

The use of an online grammar checker in English writing learning

Hee-Joo Im

Professor, College of Liberal Arts, Dankook University

영어쓰기학습에서 온라인 문법체커 활용 연구

임희주

단국대학교 자유교양대학 교수

Abstract The purpose of the study is to examine online grammar checkers and suggest when they could be used in English writing classes. The study was conducted in the second semester of 2019 at D University in Chungcheong-do, with a total of 35 first-year students participating in the study. For data collection, pre and post grammar tests, questionnaires, and learning journals were collected and analyzed. The results of this study are as follows. First, based on the results of the English grammar test, the online grammar checker was found to be effective in English writing class. Second, students judged whether accepting or not rather than accepting feedback provided by online grammar checker. Third, among the feedback provided by the online grammar checker, the order of (in)definite article, preposition, punctuation, verb number, and noun number were found. The several implications and limitations of this study are discussed.

Key Words : English education, Korean university students, feedback, online grammar checker, Grammarly

요약 본 논문은 온라인 문법체커에 대해서 살펴보고 영어쓰기에 있어서 온라인 문법체커 활용 시에 유의해야 할 점에 대해 제언을 하는데 목적이 있다. 본 연구는 충청도에 있는 D 대학교에서 2019년 2학기에 실시하였으며 총 35명의 대학교 1학년 학생이 참여하였다. 본 연구 자료 수집을 위해서 사전·사후의 문법 테스트와 설문지 그리고 학습자 일지 수집되었고 분석되었다. 본 연구의 결과는 다음과 같다. 첫째, 영어문법 테스트 결과 온라인 문법체커는 영어쓰기 수업에서 효과적인 것으로 나타났다. 둘째, 학생들은 온라인 문법체커에서 제공되는 피드백 무조건 받아들이기 보다는 스스로 판단하여 수용을 하거나 하지 않는 것으로 나타났다. 셋째, 온라인 문법체커에서 제공하는 피드백 중 (부정)관사, 전치사, 문장부호, 동사 수의 일치, 명사수의 일치 순으로 나타났다. 본 연구의 결과를 바탕으로 시사점과 제한점을 토론했다.

주제어 : 영어교육, 대학생, 피드백, 온라인 문법체커, Grammarly

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*Corresponding Author : Hee-Joo Im(heejooim@dankook.ac.kr)

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1. Introduction

For many English as a Foreign Language (EFL) or English as a Second Language (ESL) learners, they are eager to get feedback from their teachers on their writings. They hope to make sure that they use correct grammar, proper expressions, avoid spelling errors and so on. It has additionally been established that the activity of error correction in English writing makes students increase their writing proficiencies [6]. However, for many teachers, giving detailed feedback on each student's writing is a big burden due to their large workloads. Therefore, since the 1960s, online grammar checkers have been developed to save time to check students' tasks and have allowed educators to use this extra time to focus on other aspects of their jobs. [3-4]. It also helps the students modify their writings and notice their errors or mistakes from the feedback.

Yang and Meng [5] focused on online feedback and peer feedback. Their research examined whether online feedback training influenced EFL Taiwan university students' text revision. It found that the low-level learners improved more than the high-level students did on error detection and correction during task performances after the online feedback training [5]. They asserted that this result was caused by high-level students not trusting their low-level peers' feedback, while on the other hand, the low-level students learned how high-level students noticed and corrected errors in their writings. Another relevant research project focused on online grammar checkers like Grammarly. Ghufron and Rosyida's [10] conducted an experiment with 40 university students for an English Education Study Program at a private university. A pre and post-test along with a survey were administered and analyzed, with the main result showing that the experimental group that used the Grammarly online checker had a significantly lower number

of errors compared to the control group that utilized indirect corrective feedback from teachers. It was additionally noted by the researchers that Grammarly was effective in decreasing the number of errors related to vocabulary usages, language use, and mechanics of writing. However, it was found that Grammarly was less effective in increasing the amount of content and organization in students' writings. Additionally, some of the students in the study were not familiar with how to use the Grammarly tool appropriately, so they did not properly correct errors. This was most evident in long sentences where students with low or poor language knowledge were confused by the feedback provided by Grammarly.

O'Neill and Russell [8] also stated that students who used Grammarly were satisfied with the feedback provided. While lower-level students were found to be more pleased, students with higher scores also agreed that Grammarly made it easier to correct grammatical errors. These studies highlight the benefits of Automated Writing Evaluation (AWE) programs, which have the same meaning as online grammar checkers, including time savings, instant scores, and individual feedback [7]. However, like many other machines and technologies, these AWE programs can provide somewhat incomplete feedback as they progress, so it has been suggested that they should only be used as aids to learning [8].

Daniels and Leslie [9] conducted a study comparing the most used online writing evaluation programs to find out their advantages and disadvantages. In the study, they analyzed Grammarly, Ginger, and MS Word through automatic grammar feedback software and presented the analysis results according to the error types. The Grammarly and Ginger tools found the most spelling and punctuation errors, with Ginger narrowly locating more spelling and punctuation errors than Grammarly. Also, Warschauer and Ware [4] compared three

grammar feedback software tools including, MY Access!, Criterion, and Holt Online Essay Scoring. Each software uses different evaluation mechanisms with MY Access! utilizing artificial intelligence, Criterion using natural language processing, and Holt Online Essay Scoring employing latent semantic analysis. Among them, Criterion offers a wide range of individualized feedback, but MY Access! and Holt Online Essay Scoring provide only limited individualized feedback.

Table 1 shows three online grammar checkers which are most popular recently [2]. It describes three grammar check softwares about 5 features as follows.

Table 1. Comparison and Analysis Grammar Check Tools[2]

	Grammarly	Ginger	Whitesmoke
Description	They offer free grammar and spell check as well as premium online proofreading software.		
When	-Since 2015	-Since 2007	-Since 2002
Work in	-Chrome plugin, Chrome web app	- All browsers except for Chrome	-All browsers (Chrome, Safari, Opera and Firefox, etc)
Cost	Free version Monthly: \$29.95 Quarterly: \$19.98 Annual: \$11.66	Free version Monthly: \$29.96 Quarterly: \$19.98 Annual: \$12.48	Free version Monthly: \$5 Premium: \$6.66 Business: \$11.50
Advantage	-Powerful Free version -Easy to use thanks to a great user interface -Features a powerful online grammar checker -Great writing insights	-Powerful free version -Useful for non-English native speakers thanks to a virtual writing tutor and translation features -Personal dictionary	-Affordable price -Accurate -Relatively easy to use -Suitable for businesses
Disadvantage	-Grammarly Premium is expensive -No personal dictionary	-Some accuracy issues (depending on document formatted)	-User interface lags behind Grammarly and Ginger -Slightly slower

Among these grammar checkers, Grammarly was chosen for the study. This is because it was used on both mobile and PC and contains the most users. According to the Grammarly website [1], *Grammarly’s AI-powered products help people communicate more effectively.....As you type,*

Grammarly checks your text for hundreds of common and advanced writing issues. The checks include common grammatical errors, such as subject-verb agreement, article use, and modifier placement, in addition to contextual spelling mistakes, phonetic spelling mistakes, and irregular verb conjugations.

This study aims to see the use of online grammar checkers and suggest some implications in English writing. In the current study, the research questions are presented below.

How do the University students use the automated grammar checker, Grammarly?

2. Methodology

2.1 Participants

The present study was conducted at D University in Chungcheng Province in 2019. The participants all took a Core English Class during the second semester of 2019, and the data was collected. For the study, 35 students participated in the research. The participants consisted of 31 (89%) female and 4 (11%) male students. All of the learners were majoring in foreign languages such as English, Spanish, Chinese, and so on. Their English proficiency level was low because they were assigned to a beginner class based on a placement test.

2.2 Instrument

For the study, pre and post grammar tests, a pre and post-survey, and students’ learning journals were used as research tools. The pre and post grammar tests included 20 beginner-level questions that were provided by Oxford Publishing and modified for this study. The survey was modified based on Cavaleri and Dianati’s (2016) study [16]. The pre and post-surveys were 10 questions each, with the first five questions focused on students’

expectations and satisfaction with Grammarly's feedback, and the last five questions related to learners' attitudes toward Grammarly. The scale is a 5-point Likert, ranging from strongly disagree to strongly agree.

On the learning journals, students wrote about feedback comments they chose to accept or not accept from the Grammarly online checking tool.

2.3 Data Collection and Data Analysis

In the study, the participants took a pre-test and filled out a pre-survey at the beginning of the semester. At the end of the semester, they took a post-test and post-survey. These data were analyzed through the SPSS21 program.

During the semester, the thirty-five students in the study performed two writing tasks by using the online grammar checker, Grammarly. The students in the study did two writing tasks as separate homework assignments, with the first topic being descriptive and the second being about giving a suggesting. For data analysis, the second task was only utilized because students needed time to be familiar with Grammarly through the first task.

As they completed the writing task, students were asked to fill out learning journals where they wrote down which feedback comments they chose to accept or not accept from the Grammarly online checking tool. The journals were qualitatively analyzed.

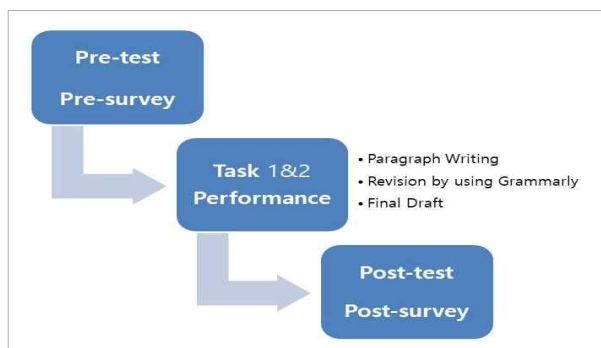


Fig. 1. Research procedure

3. Results

3.1 Changes toward Grammarly

According to the survey results, there was a statistically notable difference between the pre and post-questionnaires regarding learners' expectations and satisfaction with using Grammarly. Specifically, Table 2 showed the mean score was 3.0 on the pre-survey, with this number increasing to 3.5 on the post-survey. This result showed that students were more likely to be more satisfied with the feedback which Grammarly offered compared to their expectations. Yet, it should be noted that some students mentioned that it was hard to understand Grammarly's feedback because it was only in English.

Table 2. Expectation and Satisfaction of Grammarly use

	<i>M</i>	<i>SD</i>	<i>t</i>	<i>p</i>
Expectation	3.0	.33	5.762	.000
Satisfaction	3.5	.37		

With regards to the survey questions that evaluated students' interest and motivation while using Grammarly, Table 3 highlighted that there was no significant mean score change between pre and post surveys. Although a mean score change was found between the pre-survey ($M=3.4$) and the post-survey ($M=3.6$), the mean score change is not statically significant in this study ($t = -1.927$, $p = .063$).

Table 3. Mean Comparison of Attitude toward Grammarly

	<i>M</i>	<i>SD</i>	<i>t</i>	<i>p</i>
Pre-survey	3.4	.45	-1.927	.063
Post-survey	3.6	.42		

In order to examine the changes in students' grammar comprehension skills, the learners were

given a pre and post grammar test at the start and end of the experiment. Table 4 showed a statically significant mean score change between pre and post-test ($t = -2.224, p = .032$). The mean score was 15.4 on the pre-test and improves to 16.7 on the post-test. It suggests that Grammarly use during class can provide a positive role in improving English grammar learning.

Table 4. Mean Comparison of Grammar Test

	<i>M</i>	<i>SD</i>	<i>t</i>	<i>p</i>
Pre-test	15.4	3.3	-2.224	.032
Post-test	16.7	2.3		

* $p < 0.05$

3.2 The impact of Grammarly

While performing writing tasks for their Core English class, students revised their writings by using Grammarly. Once they had finished using the online grammar checking tool, they wrote in a learning journal which feedback comments they would accept or reject. Generally, students would make the suggested corrections if they were related to grammar or punctuation errors or if they felt the feedback was reasonable. Table 5 shows examples of when they did or did not accept the feedback.

Table 5. Feedback that students accept or not

	Did accept	Did not accept
(In)appropriateness	<ul style="list-style-type: none"> -grammar changes (noun, preposition, conjunction, etc) -spelling correction -punctuation correction (.,?!) -proper meaning 	<ul style="list-style-type: none"> -preposition changes -proper noun (person/building/place name, etc) -after checking other resources -no difference after changing -meaning difference -inappropriate punctuation (.,?!) -improper grammar feedback
Addition/Omission	<ul style="list-style-type: none"> -(in)definite addition -adjective addition 	<ul style="list-style-type: none"> -adverb addition/ommission -another word addition

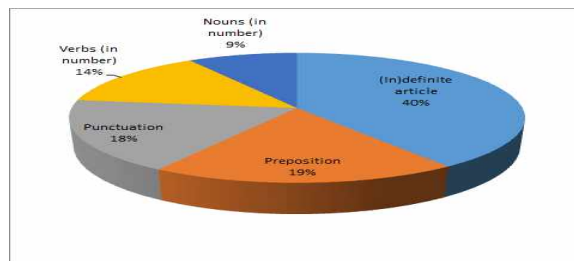


Fig. 2. Self-correction type details

After students used Grammarly to correct their own errors in their journals, they wrote down the three most important errors they thought of and presented them as detailed items [Figure 2]. According to student A’s journals, he corrected “*So, I think collecting stickers is good hobby*” to “*a good hobby*” for adding the (in)definite article among the most frequently used items.

He said, “*If I’m confused about whether this is correct or not, I read why Grammarly told me, why it was wrong and I accepted the feedback....*” At the same time, he said, “*In feedback, it was not written about why this was wrong, but only the feedback of ‘It is not correct’ was not enough to understand why...’.*”

Regarding the second most common self-correction type, prepositional errors, student B corrected by inserting the preposition ‘*about*’ right after ‘*think*’ in the sentence, “*And now, when I think the meaning of yellow pillows as an adult ...’.*”

In addition, in student B’s learning journal, “*From high school students to Grammarly’s feedback until I knew Grammarly’s feedback, I had to correct grammar or write English. But Grammarly’s feedback seems to be good if I can simply tell you exactly where and why I’m wrong. If you use it frequently, you will be able to learn grammar naturally.*”

The third highest self-correction item, mechanical error, corrected the use of commas in a sentence. Student C changed “*Actually I went to concert if I could go.*” to “*Actually, I went ...*” by adding a comma.

The student said, “When I use Papago I feel like I depend entirely on artificial intelligence. But I met this program and gave me the confidence that I could write with only 5% of Papago’s help (because of the spelling and meaning) and the rest in my head and feedback.” Student C said that through Grammarly, he could write more subjectively.

Student D, whose correction was related to the number of verbs, changed the sentence, “*But it bother me.*” to “*But it bothers me.*”. She changed the verb by adding -s after the base form of the verb because of the third person singular subject.

The student said, “*Is this right for grammar that is not used well? I was thinking. After all, I searched the grammar online and wrote English. After that, through Grammarly feedback, I felt that this grammar was correct.*” However, as a disadvantage, “*It is a site that only tells grammar, but if it is used in a different meaning than what I want, It can't point out if the grammar is correct.*”

The student also noted that if there were no problems with grammar in a sentence, the meaning of the word or expression could not be examined.

4. Conclusion and Discussion

The study was completed to examine online grammar checkers and propose some suggestions for their usage in English writing courses. The results showed that the online grammar checker, Grammarly, was effective for low-level students in regard to English grammar learning. Additionally, it was found that participants were more satisfied with the feedback provided by Grammarly than they had expected, but that the overall satisfaction was not adequate enough. In particular, the lack of significant change in participants’ attitudes demonstrates a lack of interest and motivation to use online grammar

checkers in the future.

With regards to the learning journals kept during this research project, it was determined through students’ corrections of the feedback provided by Grammarly that the most common errors corrected in their work were (in)definite articles, prepositions, mechanical errors (punctuation), and the number of verbs or nouns. Yet, additional errors such as pronoun, active voice, and adjective mistakes were also noted. It was also found that students made corrections in their journals when the errors could not be found in Korean or if they were considered an easy fix. Notably, students mentioned in their journals that Grammarly gave them the opportunity to learn about the incorrect grammar they had been using, but that the program was not perfect. Specifically, the lack of detailed explanations and the students’ inability to identify the proper meaning of words or expressions on the Grammarly website, resulted in learners not completely understanding why they were wrong and meant that changes to content and organization of writings was not occur.

For the study, some implications are presented below. First, the teachers’ role should accompany the use of an online grammar checker. Similar to prior findings, this project showed how Grammarly is effective as a micro-level to find common errors like vocabulary while developing grammar skills. Yet, it did not show a significant effect on macro-level errors [10]. Therefore, a balance could be found where students focus on micro-level writing errors, and teachers focus more on macro-level errors such as organization and idea development [3]. It should result in teaches’ workloads being decreased and allowing them to provide intensive lessons to students.

Secondly, users need to be aware that feedback from online grammar checkers is not always accurate [13, 14]. Therefore, it is crucial that students chose the proper suggestions from the tools based on their specific intentions. For

example, in this study, Grammarly often provided adverb removal feedback in a sentence or feedback about adding (in)definite articles before a noun. In another example, Grammarly offered feedback about changes to the prepositions or nouns even though they were correct. Grammarly also can provide synonym suggestions to make your writing more readable and precise [1]. Therefore, it is imperative that users determine which of the suggestions they will accept or reject. However, it is not easy for beginners to choose the correct feedback that Grammarly suggests, so it is vital that teachers introduce specific strategies to help students become independent learners.

Lastly, beginners need time to get familiar with how to use the online grammar checker, and therefore may require training from teachers or educators. In particular, beginners may take more time to understand due to their lack of English proficiency. Van Beuningen, De Jong, and Kuken [11] mentioned that low proficiency students might have some difficulties with the interlanguage process as they are trying to correct their errors. Furthermore, these learners with low knowledge may struggle with finding direct or correct answers [10, 11]. Therefore, special care from teachers or educators is required, especially will be efforts to improve the learners' metalinguistic awareness and self-editing ability [12, 15].

There are limitations to this study. One is that various tasks should be used for writing. The benefit could be that students could learn a variety of different learning strategies depending on the specific assignment. The other limitation is that the experiments should be carried out in multilevel classes. It can give some inspiration to students who need some help by comparing students at each level.

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임희주(Hee-Joo Im)

[정회원]



- 2005년 8월 : 숙명여자대학교 영어교육학과(영어교육학 석사)
- 2011년 2월 : 중앙대학교 영어교육학과(영어교육학 박사)
- 2011년 9월 ~ 현재 : 단국대학교 자유교양대학 조교수
- 관심분야 : 과업중심 커리큘럼개발, 멀티미디어 영어교육

· E-Mail : heejooim@dankook.ac.kr