Systematic Review of Strengths and Weaknesses in Improving Writing Quality with Grammarly

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Abstract - This research paper aims to review the use of Grammarly in writing research papers and analyze the latest developments related to Grammarly's approach in detecting English writing errors. The paper highlights the importance of good English writing in the international academic and research community, where English is the dominant language. The strengths and weaknesses of Grammarly are analyzed based on a detailed analysis of selected studies. While Grammarly is found to be effective in improving grammar and spelling errors, it has limitations in detecting errors in sentence structures and understanding context. Suggestions for improving Grammarly's services include incorporating writing exercises, integrating AI models for better context understanding, and improving affordability for wider accessibility. We conclude that Grammarly is a valuable tool for students and teachers, but further enhancements are needed to address its limitations and provide better support for English writing.

Keywords—English, Grammar, Writting, Usage, Effective

I. INTRODUCTION

English has become the dominant international language in many aspects of life today. In the academic and research world, English is the official language for publishing scientific papers in international journals and participating in international forums [3][4]. Therefore, good and proper English writing is crucial in today's international life. Grammarly is one of the popular English grammar-checking tools widely used by people from various countries. Grammarly can help improve the quality of its users by detecting and correcting grammar and spelling mistakes [1][2][3][5].

Although Grammarly has been widely used and popular, there are still many questions regarding the approach used in detecting writing errors [1][5]. A study has found that many Grammarly users utilize it for writing research papers in Microsoft Office (due to the limitations of Microsoft's built-in spelling checker), and the data shows that only about 28% of the respondents encountered difficulties when using Grammarly [2]. Therefore, further review is needed regarding Grammarly's approach in detecting potential writing errors that may have been missed in previous research. This review

is expected to help develop Grammarly to provide better services to its users [1][2][5].

In this research, we will review the use of Grammarly in writing research papers and the latest developments related to Grammarly's approach in detecting English writing errors. This review aims to provide a better understanding of

Grammarly's usage in improving the quality of English writing, particularly in the research paper section. Reviewing previous research on Grammarly can help us identify the strengths and weaknesses of this grammar-checking tool [1][2][3][5]. Thus, this review is expected to help writers enhance the quality of their English writing regardless of Grammarly's limitations.

II. RELATED WORKS

Based on research conducted in 2018 and 2019, Grammarly has been proven to be an effective tool in helping writers improve their English grammar errors in academic works such as research papers or articles [1][2][5]. This is supported by the majority of international journals and international forums that require papers or articles to be written in English as a form of English as a Foreign Language (EFL) [3][4].

Grammarly plays an important role in facilitating writers to express their ideas more clearly and accurately, as well as minimizing the possibility of writing errors [1][2][5]. Although Grammarly has been proven effective in assisting writers, there are still some aspects that need to be considered regarding its usage [1][2]. Studies have shown that only about 28% of respondents encountered difficulties when using Grammarly [2]. Therefore, further review is needed regarding Grammarly's approach in detecting writing errors that may have been missed in previous research [1][5].

This review is expected to help improve the effectiveness of Grammarly in assisting writers in correcting English grammar errors and minimizing the possibility of writing errors [1][3][5]. Grammarly plays a crucial role in realizing English as a Foreign Language (EFL) and assisting in research paper writing [4][5]. However, the usage of this tool still needs to be taken into consideration. Further in-depth review is needed regarding Grammarly's approach in

detecting writing errors that may have been missed in previous research [1][3][5]. Additionally, it is possible for us to discover new aspects that can help develop Grammarly as a more effective English grammar-checking tool in the future.

To ensure that graduates are adequately prepared for the workplace, writing skill is increasingly regarded as an important outcome of management education, hence, there is a need to improve students' writing skills alongside giving ongoing scholarly attention to providing pedagogical and practical guidance for management educators and students. We using the usefulness of Grammarly - a digital writing assistance tool - for supporting management educators and students[1][8].

In the writing process, Grammarly will detect student texts and provide information on what features are right and wrong. Grammarly keyboard has two main features, autocorrect, which flags grammatical errors and offers correct alternatives, and predictive text, which suggests words or phrases depending on the previously written text. Utilizing grammarly is very helpful for students in the self-editing stage, it tells grammatical errors in writing so that students are motivated to revise their work. In other words, they have more practice in writing [6][7][9].

Grammarly provides a grammar check that is very useful for writers such as online activists with automatic direct support, such as bloggers for work outside academy assignments or business people presentations and doin email or others. Writing on social networks is also possible for students and anyone who enjoys and wants to be effective at writing English. However, as an academic, they have to choose something like formal English with an academic writing system and bound by a formal writing system. So the writer must be like a correct punctuation mark presented by the Grammarly application and then for those who like academics and have a particular target and foundation in academia. So this Grammarly tool is what the authors say is used more by people outside of English-speaking countries [10].

In conclusion, Grammarly plays a significant role in assisting writers in improving English grammar errors [3][4][5][8]. However, the usage of this tool still needs to be considered. Further in-depth review is necessary regarding Grammarly's approach in detecting writing errors that may have been missed in previous research so that the usage of Grammarly can be more effective in assisting writers in correcting English grammar errors and minimizing the possibility of writing errors.

III. METHOD

3.1 Detailed Analysis of Selected Studies

The research is conducted by conducting a detailed analysis of several selected studies. The identification of the approaches used in these studies, such as the algorithms or rules employed by Grammarly in detecting writing errors, is carried out. The identification is done by considering the strengths and weaknesses of the approaches in the studies, accompanied by a review of the limitations discovered/acknowledged by the authors of the studies regarding Grammarly's approach.

3.2 Identification through Knowledge Gap

The research is conducted by reviewing previous research findings that may have been overlooked in studying Grammarly's approach to error detection. The review is carried out by comparing the similarities and differences in the previous findings, accompanied by suggestions regarding the direction/recommendations for further development. Suggestions for further research direction may include the development of new algorithms or contextual research to enhance the effectiveness of Grammarly.

IV. RESULTS AND DISCUSSION

After the text edit has been completed, the paper is ready for the template. Duplicate the template file by using the Save As command, and use the naming convention prescribed by your conference for the name of your paper. In this newly created file, highlight all of the contents and import your prepared text file. You are now ready to style your paper; use the scroll down window on the left of the MS Word Formatting toolbar.

A. Result

The researchers utilized ten publications from the period of 2017 to 2023, which were relevant to their study. These articles provided valuable information categorized into benefits, drawbacks, and problems.

1. S. R. M. Lestari, E. Susilowati, and D. S. Sari, "A Systematic Review of Automated Grammar Checking in English Language," 2018.

2. P. V. Kamath and S. Kamath, "Usage of Grammarly – Online Grammar and Spelling Checker Tool at the Health Sciences Library, Manipal Academy of Higher Education, Manipal: A Study," 2020.

3. Y. Fauzia, "Utilizing Grammarly in Evaluating Academic Writing," 2019.

4. Dwi, A.., Darmahusni, Sri, S.., Muchlas, S.., (2023). The Use of Grammarly in the Academic Writing of Undergraduate Students: Advantages, Weaknesses, and Challenges (Systematic Review). English Language and Literature International Conference (ELLiC) Proceedings, 593-605.

5. T. M. Aidil and N. N. Kurniawan, "Exploring Students' Perception on the Effectiveness of 'Grammarly Software' in Academic Writing," 2017.

6. M. A. Ghufron and F. Rosyidi, "The Role Of Grammarly In Assessing English As A Foreign Language (Efl) Writing." 2018.

7. M. Nova, "Utilizing Grammarly in Evaluating Academic Writing: A Narrative Research on EFL Student' Experience," 2018.

8. Calma, V. Cotronei-Baird and A. Chia "Grammarly: An instructional intervention for writing enchancement in management education:" 2022

9. ONeill, R., & Russell, A. (2019). Stop! Grammar time: University students' perceptions of the automated feedback program Grammarly. Australasian Journal of Educational Technology, 35(1).

10. Perdana, S. O. Manullang, F. A. Masri, "Effectiveness of Online Grammarly Application in Improving Academic Writing: Review of Experts Experience" 2021

The findings from the analysis of the ten relevant articles revealed that each researcher identified both advantages and limitations of Grammarly. The specific details of these findings are elaborated in the subsequent explanation.

1. *Perdana, S. O. Manullang, F. A. Masri (2021)*, A study was conducted to assess the effectiveness of incorporating Grammarly in enhancing the English academic writing skills of students. The motivation behind this contextual analysis was to investigate the practicality of using Grammarly in English as a Foreign Language (EFL) writing over a 16-week experimental period at a four-year university in China. The results indicated a significant improvement in students' writing performance throughout the intervention period. This indicates that integrating Grammarly into writing classes proves to be an effective approach for EFL students in enhancing their writing skills.

2. *Dwi, A, Darmahusni, Sri, S, Muchlas, S, (2023)* , The findings indicated that Grammarly demonstrated time efficiency by offering quicker feedback compared to traditional methods. It provided comprehensive grammar feedback, increased student motivation for making corrections, and encouraged greater student autonomy. However, Grammarly also exhibited some drawbacks, including instances where it missed errors, misrepresented errors, provided inaccurate advice, and generated excessive feedback.

3. *ONeill, R & Russel, A (2019)*, A study investigated the perception of academic language checker Grammarly among Scholastic Learning Advisors (ALAs) in Australian tertiary institutions, focusing on its role in assisting or preventing errors. Building upon ONeill & Russell's (2019) examination of student perspectives on Grammarly, this study compared ALAs' views of the program with traditional feedback methods using Microsoft Word. The results showed that for 13 out of 15 statements, ALAs using Grammarly agreed with all assertions regarding the effectiveness of their language guidance. It is suggested that Grammarly should be utilized as a feedback tool for tasks involving ALAs, but only in conjunction with traditional feedback mechanisms.

4. *M. Nova (2018)*, Students have derived several advantages from using this program, which have become the strengths of its effectiveness in assessing academic writing. These include receiving helpful feedback that facilitates learning, convenient accessibility, rapid evaluation speed, and the availability of the service for free. Additionally, these students acknowledged encountering several drawbacks when using Grammarly to assess their academic writing. These drawbacks included receiving feedback that was sometimes misleading, excessive checking of the reference list, and the program's inability to assess the context and content of their writing accurately.

5. *Calma, V. Cotronei-Baird and A. Chia*, the study explored the potential of Grammarly, one of the emerging educational technologies, to enhance students' writing skills within the realm of management education. Our investigation aligns with previous research that emphasizes Grammarly's effectiveness in identifying writing errors. However, the study delves deeper by providing contextual insights into the application of Grammarly within the educational landscape.

From the reviews we conducted on several papers regarding Grammarly and Automated Written Corrective Feedback (AWCF) tools in general, we found that most if not all of them supported the consensus that Grammarly does help, and not only in academic writing but all English writing in general. Those papers also agree that Grammarly has its fair share of strengths and weaknesses. We will first analyze the strengths and weaknesses of Grammarly.

4.1 Strengths of Grammarly

The main feature of Grammarly is its grammar and spellchecker tool. Grammarly is able to check for incorrect sentences and provide feedback regarding the correct grammar that should be used.
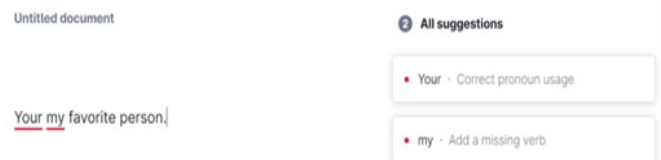

Figure 1. Grammar-checking

Probably the most common use of Grammarly is to correct for spelling, especially for people who don't use English as their mother tongue [6][8].
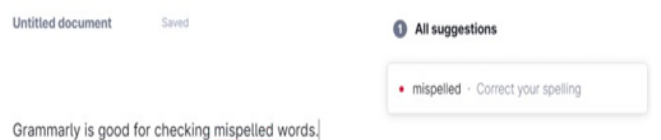

Figure 2. Spell-checking

Even when the writing is technically correct grammar and spelling-wise, Grammarly can still provide suggestions to improve clarity and readability.
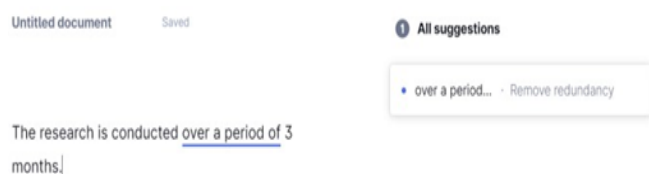
Figure 3. Grammarly providing suggestions to improve clarity

Grammarly works in a lot of apps and devices and it is easy to use so that people who aren't very tech-savvy can still download and use the program without any difficulties [7]. The program is also free, which makes it more accessible to more people, though it does have a premium tier as well with more features such as tone adjustment, formality level, plagiarism detection, and more.

4.2 Weaknesses of Grammarly

Despite its strengths, some people have experiences issues where Grammarly failed to detect any errors, or when it does detect errors it will give feedback that is misleading or just straight up wrong [7]. While Grammarly is good at detecting errors, punctuations, and other surface-level errors, it cannot detect errors in sentence structures. It does not understand context, therefore awkwardly worded sentences can lead to false positives. A research done by Svetlana Kolstovkaia in 2020 titled "Student engagement with automated written corrective feedback (AWCF) provided by Grammarly: A multiple case study" found that while Grammarly did help college students in writing their journal drafts, because of its inability to correct for text structure, they ultimately end up only making slight changes to their drafts while the overall structure of the draft remained the same.
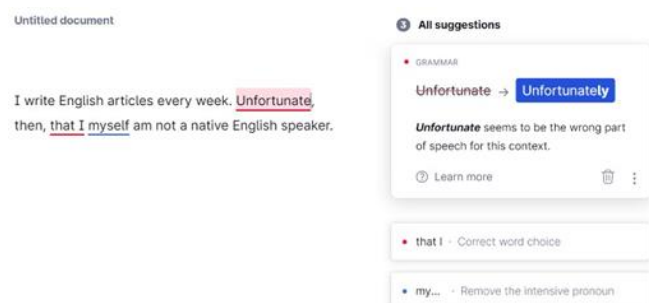

Figure 4. Grammarly detecting errors on a grammatically correct sentence

The sentence in Figure 4 is correct, albeit with an awkward choice of words, but Grammarly detected an error in the usage of the word "Unfortunate". The way the sentence is written is not commonly used but it's still technically correct. This is an extreme example and most people don't write like this, but the papers that we reviewed all suggested that this is a common occurrence even on basic writing too. Some papers also found that Grammarly tends to over-check especially on the references list [5][7], but we haven't been able to replicate the issue.

Most of the shortcomings of Grammarly are possibly due to using the free version of it. The premium tier does offer more features and possibly better checking, but as of now we cannot confirm this as we do not have access to the premium tier and most of the papers that we reviewed did not explicitly make the distinction between the free and premium tier (only one paper did explicitly state that they were conducting the

tests using the free version). The premium version is 12 USD per month, which makes it unaffordable especially for people who live in lower-income countries.

4.3 Use cases of Grammarly

Grammarly can be used for all kinds of writing that use the English language: Office mails, essay writing, or just someone wanting to better their English, and many more. For students, Grammarly can be very helpful for writing essays and journals, especially if they are not native English speakers. Grammarly also helps them to learn English on their own without much assistance from lecturers and teachers, although with the shortcomings mentioned above the presence of a lecturer is still very much needed [9].

Overall, Grammarly increases students' performance in English-related writing. A research done by Dewi Nuro Azah titled "The Effectiveness of Grammarly Checker on Student's Writing Quality of English Department Students at IAIN Tulungagung" compared the writing scores of students before and after they use Grammarly. It found that the mean score of students before using Grammarly was 63,78, and the mean score after using Grammarly was 80,49. All the papers that studied student performance using Grammarly all share this result of increased performance using Grammarly.

Teachers also benefit from using Grammarly. It can assist them in evaluating students' work, effectively reducing the time it takes to evaluate every assignment[10]. And as mentioned above it can be an alternative to teaching English in person, or at least as a complement to the lessons.

B. Discussion

Grammarly offers additional benefits in terms of student engagement, as it provides a comprehensive range of features in its premium version. Moreover, it assists students in learning how to effectively paraphrase text, provides fluency enhancements, offers advanced suggestions, and facilitates improved word choice. The advantages of using Grammarly include enhancing students' autonomy, bolstering their writing skills and self-assurance, deepening their grasp of grammar rules, expanding their vocabulary, promoting the utilization of online learning systems, facilitating tone adjustments, and providing formality level suggestions. The last advantage offered by Grammarly is its convenience, as it offers flexible access anytime and anywhere, saving time by providing prompt feedback compared to traditional methods. It is user-friendly and convenient to use independently for evaluating writing. Additionally, Grammarly seamlessly integrates with various browsers and platforms such as Microsoft Word and Google Translate.

In addition to the benefits, the researchers also highlighted weaknesses associated with Grammarly. These weaknesses include instances where the feedback provided occasionally overlooks errors or presents them inaccurately. Furthermore, the advice given may sometimes be inaccurate, and the tool may generate excessive feedback. Another limitation noted is the requirement of an internet connection for accessing Grammarly. Its effectiveness in improving the structure and substance of writing was diminished due to its inability to identify certain proper nouns. This limitation arises from the fact that Grammarly was developed in the United States, resulting in some terms that are proper nouns

in various contexts, such as names of locations or platforms, not being recognized as such.

V. CONCLUSION

After the analysis of several articles, Grammarly users saw its use as having benefits, drawbacks, and obstacles. The majority of researchers suggest the utilization of Grammarly in academic writing classes due to its numerous benefits, including its ability to assess correctness, clarity, engagement, delivery, and detect plagiarism, along with its convenience. However, some articles also pointed out weaknesses such as the requirement for electrical stability and internet connectivity, the disparity between the free and premium versions of Grammarly, and occasional provision of inaccurate feedback. Additionally, the use of Grammarly presents certain challenges, such as reliance on a large user base over time, the need for thorough review of results due to the potential limitations of AI replacing human abilities, and the necessity for teachers to develop appropriate instructional methods and evaluation rubrics to enhance students' English language skills.

Grammarly is a valuable tool for students and teachers alike. It corrects errors in English written sentences and can help in learning English on the way. Students, native speakers or not, saw an improvement in their English writing and English test scores. Teachers can also use it to help them assess their students' work, making their job easier and less timeconsuming. However, it does have its shortcomings and sometimes false positives can lead to confusion. These can be alleviated by subscribing to the premium version, which does have more features and supposedly better context understanding. However, at 12 USD a month, it is unaffordable for a lot of people.

5.1 Suggestions

After looking at the results, we came up with a few suggestions to improve Grammarly's service.

1. A lot of non-English speaking students use Grammarly to help do their writing. While doing this they can learn a lot of English just by using Grammarly without any assistance from a teacher. Therefore, we suggest that Grammarly add writing exercises in their app. This way the students can further learn English away from school or college and further incentivizes learning English independently. This doesn't just benefit non-English speakers, as native English speakers also sometimes struggle with grammar and pronunciations.

2. Grammarly sometimes comes up with false positives in its detection. While rare, it can hinder people's work and can lead to confusion and frustration. With the rise of Artificial Intelligence tools like ChatGPT from OpenAI, we believe that integrating these AIs into Grammarly could help in understanding context and sentence structure.

3. Most people are using the free version of Grammarly[4]. This is in part due to its expensive monthly and annual subscription. Therefore, to increase accessibility we suggest either lowering the subscription fee, adding more features to the free version, or making a new cheaper entry-level version that has some of the essential premium features like the improved context awareness and reserve all the other higher-end features for the premium version.

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