



The Impact of Grammarly Software on Enhancing Writing Skills among EFL Learners*

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Abstract

In light of ongoing challenges in writing education and the needs of digital-native learners, this study explored the effectiveness of using the free version of Grammarly in the writing development of EFL learners. Thirty-three TEFL students at Shahid Rajaee University were randomly selected and participated in the study. Using a quantitative one-group design, their writing performance was assessed through six tasks and analyzed via one-way Repeated Measures MANOVA. The results indicated a consistent improvement in overall writing performance through the regular use of Grammarly as an automatic corrective feedback tool. To identify which writing components improved, an RM-MANOVA was conducted on grammar, spelling, punctuation, and clarity. The analysis showed significant improvement only in grammatical accuracy, with other aspects remaining unchanged. These findings highlight Grammarly's potential in enhancing grammatical skills. The study contributes to ELT by encouraging the integration of ICT-related content into the EFL curriculum and teacher training programs, emphasizing the role of AI tools in language learning. These findings highlight the increasing impact of AI-powered tools in improving writing skills for language learners. Educators should balance automated feedback with personalized instruction. As research on effectiveness of Grammarly is still limited, further studies are necessary to fully understand its educational potential.

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Introduction

Over the past few years, technological advancements in education have allowed for more sophisticated capabilities than ever before to be made available in the realm of new trends in language instruction and evaluation. (Parra G & Calero S, 2019). Technology has made what was once a tedious process of education more engaging and easily accessible. There is little debate that writing now plays a crucial role, especially in the educational milieu. While the acquisition of writing skills is widely recognized as a fundamental goal in foreign language education (Vakili & Ebadi, 2019), mastering this particular skill is commonly regarded as the most formidable challenge for learners of English as a foreign language (Du, 2020; Jabali, 2018). In addressing the formidable task of equipping EFL learners with the capacity to proficiently craft well-structured essays, various scholars, such as Anh (2019), Zandi and Krish (2017), and Aydin and Yildiz (2014), advocate for the incorporation of cutting-edge and auspicious technology-enhanced instructional methods (TEIs) within the pedagogy of writing skills.

Writing in an academic setting is widely acknowledged as an essential ability for learners to enhance their educational accomplishments at an advanced level of higher education (Faisal & Carabella, 2023). Academic writing performs as a means of generating unique content (Arisandi & Sudarajat, 2023). Writing tasks often involve the use of improper words, which require students to consider the structure of the language, including diction, word choice, and spelling. In his work, Lasi (2019) emphasizes the importance of grammatical accuracy in preserving the accuracy and readability of the author's intended message in their writing.

Grammarly as automatic corrective feedback can be accessed on widely-used web browsers, such as Google Chrome, the web browser developed by Apple Inc. (Safari), and Mozilla Firefox, and is congruent with various operating systems, including Mac, Microsoft Windows, Google's Android operating system, and Apple mobile devices. (Grammarly, 2020). Recently, this web-based proofreading application, Grammarly, has gained significant prominence for its capability to scan and enhance writing (Hartshorne, 2021). Regarding the preceding assertions, this study set out to investigate the augmentation of writing proficiency by assessing the influence of Grammarly software on students' writing skills an automated corrective feedback tool tailored for learners.

Language proficiency in writing is crucial for academic achievement, especially among Iranian EFL learners. Students attempting to write in a foreign language confront a variety of difficulties because writing is an active and fruitful skill. Writing is a difficult skill that calls for a particular amount of linguistic expertise, including vocabulary, syntax, and writing standards (Eckstein, 2020). This presents one of the problems.

Some prior studies in Iranian EFL learning environments focused on either the positive or negative impacts of tools like Grammarly on the writing abilities of EFL learners. In contrast, the present study diverges by assessing learners' overall writing performances and quantifying changes in various facets of writing performance using an innovative approach. The automated corrective feedback mechanism employed in this study offers personalized and immediate

performance evaluations through an online platform. This intricately designed program aims to enhance multiple aspects of learners' writing skills, including grammar, punctuation, spelling, coherence, writing styles, and addressing plagiarism. The main objectives of this research revolve around two crucial inquiries. EFL learners, participating in a writing course, were randomly assigned to integrate Grammarly software in six distinct instances as part of their writing assignments.

Literature Review

Theoretical Framework

Technology-Enhanced Language Learning (TELL)

Technology-enhanced language learning has been a popular subject in language education research for a while (Tu et al., 2020; Zou et al., 2020), and there have been several representative reviews on the subject. Significant influence was exerted by a study conducted by Golonka et al. (2014) that looked at various technologies used in language learning between 1996 and 2010. It is crucial to keep in mind that the use of instructional technology in language learning only really started to gain prominence in 1996. According to Golonka et al. (2014), technology can improve language learners' motivation, effectiveness, and frequency of communication while also enhancing their language knowledge and skills, as well as their metacognitive and metalinguistic knowledge.

To assist students and teachers in selecting and utilizing technology in educational contexts, Shadiev and Yang (2020) examined 398 Social Science Citation Index publications published between 2014 and 2019 to see how technology utilization varied over time. Future language learning technologies include online movies, e-books, voice recording, augmented reality, robots, clickers, and wearable technology. Twenty-three different types of technology were used, with English and Chinese being the most popular to enhance language acquisition. Speaking, writing, and vocabulary were the skills that were most frequently studied.

In the contemporary educational landscape, various facets of second language (L2) writing pedagogy have undergone digitization. This includes the integration of web-based collaborative activities into L2 writing classrooms (Bikowski Y & Vithanage, 2016), the application of interactive electronic feedback to assess students' writing (Saeed & Al Qunayeer, 2022), and the utilization of corpus-assisted error resolution for enhancing writing quality (Crosthwaite et al., 2020). Notably, the advent of tools and applications grounded in artificial intelligence (AI) has ushered in paradigmatic shifts in technology-enhanced L2 writing. Tools such as Grammarly (Koltovskaia, 2020), Quillbot (Kurniati & Fithriani, 2022), and Google Translate (Cancino & Panes, 2021) have significantly automated various aspects of the writing workflow, including drafting, assessment, and proofreading.

Technology-Enhanced L2 Writing: Automated Writing Evaluation

Over several decades, the integration of technologically enhanced approaches in second language (L2) writing has evolved comprehensively. This includes employing electronic feedback for revisions, as exemplified by Tuzi (2004), embracing collaborative writing through wiki-based platforms (Hsu, 2019), utilizing corpus-based tools as aids for writing (Yoon & Hirvela, 2004), investigating students' computer usage behaviors in the context of writing

(Miller et al., 2008), and engaging in writing activities with the incorporation of social media platforms (Lee, 2020), among other methodologies.

According to some researchers, the recent surge in the prevalence of Automated Writing Evaluation (AWE) is grounded in the notion that these applications empower instructors to furnish feedback on higher-order writing competencies, while simultaneously entrusting the computer with the task of addressing errors at a lower proficiency level. (Link et al., 2020; Wilson & Czik, 2016).

Beyond automated assessments, advancements in AWE software have enabled L2 learners to obtain comprehensive feedback that addresses both linguistic proficiency and content evaluation. Within the scope of AWE research, the benefits of improved writing accuracy have been widely recognized (Anson, 2006; Dikli, 2010). These findings reinforce the growing favoritism for integrating automatic corrective feedback within the educational milieu. (Li, Link, & Hegelheimer, 2015; Zhang & Hyland, 2018). In their study, Li et al. (2015) revealed the utility of AWE in gauging linguistic precision. The researchers delved into the impact of Criterion, an AWE tool, on ESL writing curricula by examining error reports. By scrutinizing error categories, they discerned that the automatic writing evaluation software implementation prompted more revisions and yielded enhancement in writing accuracy.

Writing Skill

Writing is a kind of interaction where a language is represented by symbols that are written. It is believed to be a very significant skill; various authors express their original views and ideas via written forms (Miri & Azizi, 2018). Writing gives students multiple chances to look at contemporary methods to express their unique thoughts and ideas (Rao, 2017). Among the four language skills, writing is the most crucial, despite the significance of each skill and its essential role in various aspects of life. The student's written expressions manifest the efficacy of their lexicon choices. (Triana et al., 2020).

In their comprehensive investigation, Mustafa et al. (2022) meticulously examined the impediments faced by undergraduate students within Oman's Higher Education institutions. The results brought to light that Omani EFL students encountered their most substantial challenges in the form of restricted vocabulary and a lack of grammatical diversity, hindrances in comprehending reading materials, and struggles with summarization and paraphrasing. As per the findings, students perceived targeted and comprehensive feedback from instructors, extensive engagement with topic-related literature, reliance on dictionaries, analysis of writing exemplars, and iterative drafting as the most advantageous strategies for enhancing their writing prowess.

According to the plethora of scholarly investigations, writing at the higher education level has been acknowledged as a formidable challenge faced by students. From the vantage point of the learners, particularly within a writing-centric setting, this challenge encompasses not only the technical aspects of writing but also their experiential barriers (Hutchison, 2019).

Numerous solutions have been proposed to tackle these challenges. One promising approach involves making writing skill development more engaging by leveraging learning tools, resources, media, and innovative teaching methods (Li & Mak, 2022). An innovative avenue

worth exploring involves the integration of technology-enhanced instructions (TEIs) to impart writing skills, presenting a forward-looking and prospective approach to the teaching process within the realm of L2 writing. Experts, researchers, and educators have accorded profound attention to the pivotal role of teacher feedback in fostering students' writing proficiency (Tang & Liu, 2018). As technology continues its ascendancy, L2 writing instructors and learners alike may opt to leverage digital tools to enrich the trajectory of teaching and learning writing skills.

Grammarly Software: An Automated Writing Evaluation

Remaining updated on cutting-edge technologies, scholars and educators have incorporated artificial intelligence (AI) tools into second language (L2) writing instruction in recent times (Nazari et al., 2021; Wu et al., 2021). The significance of grammar in second language (L2) writing has long been acknowledged by scholars and experts in the domain (Guo and Barrot, 2019; Polio, 2012; Spada, 2018). Consequently, a plethora of digital resources have emerged, offering computer-mediated corrective feedback to address grammatical aspects. One prominent technology in this domain is Grammarly, a highly renowned online grammar analysis tool established in 2009 by Max Lytvyn and Alex Shevchenko.

Grammarly prides itself on being the most precise English grammar analyzer available in the market. A significant number of college and university students rely on Grammarly to conduct error checks in their writing. Notably, an Australian university has even chosen Grammarly as its designated tool for furnishing grammar feedback. Grammarly stands out as the most accurate and widely adopted online grammar resource, extensively utilized by a multitude of students for error detection (Ruth O'Neill and Alex, 2019). The feedback on writing quality has increasingly incorporated the utilization of Automated Written Corrective Feedback (AWCF) applications, exemplified by tools such as Grammarly. Dizon and Gayed (2021) asserted that users of Grammarly exhibited superior performance in second language (L2) writing tasks compared to their counterparts. Confirming this positive impact, Nazari et al. (2021) highlighted the beneficial effects of AI-based written feedback on students' motivation and self-efficacy in the context of L2 writing. Conversely, a more conservative observation emerged from a comparable context, where students, despite using Grammarly, experienced only marginal enhancements in cognitive engagement, as reported by Koltovskaia (2020).

This multifaceted tool manifests its ubiquity through its availability as a browser extension, desktop application, and mobile application, ensuring facile accessibility for users across diverse technological platforms. Regarding the utilization of Grammarly, the considerations can be classified into benefits and drawbacks:

Grammarly advantages

Numerous comprehensive assessments of Grammarly in the realm of academic writing have been conducted. Faisal and Carabella (2023) delved into participants' perspectives on the utilization of Grammarly in the academic writing process, scrutinizing data derived from a study involving 594 individuals. The participants derived notable advantages from employing Grammarly, citing its convenient and pragmatic application. Noteworthy among its offerings is a suite of valuable tools encompassing grammar, punctuation, and spelling checkers,

facilitating the rectification of errors. Students engaging Grammarly in their academic writing endeavors reported an enhanced sense of confidence and efficiency, particularly during the meticulous editing phase. Likewise, O'Neill and Russell (2019) observed that students hold a positive perception of Grammarly, attributing their favorable view to the tool's efficacy and convenience. Beyond its capacity to assess all aspects of writing, the software also facilitates a comprehensive evaluation of students' work, integrating critical feedback from instructors. Furthermore, Karyuatry et al. (2018) highlighted Grammarly's utility in effectively detecting grammar errors and potential stylistic discrepancies.

A thorough examination of Grammarly's efficacy as a tool for evaluating grammar in educational exercises aimed at college students was undertaken by Daroina et al. (2022). The results illuminated the merits of Grammarly, highlighting its prowess and efficiency in addressing grammatical, punctuation, and spelling aspects, grounded in the principles of practicality, reliability, validity, authenticity, and washback. Grammarly proves instrumental in enabling students to discern errors in their writing concerning correctness, clarity, and more. Importantly, its non-restriction to time or location grants students the flexibility to access it at their convenience.

Grammarly disadvantages

The burgeoning trend of incorporating technology to impart academic writing skills to students is becoming increasingly prevalent in the classroom. Nevertheless, the digital software Grammarly necessitates ongoing refinement from its developers to align with contemporary technological advancements and thereby enhance its efficacy in elevating the quality of second-language writing. (Perdana & Farida, 2019). Two prominent limitations are readily apparent: firstly, Grammarly's failure to accurately identify certain proper nouns, and secondly, its limited capacity to substantially enhance the content and structural organization of writing (Ghufron, 2019; Huang, 2020). Its effectiveness in improving the structure and substance of writing was diminished, primarily due to its inability to identify certain proper nouns. This limitation arises from its origin in the United States, where certain terms, such as the names of locations or platforms, may be considered proper nouns in specific contexts (Javier, 2022).

The feedback occasionally overlooks errors and presents them inaccurately; the counsel provided is at times misleading and tends to be excessively generated (O'Neill & Russell, 2019). While there are certain drawbacks associated with the use of Grammarly, such as potential long-term effects, it is crucial to underscore that the impact varies significantly depending on the individual (Perdana et al., 2021). Recognizing that it is a machine incapable of achieving perfect accuracy, optimal results necessitate human intervention for correction (O'Neill & Russell, 2019). Given the inherent limitations in AI accuracy compared to human capabilities, a thorough reevaluation is imperative to ensure the ultimate precision of the outcomes (Yasmin et al., 2021). Teachers play a pivotal role in enhancing students' English language proficiency, particularly through the effective utilization of Grammarly, necessitating appropriate instructional guidance (Ashrafganjoe et al., 2022). In this regard, instructors are urged to formulate evaluation rubrics based on assessments to guide and enhance the learning process.

However, for this particular study, students relied on Grammarly's free version, which can only check for the presence of an article, a space, and a period. Consequently, there is a possibility that students might become dissatisfied with the results obtained from using Grammarly. In contrast, the premium version is a paid add-on for existing users, offering 150 more grammar points, plagiarism detection, vocabulary suggestions, and contextual spelling corrections. A concise yet comprehensive explanation accompanies each grammatical error.

Table 1 presents the essential attributes distinguishing the free and premium editions of Grammarly software.

Table 1. Grammarly's Free and Premium Versions

Name Report	Description/Version
1. Correctness	Assesses the overall grammatical correctness of the writing, spelling, and punctuation/ Free version
2. Clarity	Provides feedback on the clarity of the writing, identifying areas that may require revision for better understanding/ Free version
3. Engagement	Proposes specific synonyms and word choices that will improve writing's sharpness/ Premium version
4. Delivery	Points out redundancies like clichés and clunky language/ Premium version
5. Style Guide	Points out instances of words that fall outside of the company's style guide/ Premium and Business version
6. Plagiarism Hecker	Helps scan articles for instances of plagiarism online/ Premium version

Note: The data presented in this table was retrieved from the Grammarly website in 2022.

The purpose of the study

This study endeavors to explore the effects of the Grammarly application on the progression of writing skills among EFL students. By administering a series of writing assignments at regular intervals throughout the investigation, the study seeks to assess the influence of Grammarly on multiple facets of EFL writing proficiency, including grammatical accuracy, spelling, punctuation, and clarity. The research aims to yield an in-depth grasp of how the sustained utilization of Grammarly influences the writing acumen of EFL students over time, contributing valuable insights to the domain of technology-enhanced language learning within the EFL context. The resulting findings are poised to offer valuable guidance to educators, researchers, and practitioners regarding the potential advantages and limitations associated with integrating Grammarly into the EFL curriculum as a means to enhance writing proficiency.

Despite notable strides in language education and the integration of technology, a discernible disparity persists in the realm of advanced-level writing skills. Although learners may exhibit a strong foundation in language proficiency, attaining mastery in advanced writing remains a formidable undertaking. This incongruity is particularly salient in EFL education, where students frequently encounter challenges in navigating intricate grammatical structures, lexical precision, punctuation subtleties, and overall coherence in their written discourse. Moreover, conventional pedagogical approaches may not comprehensively address the multifaceted intricacies inherent in advanced-level writing, contributing to the persistence of a gap in achieving optimal writing prowess.

By scrutinizing and redressing the unique challenges and limitations encountered in advanced writing, Grammarly presents the potential to ameliorate the existing educational disparity. Its real-time feedback, automated proofreading, and customized recommendations bear the potential to empower learners with the essential proficiencies and approaches needed to ascend to a level of writing excellence at the advanced echelon.

Employing a rigorous empirical inquiry into the effectiveness of Grammarly in augmenting writing proficiencies among EFL students at the advanced level, this research endeavors to elucidate the significance of technology-enhanced language learning in ameliorating the educational disparity. The resultant findings hold the potential to furnish educators, curriculum developers, and policymakers with invaluable perspectives, facilitating the formulation of targeted interventions aimed at cultivating heightened writing skills among advanced language learners.

Research question number 1: Does the use of Grammarly software have any significant impact on EFL learners' development of writing skills?

Research question number 2: Does the use of Grammarly software have any significant impact on the writing components, encompassing improvements in grammar (GR), punctuation (PUN), spelling (SP) accuracy, and the enhancement of clarity (CL), among EFL learners?

Method

Design of the study

Participants

The research sample, consisting of 33 individuals, was stratified into 13 females, representing approximately 39% of the cohort, and 20 males, representing approximately 61% of the total sample, to ensure comprehensive gender representation. (See Fig. 1)

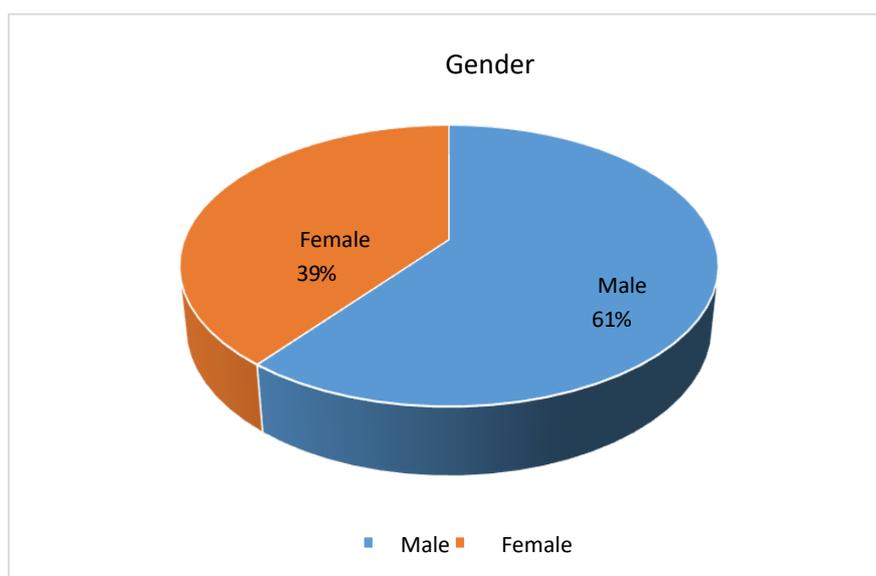


Fig.1. Rates of gender

The demographic information of the participants is presented in Table 2:

Table 2. *Participant Demographics*

Category	Details
Total Participants	33
Major	TEFL
Institution	Shahid Rajaei Teacher Training University
Language Proficiency Level	B1 to C1 (Intermediate to Advanced)
Gender Distribution	20 Male, 13 Female
Age Range	20 to 27
Selection Method	Random allocation

All participants recruited for this inquiry must adhere to two specific prerequisites: 1) their enrollment as PBI students in the class of 2023; and 2) their utilization of Grammarly, an application that serves to foster the refinement of English academic writing proficiencies. The incorporation of Problem-Based Instruction within educational domains significantly enriches the learning journey, thereby equipping students with the aptitude to thrive in the evolving landscape beyond the confines of the classroom (Yulia, Gunawan & Nasution, 2020).

Materials and Instruments

Aligned with the research inquiries, two instruments, namely the Quick Oxford Placement Test (QOPT), the Grammarly application, and were utilized to gather the necessary data.

Quick Oxford Placement Test (QOPT)

The first assessment tool employed in this research was the Quick Oxford Proficiency Test (QOPT). The aim behind its utilization was the identification of participants with homogeneous language skills. QOPT, a standardized examination, was crafted to evaluate individuals' communicative capabilities across varying tiers of English language proficiency. Essentially, this test proved effective in providing a fast, reliable, and accurate assessment of participants' abilities under the Common European Framework of Reference for Languages. (CEFR). Through QOPT's administration, learners were categorized into distinct strata A1/A2 (elementary), B1/B2 (intermediate), or C1/C2 (advanced) levels. Version 2 of the test, comprising two sections—consisting of 40 and 20 questions, respectively was employed in this study. This arrangement yielded a standardized cumulative score of 120. Individuals attaining scores within the range of 41 to 50 were identified as pre-intermediate, those scoring between 51 and 60 were categorized as intermediate, and those achieving scores of 61 to 79 were labeled as upper-intermediate. Consequently, the research's targeted sample was chosen from those who achieved a score between 51 and 60 (denoting B1-intermediate proficiency) on this placement test.

Grammarly Application

The Grammarly application was utilized as the following tool. The utilization of 'Grammarly', an advanced Automatic Writing Evaluation (AWE) software in the 21st century, has been hailed as a convenient resource for students and educational institutions. This tool aids in the

improvement of writing by identifying and rectifying spelling, grammar, and punctuation errors. Additionally, it offers comprehensive and valuable feedback, encompassing corrections and suggestions to enhance the readability, clarity, precision, effectiveness, and impact of the written content.

The participants in the study were provided access to the free version of the Grammarly app. Initially, the app was introduced to the participants, and they were subsequently informed about its functionalities during the writing course. The attributes and functionalities associated with the free version of Grammarly, are aimed at supporting participants in enhancing the quality and correctness of their written content (Table 3)

Table 3. *The attributes of the free version of the Grammarly application*

Feature Category	Description
1. Grammar Analysis	A comprehensive examination of grammatical constructs for refinement and accuracy
2. Spelling Assistance	Provision of aid in identifying and correcting spelling errors in the text.
3. Punctuation Support	Assistance in rectifying improper or missing punctuation marks.
4. Vocabulary	Identification and replacement of repetitive or unsuitable words with more appropriate alternatives.
5. Clarity Enhancement	Enhancing the coherence and lucidity of sentences and paragraphs.

Data Analysis

Aligned with our research objective, we opted for a quantitative research design owing to its suitability and compatibility with our study's overarching goals and scientific inquiries. Quantitative methodologies are inherently characterized by objectivity and depend on the assumption that data possess an objective nature (Birhane, A. 2021). The following procedures were carried out to achieve the goals of the study:

At the outset, the participants were permitted to use the free version of Grammarly during the writing course and were asked to utilize the tool during six successive phases of their writing tasks. Detailed instructions on how to effectively utilize the app were also provided. After each phase, their writing was assessed through Grammarly before moving on to the next task. (Fig2.)

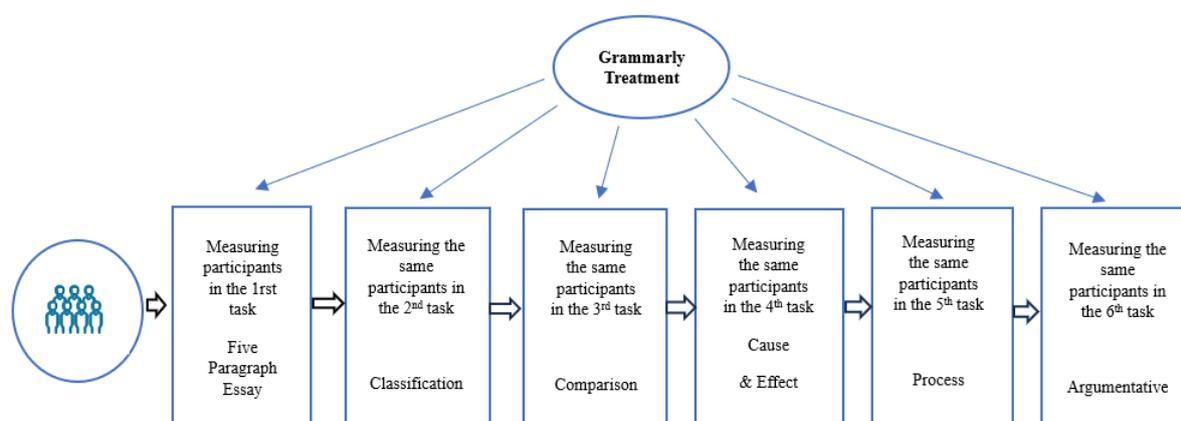


Fig 2. *The procedure of using treatment*

The six writing phases were thoughtfully devised to span a wide range of writing styles and subjects, to learn how to write different writing styles which include 5 Paragraph essays, Classification, Comparison, Cause and effect, Process, and Argumentative Papers. (Table 4.) Subsequently, Grammarly reports for each task were submitted to the teacher. Upon the culmination of the course, all six writing tasks undertaken by the students were amassed. A methodical compilation of writing samples spanning all six stages of the assignments was undertaken, followed by a systematic analysis. This analysis entailed the scrutiny of various writing metrics, encompassing assessments of overall writing scores, as well as a detailed examination of students' errors, including grammatical and spelling inaccuracies, punctuation issues, and enhancements in the clarity of written expression.

Table 4. *Consecutive Study Stages*

Participants (N=33)	Writing Styles	Instruction/intervention
Stage 1	Five Paragraph Essay	Grammarly Feedback
Stage 2	Classification	Grammarly Feedback
Stage 3	Comparison	Grammarly Feedback
Stage 4	Cause & Effect	Grammarly Feedback
Stage 5	Process	Grammarly Feedback
Stage 6	Argumentative	Grammarly Feedback

Results

Descriptive Statistics

Conducting a statistical analysis is imperative for addressing the research inquiries. In our research, we focused on a single group of participants. To begin, we conducted descriptive statistical analyses on the total scores of participants across six distinct writing tasks (WS1 to WS6).

Table 5. shows total writing scores of participants from (WS1) (Mean=83.06, SD=16.07) to (WS6) (Mean=87.24, SD=10.17) improved significantly in six-time points.

Table 5. *Descriptive Statistics of Total Writing Scores of One Group in 6 Time Points*

	Mean	Std. Deviation	N
WS1	83.0606	16.07782	33
WS2	83.5455	12.83328	33
WS3	84.0303	11.69531	33
WS4	84.5455	12.59983	33
WS5	86.3636	10.92823	33
WS6	87.2424	10.17359	33

As shown in table 6. Grammatical mistakes of the participants from (GR1) (Mean=.02, SD=.03) to (GR6) (Mean=.005, SD=.007) decreased.

Table 6. Descriptive Statistics of Four Categories Writing Components Mistakes(N=33)

	Mean	Std. Deviation	N
GR1	.0227	.03963	33
GR2	.0179	.02607	33
GR3	.0133	.02570	33
GR4	.0115	.02078	33
GR5	.0103	.01630	33
GR6	.0052	.00755	33
PUN1	.0067	.02791	33
PUN2	.0112	.02815	33
PUN3	.0048	.02438	33
PUN4	.0045	.01348	33
PUN5	.0036	.00822	33
PUN6	.0015	.00442	33
SP1	.0000	.00000	33
SP2	.0006	.00242	33
SP3	.0006	.00242	33
SP4	.0021	.00485	33
SP5	.0009	.00384	33
SP6	.0003	.00174	33
CL1	.0079	.01516	33
CL2	.0058	.02107	33
CL3	.0024	.00561	33
CL4	.0027	.00761	33
CL5	.0048	.01253	33
CL6	.0027	.00761	33

This reduction signifies a decrease in grammatical mistakes among the participants, demonstrating an enhancement in their utilization of the Grammarly application, with an observed decrease occurring six-fold. Examining the provided table, it becomes evident that (PUN1) from (Mean=.006, SD=.027) to (PUN6) (Mean=.001, SD=.004) changed. This transformation is indicative of a progression in the participants' proficiency with punctuation. For spelling, there is no trend. The participants demonstrated a near absence of spelling errors just a few in the fourth task. Finally, clarity from (CL1) (Mean=.007, SD=.015) to (CL6) (Mean=.002, SD=.007) signifying a six-fold improvement facilitated by the utilization of the Grammarly application.

Repeated measures analysis

Research Question 1

Research question number 1 was: “Does Grammarly Software have any significant impact on EFL learners' development of writing skills?” To answer this question one-way Repeated Measures MANOVA was used.

Table 7. *Multivariate Tests for Total Writing Scores*

Within Subjects Effect		Value	F	Hypothesis df	Error df	Sig.	Partial Eta Squared
Time	Pillai's Trace	.265	1.788	25.000	800.000	.011	.053
	Wilks' Lambda	.755	1.826	25.000	581.016	.009*	.055
	Hotelling's Trace	.299	1.848	25.000	772.000	.007	.056
	Roy's Largest Root	.185	5.917 ^c	5.000	160.000	.000	.156

Running the RM-MANOVA on all dependent variables as shown in Table 7. had a significant overall interaction with the effect of the using Grammarly app at 6-time points on the combined set of dependent variables [Wilks' Lambda = 0.75, F=1.826, p= .009< .05, $\eta^2p = 0.055$]. It identified a main interaction effect between time and the set of dependent variables.

Table 8. *Univariate Tests for Total Writing Scores*

Source	Measure	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	
Time	WS	Sphericity Assumed	451.010	5	90.202	2.701	.023	.078
		Greenhouse-Geisser	451.010	3.142	143.561	2.701	.047*	.078
		Huynh-Feldt	451.010	3.523	128.014	2.701	.040	.078
		Lower-bound	451.010	1.000	451.010	2.701	.110	.078

The univariate analyses in Table 8. revealed the Greenhouse-Geisser results for total Writing Scores, indicating a significant main effect of time [$F=2.701$, $p = 0.047 < .05$, $\eta^2p = 0.078$]. In summary, the writing scores of participants underwent six iterations of change with the implementation of the Grammarly treatment.

Research Question 2

Research question number 2 was: Does the use of Grammarly have any significant impact on the writing components, encompassing improvements in grammar, punctuation, spelling accuracy, and the enhancement of clarity, among EFL learners?

In the initial research investigation, it was ascertained that the participants exhibited an improvement in their writing scores. By employing RM-MANOVA, we aimed to identify the factor responsible for enhancing overall writing proficiency.

Table 9. Univariate Tests for Writing Components Mistakes

Source	Measure	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	
Time	GR	Sphericity Assumed	.006	5	.001	4.509	.001	.124
		Greenhouse-Geisser	.006	2.203	.003	4.509	.012*	.124
SP		Sphericity Assumed	.002	5	.000	1.870	.102	.055
		Greenhouse-Geisser	.002	2.188	.001	1.870	.158	.055
PUN		Sphericity Assumed	8.939E-5	5	1.788E-5	2.052	.074	.060
		Greenhouse-Geisser	8.939E-5	2.631	3.397E-5	2.052	.120	.060
CL		Sphericity Assumed	.001	5	.000	1.125	.349	.034
		Greenhouse-Geisser	.001	2.482	.000	1.125	.338	.034

Table 9. presents the results of the univariate analyses conducted on the grammatical mistakes (GR) as reported by Grammarly. The Greenhouse-Geisser test revealed a statistically significant main effect of time, with [$F=4.509$, $p = .012 < .05$, $\eta^2p = 0.124$]. Regarding spelling mistakes (SP) there was no main effect of time [$F=1.870$, $P = 0.15$, $\eta^2p = .055$]. The results of the statistical analysis indicated that there were no significant main effects of time on punctuation (PUN) and clarity expression mistakes (CL). Specifically, the study gave similar outcomes for both variables, with [$F=2.052$, $p = .12$, $\eta^2p = 0.06$] for punctuation and, [$F=1.125$, $p = 0.34$, $\eta^2p = .034$] for clarity expression mistakes.

Table 10. Tests of Within-Subjects Contrasts for Writing Component Mistakes

Source	Measure	Time	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Time	GR	Linear	.006	1	.006	9.489	.004*	.229
		Quadratic	5.487E-5	1	5.487E-5	.530	.472	.016
	PUN	Linear	.001	1	.001	2.476	.125	.072
		Quadratic	5.209E-5	1	5.209E-5	1.983	.169	.058
	SP	Linear	7.316E-6	1	7.316E-6	1.709	.200	.051
		Quadratic	4.675E-5	1	4.675E-5	13.852	.001	.302
	CL	Linear	.000	1	.000	1.468	.235	.044
		Quadratic	.000	1	.000	2.483	.125	.072

Table 10. presents the findings of a statistical analysis, indicating a significant linear relationship between time and grammatical mistakes (GR) [$F= 9.489$, $p = .004$, $\eta^2 = .229$]. The findings of this study demonstrate a statistically significant linear correlation between the variable of time and grammatical errors, with the linear component accounting for roughly 22.9% of the observed variability in grammatical mistakes. There were no significant effects observed for the other writing component's mistakes.

Upon a comprehensive analysis of the data, it became evident that the primary catalyst for enhancing the writing proficiency of participants was the progressive refinement of their grammatical skills throughout the six individual stages of the writing course. While there were instances of advancement in the realms of punctuation and clarity in certain tasks, this progress was not consistently realized across all six writing assignments. Consequently, the overall writing proficiency did not witness marked improvement attributable to punctuation and clarity enhancements. The incidence of spelling mistakes was so minimal that it had no discernible impact on the overall outcome of the participants' writing proficiency.

Discussion

According to the research results, the employment of the Grammarly application as a means of providing automated corrective feedback was determined to yield a statistically beneficial impact on the writing skills of the participants. The study revealed that consistent utilization of automated feedback through Grammarly in six tasks led to significant enhancements in writing performance. The results of this study align with prior research that has demonstrated the potential advantages of utilizing Grammarly as a means of enhancing writing abilities. Nevertheless, it has been observed by Tambunan et al. (2022) that the efficacy of Grammarly could potentially differ according to the unique learning styles and preferences of individuals. Some learners might perceive Grammarly as a valuable instrument for identifying and rectifying their inaccuracies in writing abilities, while others might exhibit a preference for conventional pedagogical approaches, such as classroom-based activities and exercises.

In light of the second research question, the researcher aimed to discern the specific facets of writing proficiency that experienced enhancements in written work quality. By employing the freely available version of the Grammarly application, which was accessible to all the participants, four distinct categories of writing components were scrutinized: grammar, spelling, punctuation, and clarity of expression. Consequently, the initially posited hypothesis was disproven, affirming that the Grammarly application exerts a favorable influence on the grammatical skills of students by employing the RM-MANOVA method, consequently elevating their overall writing proficiency within their respective writing courses. The data presented in Figure 3. the predominant mistakes evident in participants' writing scores throughout all six assessments consistently manifested as grammatical mistakes. As data presented in Figure 4. adverse growth patterns manifested due to the presence of erroneous fragments. These figures illustrated diminishing mistakes, indicating a decline in participants' mistakes over the progression of time. A prominent adverse trend is concerning grammatical inaccuracies (GR). This suggests a notable enhancement in participants' grammatical proficiency through their utilization of the Grammarly application over six instances.

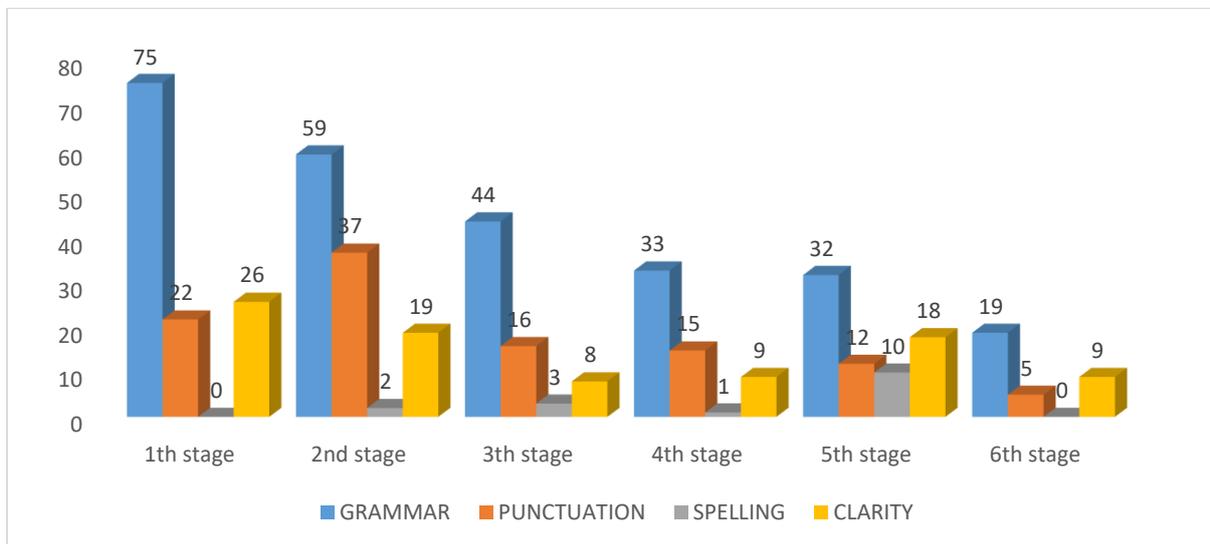


Fig 3. The number of Writing Components Mistakes in 6 Time Points

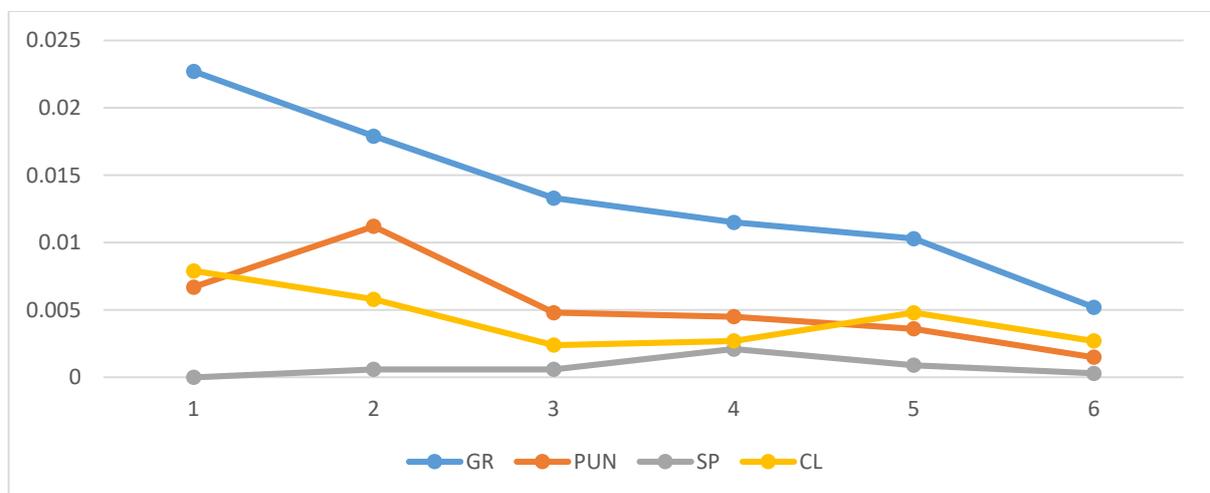


Fig 4. Mean for 4 Categories Writing Components Mistakes in 6 Time Points

Through Grammarly's feature that offers detailed explanations of grammar rules, students have the opportunity to enhance their writing skills while concurrently gaining a comprehensive understanding of grammar rules. This means that students can grasp the intricacies of grammatical structures as they improve their writing. In this regard, [Fitria \(2021\)](#) conducted a study that demonstrated that the utilization of Grammarly had a beneficial effect on the grammatical precision of the participants' writing. This was substantiated by the notable enhancement observed in their results on the grammar test. According to [O'Neill and Russell \(2019\)](#), it has been proposed that Grammarly is a valuable tool for enhancing the grammatical precision of written documents.

The outcomes of the study validated the positive influence of Grammarly as a tool for rectifying learners' grammatical proficiency. In the research findings illustrated in Figures 3. and 4, it became evident that the predominant type of mistakes that occurred in all six tasks during the writing course were related to grammatical mistakes. This underscores the notion that mastering grammar is a particularly challenging skill. This assertion was corroborated by empirical findings from a study conducted by [Hampp et al. \(2021\)](#), which specifically examined the prevalence of grammatical issues in TOEFL test results. A significant aspect of this research was the utilization of a repeated measures design, which placed participants in a scenario where they had to incorporate Grammarly over time. This recurring exposure to the tool compelled students to confront their inaccuracies across various writing styles within the course, thereby fostering increased awareness of their issues.

According to the RM-MANOVA analysis employed in this study, it was determined that various other writing indicators did not exhibit a statistically significant impact over time across all six instances of utilizing the Grammarly intervention. However, as depicted in Figures 3 and 4, after grammatical errors, which were the most prevalent mistakes made by the participants, the second-largest category of errors observed in all six evaluation stages employing the Grammarly application consisted of punctuation errors. [Ghufron \(2019\)](#) contends that Grammarly is notably more effective in reducing errors related to word choice (diction), language usage (grammar), and writing mechanics (spelling and punctuation). [Vidhiasi and Haryani \(2021\)](#) conducted a study that provided evidence supporting Grammarly's efficacy as a tool for error detection, particularly in the area of mechanical errors.

The researchers also observed that the most common types of errors were associated with punctuation (40.3%), followed closely by spelling issues (39%). Furthermore, it was hypothesized that the use of proper punctuation significantly impacts the overall coherence of a written composition. In the current study, the application of RM-MANOVA did not yield a statistically significant result indicating the influence of time on punctuation. The mean of punctuation in Fig 4. did not follow a consistent positive trend. In the second task, students endeavored to produce organized content, striving to arrange categories in a logical sequence to ensure a seamless and coherent progression within the essay. The intricacies of crafting such a style proved challenging for them, with the demand for meticulous categorization overshadowing their attention to punctuation nuances. The students faced a dilemma wherein their dedication to achieving a well-structured narrative sometimes led to a relative neglect of

the finer points of punctuation, particularly in instances where robust categorization took precedence in their writing process.

In Fig 5 and 6 which are the screenshots of one of the participants' Grammarly reports, a notable observation is that mistakes numbered 6, 8, and 10, which were apparent in both Figure 5. and Figure 6. highlighted a significant issue.

If I work hard for 10 years, I'll be able to bring the best iranian saffron, dried button mushrooms and figs to the whole world and all my agricultural products will be first-class and suitable for exportation.

In order to export saffron to foreign countries, we need to consider three important factors.

First we should cultivate saffron corms in our form and add some fertilizers to increase our harvest. when the saffron flowers start to bloom, we collect and pick them by hand and counduct the stripping process to get the first-class saffron stigmas.

After getting the red stigmas from flowers, we prepare ourselves for the packaging process. We put saffron stigmas into the beautiful Packages to meet the customer's satisfaction.

To sell our product to foreign customers, we should always consider networking and by setting up an English website we can find our regulate customers.

White button mushrooms are completely different from saffron and they have their own specific strategy and we're going to consider it.

Fig 5. Grammarly Report

6.	<u>, and</u>	Comma misuse within clauses	Correctness
7.	in order to → To	Wordy sentences	Clarity
8.	<u>First,</u>	Comma misuse within clauses	Correctness
9.	counduct → conduct	Misspelled words	Correctness
10.	<u>, and</u>	Comma misuse within clauses	Correctness
11.	regulate → regulated	Incorrect verb forms	Correctness
12.	own	Wordy sentences	Clarity
13.	is → it	Confused words	Correctness
14.	the foreign	Determiner use (a/an/the/this, etc.)	Correctness
15.	buy → at buying	Incorrect verb forms	Correctness
16.	mushroom → mushrooms	Incorrect noun number	Correctness
17.	in order to → to	Wordy sentences	Clarity
18.	mushrooms,	Comma misuse within clauses	Correctness

Fig 6. *Grammarly Report*

It was evident that the majority of the participants lacked a clear understanding of when to appropriately employ commas or semicolons in their writing. Notably, a substantial number of participants demonstrated an erroneous practice of placing a comma after the conjunction "and" rather than preceding it. Specifically, they demonstrated uncertainty about whether it is necessary to position a comma adjacent to "and" or not. The errors involving the placement of punctuation marks were quite common among the participants. Upon scrutinizing the Grammarly reports for the second task, participants observed a conspicuous trend. Their heightened focus on content intricacies inadvertently led to an increased incidence of punctuation errors. Notably, Grammarly's report system accentuated this phenomenon by repeatedly underlining instances of the same mistake. The repetitive nature of these markings served as a valuable indicator for participants, offering clear visibility into the specific areas where they encountered challenges. This recurring feedback mechanism facilitated a more nuanced understanding of their punctuation-related issues within the context of the Grammarly analysis. However consistent exposure to Grammarly's corrections proved to be a valuable learning experience for them. This exposure not only aided the participants in acquiring a better understanding of punctuation rules but also underscored the significance of proper punctuation in the context of written composition.

As mentioned above, clarity like punctuation did not have a significant effect over time but the means of clarity decreased and showed improvement among participants. As researchers progressed, Grammarly underwent advancements aimed at improving the clarity of written content. These enhancements encompass a range of features, including the provision of clear and easily comprehensible explanations, the offering of valuable recommendations to enhance the writing of students, suggesting alternative words or phrases, providing effective feedback, identifying potential stylistic errors, and presenting appropriate options. Additionally, Grammarly places particular emphasis on sentence restructuring to enhance overall clarity. (Dewi, 2023; Hakiki, 2021; Javier, 2022; Oktaviani et al., 2023; Yasmin et al., 2021).

The final writing element scrutinized in this study was spelling. It was determined that spelling did not exhibit a statistically significant impact over time. However, upon closer examination of the descriptive analysis in the results section of this paper, it was observed that the mean scores for scrutinizing each word in the writing for misspellings by employing its spell-check tool. It's worth noting that this improvement was not consistent throughout all stages of app usage. As depicted in Figure 4, the mean spelling errors notably increased during the second and fourth tasks but progressively decreased from in other tasks. It is possible that the effect of time was not notably significant when it came to spelling; however, the average number of spelling errors, except during the second and fourth evaluations, exhibited a decrease. This implies that the participants' spelling skills showed improvement through the utilization of Grammarly.

In this case, Bailey and Lee (2020) indicated Grammarly demonstrated a gradual enhancement in addressing errors related to spelling, excessive word usage, and punctuation within written compositions. It is important to note that Grammarly alone cannot transform a poorly written composition into a high-quality one; rather, it contributes to the improvement of

writing quality in incremental stages. In the Iranian EFL context, a majority of students rely on Microsoft Word for word processing, and due to its limited correction features, they often overlook the importance of accurate spelling. The Grammarly spelling checker, however, serves as a valuable tool in raising their awareness of this issue and aids in their endeavor to enhance their spelling skills.

This research brought forth two critical insights that heightened students' awareness of their writing mistakes during the course. Firstly, the recurrent nature of Grammarly's highlighting of identical errors served as a distinctive feature. Unlike teachers, who often address a repeated issue with a single mark, Grammarly's system accentuated each occurrence. Notably, in academic contexts, instructors typically emphasize the overarching purpose of writing, often overlooking fundamental issues such as basic grammar, punctuation, or spelling.

Secondly, a noteworthy aspect of this research was its utilization of a repeated measures design, wherein participants were consistently exposed to Grammarly's feedback. The iterative nature of both Grammarly's highlighting and the research design ensured that participants encountered their mistakes repeatedly. This repetitive exposure played a pivotal role in cultivating awareness among participants, preventing the recurrence of identified mistakes. The amalgamation of Grammarly's repetition feature and the unique design of the research contributed significantly to participants' heightened awareness and subsequent avoidance of specific writing errors.

Conclusion

This study sought to investigate the impact of Grammarly's application on EFL learners' development of writing skills. Concerning the first research question and based on the data derived from RM-MANOVA, the findings revealed that the consistent utilization of automated feedback through Grammarly across six distinct time points led to significant enhancements in writing performance. In summary, it can be concluded that the implementation of the Grammarly application, as corrective feedback, can affect writing proficiency in the context of EFL.

Concerning the second research question, the outcomes derived from the RM-MANOVA analysis of learners' writing scores and their component errors across six different time points indicate a notable improvement in the participants' grammatical proficiency as a result of utilizing the treatment as a form of corrective feedback over time. Although there was a reduction in the mean scores for other writing component errors in some of the six tasks, signifying progress in certain areas, it was not consistently observed. Furthermore, the RM-MANOVA results suggest that the utilization of Grammarly did not yield a statistically significant impact on other writing aspects, including spelling, punctuation, and text clarity, among the participants.

The current study revealed two key insights enhancing students' awareness of writing errors. Firstly, Grammarly's recurrent highlighting of identical errors, unlike teachers' singular markings, and secondly, the research's repeated measures design. This repetitive exposure significantly increased participants' awareness, preventing the recurrence of identified errors.

The combination of Grammarly's repetition feature and the research design contributed markedly to heightened awareness and the avoidance of specific writing errors.

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Appendices

Appendix A

Grammarly Instruction

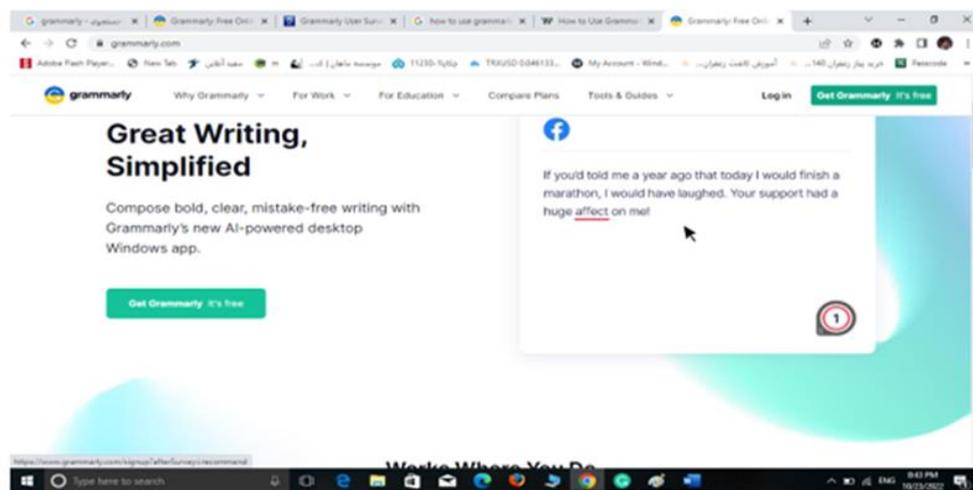
How to Use the Grammarly Desktop App?

Grammarly has a desktop app. Here is how to get it and start using it:

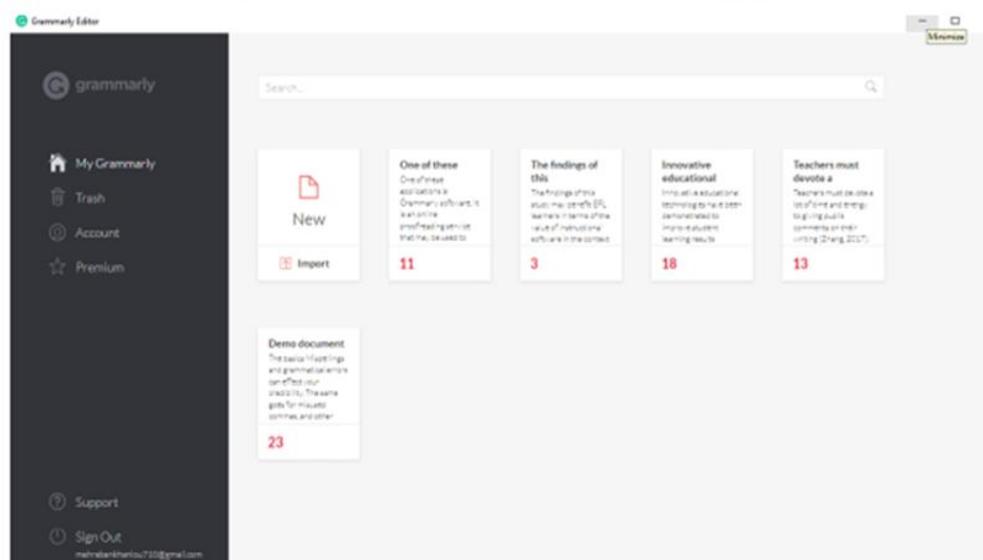
Installation

First, go to [Grammarly.com](https://www.grammarly.com) to download the app. It's available for Windows and Mac computers.

Grammarly will automatically offer the download for your device. Once you get the .exe file, just run the installation wizard and you're all set.

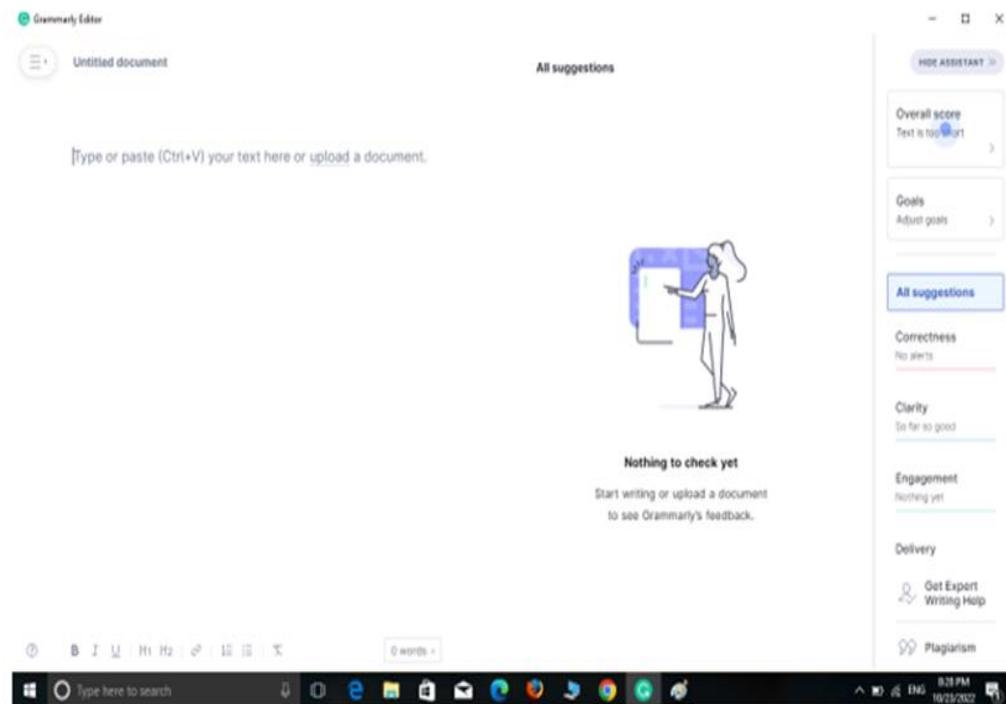


After installation, you may go to my Grammarly and import your document in new part.



Usage

You can drag and drop your documents for a spelling and grammar check, as well as style suggestions for premium users.



Our team has less projects this quarter.

• GRAMMAR

less → fewer

It appears that the quantifier **less** does not fit with the countable noun **projects**. Consider changing the quantifier or the noun.

Appendix B

Quick Oxford Placement Test



University of Cambridge
Local Examination Syndicate

OXFORD
University Press

Name: Date:

Address:

eMail: Phone:

quick placement test

Version 2

The test is divided into two parts:
Part 1 (Questions 1- 40) – All students
Part 2 (Questions 41 – 60) – start this part only if you
finished part 1 without problems

Time: 30 - 45 minutes

Quick Placement Test

Part 1

Question 1 – 5

- ❖ Where can you see these notices?
- ❖ For questions 1 to 5, mark one letter **A**, **B** or **C** on your **Answer Sheet**.

1. YOU CAN LOOK, BUT DON'T TOUCH THE PICTURES			A	B	C
A▶ in an office	B▶ in a cinema	C▶ in a museum	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. PLEASE GIVE THE RIGHT MONEY TO THE DRIVER			A	B	C
A▶ in a bank	B▶ on a bus	C▶ in a cinema	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. NO PARKING PLEASE			A	B	C
A▶ in a street	B▶ on a book	C▶ on a table	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. CROSS BRIDGE FOR TRAINS TO EDINBURGH			A	B	C
A▶ in a bank	B▶ in a garage	C▶ in a station	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. KEEP IN A COLD PLACE			A	B	C
A▶ on clothes	B▶ on furniture	C▶ on food	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Question 6 –10

- ❖ In this section you must choose the word which best fits each space in the text below.
- ❖ For questions 6 to 10, mark **one** letter **A**, **B**, or **C** on your Answer Sheet

THE STARS

There are millions of stars in the sky. If you look (6).....the sky on a clear night, it is possible to see about 3000 stars. They look small, but they are really (7).....big hot balls of burning gas. Some of them are huge, but others are much smaller, like our planet Earth. The biggest stars are very bright, but they only live for a short time. Every day new stars (8).....born and old stars die. All the stars are very far away. The light from the nearest star takes more (9).....four years to reach Earth. Hundreds of years ago, people (10).....stars, like the North Star, to know which direction to travel in. Today you can still see that star.

6.	A	B	C
A ▶ at B ▶ up C ▶ on	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7.	A	B	C
A ▶ very B ▶ too C ▶ much	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8.	A	B	C
A ▶ is B ▶ be C ▶ are	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9.	A	B	C
A ▶ that B ▶ of C ▶ than	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10.	A	B	C
A ▶ use B ▶ used C ▶ using	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Question 11 - 15

- ❖ In this section you must choose the word which best fits each space in the texts.
- ❖ For questions 11 to 20, mark one letter **A, B, C** or **D** on your Answer Sheet.

Good smiles ahead for young teeth				
<p>Older Britons are the worst in Europe when it comes to keeping their teeth. But British youngsters (11).....more to smile about because (12).....teeth are among the best. Almost 80% of Britons over 65 have lost all ore some (13).....their teeth according to a World Health Organisation survey. Eating too (14).....sugar is part of the problem. Among (15)....., 12-year-olds have on average only three missing, decayed or filled teeth.</p>				
11.	A	B	C	D
A▶ getting	B▶ got	C▶ have	D▶ having	<input type="checkbox"/>
12.	A	B	C	D
A▶ their	B▶ his	C▶ them	D▶ theirs	<input type="checkbox"/>
13.	A	B	C	D
A▶ from	B▶ of	C▶ among	D▶ between	<input type="checkbox"/>
14.	A	B	C	D
A▶ much	B▶ lot	C▶ many	D▶ deal	<input type="checkbox"/>
15.	A	B	C	D
A▶ person	B▶ people	C▶ children	D▶ family	<input type="checkbox"/>

Question 16 - 20

Christopher Columbus and the New World

On August 3, 1492, Christopher Columbus set sail from Spain to find a new route to India, China and Japan. At this time most people thought you would fall off the edge of the world if you sailed too far. Yet sailors such as Columbus had seen how a ship appeared to get lower and lower on the horizon as it sailed away. For Columbus this (16).....that the world was round. He (17).....to his men about the distance travelled each day. He did not want them to think that he did not (18).....exactly where they were going. (19)....., on October 12, 1492, Columbus and his men landed on a small island he named San Salvador. Columbus believed he was in Asia, (20).....he was actually in the Caribbean.

16.				A	B	C	D
A ► made	B ► pointed	C ► was	D ► proved	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17.				A	B	C	D
A ► lied	B ► told	C ► cheated	D ► asked	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
18.				A	B	C	D
A ► find	B ► know	C ► think	D ► expect	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
19.				A	B	C	D
A ► Next	B ► Secoundly	C ► Finally	D ► Once	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
20.				A	B	C	D
A ► as	B ► but	C ► because	D ► if	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Question 21 - 30

- ❖ In this section you must choose the word or phrase which best completes each sentence.
- ❖ For questions 21 to 40, mark one letter A, B, C or D on your Answer Sheet.

21. The children won't go to sleep.....we leave a light on outside their bedroom.				A	B	C	D
A▶ except	B▶ otherwise	C▶ unless	D▶ but	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
22. I'll give you my spare keys in case you.....home before me.				A	B	C	D
A▶ would get	B▶ got	C▶ will get	D▶ get	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
23. My holiday in Paris gave me a great.....to improve my French accent.				A	B	C	D
A▶ occasion	B▶ chance	C▶ hope	D▶ possibility	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
24. The singer ended the concert.....her most popular song.				A	B	C	D
A▶ by	B▶ with	C▶ in	D▶ as	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
25. Because it had not rained for several months, there was a.....of water.				A	B	C	D
A▶ shortage	B▶ drop	C▶ scare	D▶ waste	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
26. I've always.....you as my best friend.				A	B	C	D
A▶ regarded	B▶ thought	C▶ meant	D▶ supposed	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
27. She came to live her.....a month ago.				A	B	C	D
A▶ quite	B▶ beyond	C▶ already	D▶ almost	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
28. Don't make such a.....! The dentist is only going to look at your teeth.				A	B	C	D
A▶ fuss	B▶ trouble	C▶ worry	D▶ reaction	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
29. He spent a long time looking for a tie which.....with his new shirt.				A	B	C	D
A▶ fixed	B▶ made	C▶ went	D▶ wore	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
30. Fortunately,.....from a bump on the head, she suffered no serious injuries from her fall.				A	B	C	D
A▶ other	B▶ except	C▶ besides	D▶ apart	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Question 31 – 40

31. She had changed so much that.....anyone recognised her.				A	B	C	D
A▶ almost	B▶ hardly	C▶ not	D▶ nearly	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
32.teaching English, she also writes children's books.				A	B	C	D
A▶ Moreover	B▶ As well as	C▶ In addition	D▶ Apart	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
33. It was clear that the young couple were.....of taking charge of the restaurant.				A	B	C	D
A▶ responsible	B▶ reliable	C▶ capable	D▶ able	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
34. The book.....of ten chapters, each one covering a different topic.				A	B	C	D
A▶ comprises	B▶ includes	C▶ consists	D▶ contains	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
35. Mary was disappointed with her new shirt as the colour.....very quickly.				A	B	C	D
A▶ bleached	B▶ died	C▶ vanished	D▶ faded	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
36. National leaders from all over the world are expected o attend the.....meeting.				A	B	C	D
A▶ peak	B▶ summit	C▶ top	D▶ apex	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
37. Jane remained calm when she won the lottery and.....about her business as if nothing had happened.				A	B	C	D
A▶ came	B▶ brought	C▶ went	D▶ moved	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
38. I suggest we.....outside the stadium tomorrow at 8.30.				A	B	C	D
A▶ meeting	B▶ meet	C▶ met	D▶ will meet	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
39. My remarks were.....as a joke, but she was offended by them.				A	B	C	D
A▶ pretended	B▶ thought	C▶ meant	D▶ supposed	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
40. You ought to take up swimming for the.....of your health.				A	B	C	D
A▶ concern	B▶ relief	C▶ sake	D▶ cause	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Part 2

Do not start this part unless told to do so by your test supervisor

Questions 41 – 45

- ❖ In this section you must choose the word which best fits each space in the texts.
- ❖ For questions 41 to 45, mark one letter A, B, C or D on your Answer Sheet.

CLOCKS

The clock was the first complex mechanical machinery to enter the home, (41).....it was too expensive for the (42).....person until the 19th century, when (43).....production techniques lowered the price. Watches were also developed, but they (44).....luxury items until 1868, When the first cheap pocket watch was designed in Switzerland. Watches later became (45).....available, and Switzerland became the world’s leading watch manufacturing centre for the next 100 years.

41.	A	B	C	D
A ▶ despite B ▶ although C ▶ otherwise D ▶ average	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
42.	A	B	C	D
A ▶ average B ▶ medium C ▶ general D ▶ common	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
43.	A	B	C	D
A ▶ vast B ▶ large C ▶ wide D ▶ mass	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
44.	A	B	C	D
A ▶ lasted B ▶ endured C ▶ kept D ▶ remained	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
45.	A	B	C	D
A ▶ mostly B ▶ chiefly C ▶ greatly D ▶ widely	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Questions 46 - 50

Dublin City Walks

What better way of getting to know a new city than by walking around it? Whether you choose the Medieval Walk, which will (46).....you to the 1000 years ago, find out about the more (47).....history of the city on the Eighteenth Century Walk, or meet the ghosts of Dublin's many writers on The Literary Walk, we know you will enjoy the experience.

Dublin City Walks (48).....twice daily. Meet your guide at 10.30 a.m. or 2.30 p.m. at the Tourist Information Office. No advance (49).....is necessary. Special (50).....are available for families, children and parties of more than ten people.

46.				A	B	C	D
A ► introduce	B ► present	C ► move	D ► show	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
47.				A	B	C	D
A ► near	B ► late	C ► recent	D ► close	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
48.				A	B	C	D
A ► take place	B ► occur	C ► work	D ► function	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
49.				A	B	C	D
A ► paying	B ► reserving	C ► warning	D ► booking	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
50.				A	B	C	D
A ► funds	B ► costs	C ► fees	D ► rates	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Question 51– 60

- ❖ In this section you must choose the word or phrase which best completes each sentence.
- ❖ For questions 51 to 60, mark one letter A, B, C or D on your Answer Sheet.

51. If you're not too tired we could have a.....of tennis after lunch.				A	B	C	D
A▶ match	B▶ play	C▶ game	D▶ party	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
52. Don't you get tired.....watching TV every nigh?				A	B	C	D
A▶ with	B▶ by	C▶ of	D▶ at	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
53. Go on, finish the dessert. It needs.....up because it won't stay fresh until.				A	B	C	D
A▶ eat	B▶ eating	C▶ to eat	D▶ eaten	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
54. We're not used to.....invited to very formal occasions.				A	B	C	D
A▶ be	B▶ have	C▶ being	D▶ having	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
55. I'd rather we.....meet this evening, because I'm very tired.				A	B	C	D
A▶ wouldn't	B▶ shouldn't	C▶ hadn't	D▶ didn't	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
56. She obviously didn't want to discuss the matter so I didn't.....the point.				A	B	C	D
A▶ maintain	B▶ chase	C▶ follow	D▶ pursue	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
57. Anyone.....after the start of the play is not allowed in until the interval.				A	B	C	D
A▶ arrives	B▶ has arrived	C▶ arriving	D▶ arrived	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
58. This new magazine iswith interesting stories and useful information.				A	B	C	D
A▶ full	B▶ packed	C▶ thick	D▶ compiled	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
59. The restaurant was far too noisy to be.....to relaxed conversation.				A	B	C	D
A▶ conducive	B▶ suitable	C▶ practical	D▶ fruitful	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
60. In this branch of medicine, it is vital toopen to new ideas.				A	B	C	D
A▶ stand	B▶ continue	C▶ hold	D▶ remain	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Appendix C

Mauchly's Test of Sphericity

Mauchly's Test of Sphericity								
Within Subjects Effect	Measure	Mauchly's W	Approx. Chi-Square	df	Sig.	Epsilon		
						Greenhouse-Geisser	Huynh-Feldt	Lower-bound
Time	WS	.216	46.127	14	.000	.628	.705	.200
	GR	.040	97.002	14	.000	.441	.474	.200
	SP	.002	192.910	14	.000	.438	.471	.200
	PUN	.060	84.845	14	.000	.526	.578	.200
	CL	.067	81.190	14	.000	.496	.541	.200

Mauchly's test of sphericity was conducted to assess the assumption of sphericity for the within-subjects effects in the study. The results (table 2) indicated that the assumption of sphericity was violated for all within-subjects effects: Time SW (Mauchly's $W = .216$, $\eta^2p(14) = 46.127$, $p < .001$), GR (Mauchly's $W = .040$, $\eta^2p(14) = 97.002$, $p < .001$), PUN (Mauchly's $W = .002$, $\eta^2p(14) = 192.910$, $p < .001$), SP (Mauchly's $W = .060$, $\eta^2p(14) = 84.845$, $p < .001$), and CL (Mauchly's $W = .067$, $\eta^2p(14) = 81.190$, $p < .001$).