and L2 Writing Differences: From Understanding to Practice. English Teaching Forum. https://americanenglish.state.gov/forum

Bitchener, J., & Knoch, U. (2009). The Contribution of Written Corrective Feedback to Language Development: A Ten Month Investigation. Applied Linguistics, 31(2), 193–214. https://doi.org/10.1093/applin/amp016

Bitchener, J., & Storch, N. (2016). Written Corrective Feedback for L2 Development (Second Language Acquisition, 96) (Reprint ed.). Multilingual Matters.

Bitchener, J., Young, S., & Cameron, D. (2005). The effect of different types of corrective feedback on ESL student writing. Journal of Second Language Writing, 14(3), 191–205. https://doi.org/10.1016/j.jslw.2005.08.001

Broughton, G., Broughton, G., Brumfit, C., & Pincas, A. (1980). Teaching English as a Foreign Language (Routledge Education Books) (2nd ed.). Routledge.

Broughton, G., Brumfit, C., Flavell, R., Hil, P., & Pincas, A. (2003). Teaching English as a Foreign Language. Abingdon =-on-Thames: Routledge & Kegan Paul Ltd Fq.

Brown, H. D. (2007). Principles of Language Learning and Teaching. Pearson Longman.

Byrne, D. Teaching writing skills. London: Longman.

Celce-Murcia, M. (1991). Grammar Pedagogy in Second and Foreign Language Teaching. TESOL Quarterly, 25(3), 459. https://doi.org/10.2307/3586980

Chandler, J. (2003). The efficacy of various kinds of error feedback for improvement in the accuracy and fluency of L2 student writing. Journal of Second Language Writing, 12(3), 267–296. https://doi.org/10.1016/s1060-3743(03)00038-9

Chen, C. & Cheng, W. (2008). Beyond the Design of Automated Writing Evaluation: Pedagogical Practices and Perceived Learning Effectiveness in EFL Writing Classes. Education Language Learning and Technology

eCotos, E. (2011). Potential of Automated Writing Evaluation Feedback. CALICO Journal, 28(2), 420–459. https://doi.org/10.11139/cj.28.2.420-459

Corder, S. P. (1967). The Significance of Learners' Errors. International Review of Applied Linguistics in Language Teaching, 5, 161-170. http://dx.doi.org/10.1515/iral.1967.5.1-4.161

Corder, S. P. (1973). Introducing applied linguistics. Harmondsworth England; Baltimore: Penguin Education.

Cotos, E. (2011). Potential of Automated Writing Evaluation Feedback. CALICO Journal, 28(2), 420–459. https://doi.org/10.11139/cj.28.2.420-459

Creswell, J. W. (2022). Research Design: Qualitative, Quantitative and Mixed Methods Approaches (4th ed.). SAGE Publications, Inc.

Dikli, S., & Bleyle, S. (2014). Automated essay scoring feedback for second language writers: How does it compare to instructor feedback? Assessing Writing, 22, 1–17

Ellis, R. (1994). A theory of Instructed Second Language Acquisition. Academic Press

Ellis, R. (1997). Second Language Acquisition. Oxford: Oxford University Press.

Ellis, R. (2009). Corrective Feedback and Teacher Development. L2 Journal, 1(1). https://doi.org/10.5070/l2.v1i1.9054

Ferris, D. (1999). The case for grammar correction in L2 writing classes: A response to truscott (1996). Journal of Second Language Writing, 8(1), 1–11. https://doi.org/10.1016/s1060-3743(99)80110-6

Ferris, D. (2013). Written corrective feedback in second language acquisition and writing studies. Language Teaching, 45(4), 446-459. doi:10.1017/S0261444812000250

Ferris, D. R. (1995). Student Reactions to Teacher Response in Multiple-Draft Composition Classrooms. TESOL Quarterly, 29(1), 33. https://doi.org/10.2307/3587804

Ferris, D. R. (2010). Second Language Writing Research and Written Corrective Feedback in SLA. Studies in Second Language Acquisition, 32(2), 181–201. https://doi.org/10.1017/s0272263109990490

Ferris, D. R. (2012). Written corrective feedback in second language acquisition and writing studies. Language Teaching, 45(4), 446–459. https://doi.org/10.1017/s0261444812000250

Ferris, D., & Roberts, B. (2001). Error feedback in L2 writing classes. Journal of Second Language Writing, 10(3), 161–184. https://doi.org/10.1016/s1060-3743(01)00039-x

Foster, P., & Skehan, P. (1996). The Influence of Planning and Task Type on Second Language Performance. Studies in Second Language Acquisition, 18(3), 299–323. https://doi.org/10.1017/s0272263100015047

Guénette, D. (2007). Is feedback pedagogically correct? Journal of Second Language Writing, 16(1), 40–53. https://doi.org/10.1016/j.jslw.2007.01.001

Hadley, A. O. (2003). Teaching language in context. Boston: Heinle and Heinle Publishers.

Hinkel, E. (2002). Second language writers' text. Mahwah, NJ: Lawrence Erlbaum.

Hinkel, E. (2004). Teaching academic ESL writing: Practical techniques in vocabulary and grammar. Mahwah, NJ: Lawrence Erlbaum.

Hockly, N. (2018). Automated writing evaluation. ELT Journal, 73(1), 82–88. https://doi.org/10.1093/elt/ccy044

Housen, A., & Pierrard, M. (Eds.). (2005). The importance of form/meaning mappings in explicit form-focused instruction. Studies on Language Acquisition. https://doi.org/10.1515/9783110197372.2.199

Hunt, K. (1965). Grammatical structures written at three grade levels. NCTE Research Report No. 3. Champaign, IL, USA: NCTE.

Hunt, K.Syntactic Maturity in School children and adults. In Monographs of the Society for Research in Children Development, 53(134).

Hyland, K. (2003). Second Language Writing (Cambridge Language Education) (1st ed.). Cambridge University Press.

Hyland, K. (2009). Teaching and Researching Writing (Applied Linguistics in Action) (2nd ed.). Routledge.

Hyland, K., & Hyland, F. (2006). Feedback on second language students' writing. Language Teaching, 39(2), 83–101. https://doi.org/10.1017/s0261444806003399

James, C. (1998). Errors in Language Learning and Use: Exploring Error Analysis. Longman, Essex.

Jinrong Li, Stephanie Link, Volker Hegelheimer,

Rethinking the role of automated writing evaluation (AWE) feedback in ESL writing instruction,Journal of Second Language Writing,Volume 27, 2014, Pages 1-18,ISSN 1060-3743,https://doi.org/10.1016/j.jslw.2014.10.004.

Kroll, B. (1990). Second Language Writing (Cambridge Applied Linguistics): Research Insights for the Classroom. Cambridge University Press.

Lahuerta, Ana Cristina (2016). Study of accuracy and grammatical complexity in EFL writing. International Journal of English Studies, 18(1), 71–89. doi:10.6018/ijes/2016/1/258971

Larsen-Freeman, D. (2003). Teaching Language: From Grammar to Grammaring. Boston, MA: Thompson-Heinle.

Li, S. (2017). Teacher and learner beliefs about corrective feedback. In H. Nassaji & E. Kartchava (Eds.), Corrective feedback in second language teaching and learning (pp. 143-157). NY: Routledge.valuation: Pedagogical practices and perceived learning effectiveness in EFL

Manchón, R. M., & Polio, C. (2021). The Routledge Handbook of Second Language Acquisition and Writing (The Routledge Handbooks in Second Language Acquisition) (1st ed.).

Routledge.n. (2008). Be-aLi, J., Link, S., & Hegelheimer, V. (2015). Rethinking the role of automated writing evaluation (AWE) feedback in ESL writing instruction. Journal of Second Language Writing, 27, 1–18. https://doi.org/10.1016/j.jslw.2014.10.004

n. (2008)iLi, Z., Feng, H. H., & Saricaoglu, A. (2016). The Short-Term and Long-Term Effects of AWE Feedback on ESL Students' Development of Grammatical Accuracy. CALICO Journal, 34(3), 355–375. https://doi.org/10.1558/cj.2638rceived learning effectiveness in EFL writing

Nassaji, H., & Kartchava, E. (2021). The Cambridge Handbook of Corrective Feedback in Second Language Learning and Teaching (Cambridge Handbooks in Language and Linguistics). Cambridge University Press.

ONeill, R., & Russell, A. (2019). Stop! Grammar time: University students' perceptions of the automated feedback program Grammarly. Australasian Journal of Educational Technology, 35(1). https://doi.org/10.14742/ajet.3795

Onozawa, C. (2010). A Study of the Process Writing Approach: A Suggestion for an Eclectic Writing Approach.

Othman, N. B. (2015). Understanding EFL Students' errors in writing. Journal of Education and Practice, 6(32), 99-106. http//iiste.org/Journals/index.php/JEP

Polio, C. (2019). Keeping the language in second language writing classes. Journal of Second Language Writing, 46, 100675. https://doi.org/10.1016/j.jslw.2019.100675

Qu, W. (2017). For L2 writers, it is always the problem of the language. Journal of Second Language Writing, 38, 92–93. https://doi.org/10.1016/j.jslw.2017.10.007

Quintero, Inagaki, Kim, 1998 second language development in writing: measures of fluency, accuracy, and complexity.

Ranalli, J. (2018). Automated written corrective feedback: How well can students make use of it? Computer Assisted Language Learning, 31(7), 653–674.

Ranalli, J. (2018). Automated written corrective feedback: how well can students make use of it? Computer Assisted Language Learning, 31(7), 653–674. https://doi.org/10.1080/09588221.2018.1428994

Richards, J. C. (1971). A non-contrastive approach to Error Analysis. English Language Teaching Journal, 25, 204-219.

Robb, T., Ross, S., & Shortreed, I. (1986). Salience of Feedback on Error and Its Effect on EFL Writing Quality. TESOL Quarterly, 20(1), 83. https://doi.org/10.2307/3586390

Silva, T. J., & Matsuda, P. K. (2001). On Second Language Writing. Lawrence Erlbaum Associates.

Skehan, P. (1989). Individual Differences in Second Language Learning. Studies in Second Language Acquisition, 13(2), 275–298. https://doi.org/10.1017/s0272263100009979

Skehan, P. (1996). A Framework for the Implementation of Task-based Instruction. , 17(1), 38–62. doi:10.1093/applin/17.1.38

Smith, R. C., & Broughton, G. (1980). TEACHING ENGLISH AS A FOREIGN LANGUAGE. . . Routledge.

Stevenson, M., & Phakiti, A. (2014). The effects of computer-generated feedback on the quality of writing. Assessing Writing, 19, 51–65.

Thi, N. K., & Nikolov, M. (2021). How Teacher and Grammarly Feedback Complement One Another in Myanmar EFL Students' Writing. The Asia-Pacific Education Researcher. https://doi.org/10.1007/s40299-021-00625-2

Tran, L. T. (2013). International Student Adaptation to Academic Writing in Higher Education. Newcastle, UK: Cambridge Scholars Publishing. http://www.cambridgescholars.com/download/sample/59197

Truscott, J. (1996). The Case Against Grammar Correction in L2 Writing Classes. Language Learning, 46(2), 327–369. https://doi.org/10.1111/j.1467-1770.1996.tb01238.x

Truscott, J., & Hsu, A. Y. P. (2008). Error correction, revision, and learning. Journal of Second Language Writing, 17(4), 292–305. https://doi.org/10.1016/j.jslw.2008.05.003

Ware, P. (2011). Computer-generated feedback on student writing. TESOL Quarterly, 45(4), 769–774

Ware, P. (2011). Computer-Generated Feedback on Student Writing. TESOL Quarterly, 45(4), 769-774. Retrieved June 23, 2022 from

Weigle, S. C. (2013). English language learners and automated scoring of essays: Critical considerations. Assessing Writing, 18(1), 85–99. https://doi.org/10.1016/j.asw.2012.10.006

Zhe Victor Zhang, Assessing Writing, https://doi.org/10.1016/j.asw.2019.100439

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Appendices

Appendix 01

Teachers' interview

Interview Questions:

Q1. How long have you been teaching writing/ academic writing?

Q2. What writing teaching approach/method do you opt for in teaching writing/academic writing?

Q3. Briefly, what difficulties and/or challenges did/do you meet in your writing/ academic writing teaching?

Q4. Based on your observation, what type(s) of problems do students exhibit in their writing compositions?

Q5. How often do you provide feedback on your students' writing compositions? and does the provision of feedback help students revise and improve the quality of their writings?

Q6. What do you take into consideration when providing feedback?

Q7. Are you familiar with automated writing evaluation or computer-generated feedback? Have you ever used any AWE software before? And what for?

Q8. Do you encourage students use of AWE software like Grammarly to grammar-check and/or revise their writing compositions?

Q9. Do you believe that computer-generated feedback help students improve the accuracy and quality of their writing? How?

Q10. What areas of the e-feedback do you think are effective and/or ineffective?

Q11. Given the fact that AWE software provide immediate personalised feedback on students' writing compositions, do you believe that e-feedback could replace teacher feedback? Justify?

Q12. Do you think students' use of AWE feedback for writing evaluation would make teachers' work easier or more complicated? Why?

Q13. Would you like to add anything?

Appendix 2

Teacher Interview Consent Form

Interview Consent Form

Participant Name
Fatima Ezzahra SBAA

Date of Interview
04/26/2022

Project/Research Title
Investigating the effect of AWE feedback on EFL learners' essay writing accuracy: the case of master students at Biskra University

Description of the Project
The current study is entitled 'Investigating the Effect of Automated Writing Evaluation Feedback on EFL Learners' Essay Writing Accuracy: The Case of Master Students of English at Biskra University". The general aim of this study is to investigate the effects of e-feedback on learners' essay writing accuracy

- I confirm that my participation in this research project is voluntary.
- I understand that I will not receive any payments for participating in this research interview.
- I understand that most interviewees will find the discussion interesting and thought-provoking. I have the right to decline to answer any question or to end the interview.
- I confirm that the research interview will last approximately 20-30 minutes.
- I understand that the researcher will not identify me by name in any reports using information obtained from this interview and that my confidentiality as a participant in this study will remain secure.
- I have read and understood the explanation provided to me.
- I have been given a copy of the consent form.
- I wish to review the notes, transcripts, or other data collected during the research interview.
- I agree that the researchers may publish documents that contain quotations by me.

By signing this form, I agree to the terms indicated above.

Appendix 3

Students' Structured Questionnaire

Students' perception of using computer-generated feedback to improve their writing accuracy

Dear students,

This questionnaire is a part of a Master's thesis entitled: "Investigating the Effect of Automated Writing Evaluation Feedback on Learners' Essay Writing Accuracy". You are kindly requested to select the answer(s) that you think is (are) most appropriate and provide complete answers whenever necessary. Your answers and personal opinions will be of great assistance in gathering data and making the current research valid and reliable. Your answers will be treated anonymously and confidentially.

Thank you very much for your collaboration

*Required

Section one: Students' perceptions of writing and feedback on writing

1. Q1. Would you please specify your gender? *

Mark only one oval.

- Male
- Female

2. Q2. How do you evaluate your English writing proficiency? *

Mark only one oval.

- Advanced
- Upper-intermediate
- Intermediate
- Beginner

3. Q3. According to you, what is the most difficult aspect of writing? *

Mark only one oval.

- ◯ Grammar
- ◯ Vocabulary
- ◯ Content
- ◯ Spelling
- ◯ Punctuation
- ◯ Others

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4. Other difficulties

5. Q4. How much do you agree or disagree with the following statements? *

Mark only one oval per row.

	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
I find English writing important					
I find English writing difficult					
During writing, I find grammar difficult					
During writing, I find spelling difficult					
During writing, I find punctuation difficult					
I find feedback on writing important					
I find grammar feedback on writing important					
I am satisfied with the grammar feedback teacher provided by the					
I am satisfied with the content feedback teacher provided by the					

6. Q5. What kind of feedback do you prefer to receive or think will benefit you the most*

Mark only one oval.

- Feedback on Grammar
-
-
-

Feedback on mechanics (spelling, punctuation, capitalization)

Feedback on vocabulary

Feedback on organization

Content-based feedback

Other:

7. If others, please specify

_____

8. Q6.How often do you attend to/make use of the feedback provided by the writing teacher * ?

Mark only one oval.

- Always
- Very often
- Often
- Sometimes
- Rarely
- Never

Section Two: Learners' experience with ProWritingAid feedback

9. Q7. Were you familiar with automated evaluation software before (like Grammarly)? *

Mark only one oval.

- Yes
- No

10. Q8. If yes, have you used it before to complete your writing assignments? *

Mark only one oval.

- Yes
- No

11. Q9. Did you encounter any problems when using the software ProWritingAid ? *

Mark only one oval.

- Yes
- No

12. If yes, please state them

_____

13. Q10. Were you satisfied with the grammar feedback you received from ProWriting aid *

Mark only one oval.

- Yes
- No

14. Justify please *

_____

15. Q11. were you satisfied with the spelling and punctuation feedback you received from * ProWritingAid?

Mark only one oval.

- Yes
- No

16. Justify please

_____

17. Q12. Did you pay much attention to the suggested corrections? *

Mark only one oval.

- ◯ Yes
- ◯ No

18. Q13. Upon receiving feedback from ProWritingAid , What strategies did you opt for in * revising and editing your essay?

Mark only one oval.

- ◯ accept all suggestions
- ◯ Ignore all suggestions
- ◯ Accept some
- ◯ Reread the essay and evaluate the provided feedback in relation to the essay

Other: _____

19. Other strategies

_____

20. Q14. What kind of feedback was the most helpful to you? *

_____

Students' perceptions of and attitudes towards computer-generated feedback by ProWritingAid

21. Q15. What was, if any, your perception regarding computer-generated feedback? *

22. Q16. What is your general perceptions now after having used ProWritingAid? *

23. Q17. How much do you agree or disagree with the following statements? *

Mark only one oval per row.

	Strongly disagree	Disagree	Neurtral	Agree	Strongly agree
I find ProWritingAid feedback useful	◯	◯	◯	◯	◯
I find ProWritingAid feedback accurate	◯	◯	◯	◯	◯
ProWritingAid feedback helped reduce errors in my composition	◯	◯	◯	◯	◯
ProWritingAid feedback helped me improve the accuracy of my essay	◯	◯	◯	◯	◯

24. Q18. Based on your experience, can you identify the strengths of ProWritingAid * feedback?

25. Q19. Based on your experience, can you identify the weaknesses of ProWritingAid * feedback?

26. Q20. In your opinion, what is the optimal method for employing Automated feedback? *

Mark only one oval.

- Essays being evaluated only by automated writing evaluation software
- Essays being only evaluated by teachers
- Teacher tutoring as a follow-up to the feedback generated by the automated evaluation software

27. Please state why *

28. Q.21 Are you willing to use ProWritingAid in the future? *

Mark only one oval.

- Yes
- No

29. Please state why or why not *

30. Would you like to add something?

Résumé

Cette étude utilise une approche à méthodes mixtes pour explorer les effets à court terme des commentaires d'évaluation d'écriture automatisés via ProWritingAid sur la précision d'écriture des étudiants EFL au Département de langue et littérature anglaises de l'Université de Biskra. La présente étude visait également à décrire les attitudes des élèves et des enseignants à l'égard de l'utilisation et de la mise en œuvre d'un logiciel d'évaluation de l'écriture automatisée et de la rétroaction. Les résultats obtenus à partir du pré-test et du post-test ont révélé que l'utilisation de ProWritingAid a un effet globalement positif sur la précision d'écriture à court terme des étudiants. De plus, les résultats des entretiens semi-structurés des enseignants et du questionnaire semi-structuré post-traitement des étudiants ont révélé leurs perceptions et confirmé les avantages potentiels de la rétroaction d'évaluation automatisée de l'écriture en tant qu'assistant d'écriture et outil pour aider les étudiants EFL à améliorer leur précision d'écriture. . Par conséquent, il est recommandé aux professeurs d'écriture académique d'encourager la mise en œuvre et l'utilisation de logiciels automatisés d'évaluation de l'écriture à l'intérieur et à l'extérieur de la salle de classe.