
PERCEIVED EFFECTIVENESS OF GRAMMARLY AND QUILLBOT IN SUPPORTING ENGLISH WRITING SKILLS

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Abstract: *This study aims to analyze students' perceptions of using Grammarly and QuillBot in writing at MA Annur Teluk Palinget. This research employed a mixed-methods approach with a convergent parallel design. The population consisted of 95 students, with 65 students selected as the sample and 9 students involved in interviews. Data were collected through questionnaires and semi-structured interviews. Quantitative data were analyzed using descriptive statistics, while qualitative data were analyzed using thematic analysis. The findings show that students have highly positive perceptions of both tools, with an identical mean score of 3.85 categorized as "very positive." Accessibility received the highest agreement (97%), indicating that flexibility and ease of use strongly influence students' engagement. Both tools were perceived as effective in providing feedback and improving grammar, particularly in sentence structure and subject-verb agreement, although difficulties in tense usage remain. Grammarly is mainly used for grammar correction, while QuillBot supports paraphrasing and sentence variation. Overall, both tools complement each other in enhancing writing development in EFL contexts.*

INTRODUCTION

Writing is one of the most essential skills in learning English, particularly in the context of English as a Foreign Language (EFL). It enables students to express ideas, convey information, and communicate effectively in both academic and real-life contexts. However, many students encounter difficulties in developing their writing skills. These challenges include generating and organizing ideas, limited vocabulary, and problems in applying correct grammatical structures. As a result, students often produce writing that lacks clarity, coherence, and grammatical accuracy.

Among these challenges, grammar remains one of the most significant obstacles in writing. Students frequently struggle with sentence construction, verb tenses, and subject-verb agreement, which can hinder their ability to communicate effectively. These difficulties

are often caused by limited exposure to English, lack of practice, and insufficient feedback during the writing process. Therefore, providing effective support and feedback is essential to help students improve their writing performance.

With the rapid advancement of technology, Artificial Intelligence (AI)-based writing tools have emerged as innovative solutions to assist students in overcoming writing difficulties. Two widely used tools are Grammarly and QuillBot. Grammarly is an AI-powered writing assistant that provides real-time feedback on grammar, punctuation, and style, helping students identify and correct errors. Meanwhile, QuillBot is designed to assist users in paraphrasing and restructuring sentences, enabling students to improve sentence variation and avoid repetition. Both tools offer accessible and user-friendly features that support independent learning.

Despite the increasing use of these tools in educational settings, understanding students' perceptions of their use is crucial. Perception plays a significant role in shaping students' attitudes, motivation, and engagement in learning. Positive perceptions can enhance students' willingness to use learning tools and improve their learning outcomes, while negative perceptions may hinder their effectiveness. Therefore, examining how students perceive Grammarly and QuillBot is important to determine their role in supporting writing development.

Previous studies have shown that AI-based writing tools can improve students' writing performance, particularly in grammar and vocabulary. However, most studies tend to focus on the effectiveness of a single tool rather than comparing multiple tools within the same context. Moreover, limited research has explored students' perceptions of using both Grammarly and QuillBot simultaneously, especially in secondary school settings.

Based on these considerations, this study aims to comprehensively investigate students' perceptions of using Grammarly and QuillBot as AI-assisted writing tools at MA Annur Teluk Palinget. This study specifically examines students' perceptions across four key dimensions, namely accessibility, feedback quality, knowledge and ability development, and overall learning experience. By analyzing these dimensions, the study seeks to provide a deeper understanding of how students interact with and evaluate the effectiveness of these tools in supporting their writing practices.

This research also aims to identify the extent to which Grammarly and QuillBot facilitate grammar improvement, enhance writing performance, and promote learner autonomy. The findings of this study are expected to offer valuable insights into the pedagogical role of AI-based writing tools in EFL contexts, as well as to contribute to the development of more effective, technology-integrated teaching strategies that align with students' learning needs and digital literacy development.

METHOD

This study employed a mixed-methods approach using a convergent parallel design. This design allows the researcher to collect and analyze quantitative and qualitative data simultaneously, then integrate the results to obtain a comprehensive understanding of students' perceptions of using Grammarly and QuillBot in writing.

The study was conducted at MA Annur Teluk Palinget. The population consisted of 95 students. From this population, 65 students were selected as the sample for the quantitative

phase using total sampling. In addition, 9 students were selected purposively to participate in semi-structured interviews for the qualitative phase. The selection of interview participants was based on their willingness and ability to provide in-depth information.

The instruments used in this study were a questionnaire and an interview guide. The questionnaire consisted of 22 items designed to measure students' perceptions of Grammarly and QuillBot across four dimensions, namely accessibility, feedback quality, knowledge and ability development, and learning experience. The questionnaire used a Likert scale ranging from strongly disagree to strongly agree. Meanwhile, the semi-structured interviews were conducted to gain deeper insights into students' experiences and perspectives in using both tools.

The data collection process was conducted in two stages. First, the questionnaire was distributed to students using an online platform. Second, interviews were conducted with selected participants to explore their responses in more detail. All data were collected within the same period to ensure consistency with the convergent parallel design.

Quantitative data were analyzed using descriptive statistics, including percentages and mean scores, to determine the level of students' perceptions. The results were then categorized into levels such as very positive, positive, neutral, negative, and very negative. Meanwhile, qualitative data from interviews were analyzed using thematic analysis. The researcher identified, categorized, and interpreted recurring themes related to students' perceptions of Grammarly and QuillBot.

Finally, the quantitative and qualitative findings were integrated and compared to provide a comprehensive interpretation of the data. This integration allowed the researcher to validate the results and gain a deeper understanding of how students perceive the use of AI-based writing tools in their learning process.

RESULTS AND DISCUSSION

1. Students' Perceptions of Grammarly

The findings of this study indicate that students have very positive perceptions of Grammarly, particularly in terms of accessibility, feedback clarity, and its contribution to grammar improvement. The high percentage of agreement (above 90% in most items) reflects that Grammarly is perceived not only as a corrective tool but also as a learning support system. Nevertheless, minor limitations in areas such as tense understanding and complete reliance on the tool suggest the need for complementary instructional support from teachers.

Table 1. Students' Perceptions of Grammarly

No	Statement	Frequency				Percentage			
		SD	D	A	SA	SD	D	A	SA
1	Grammarly provides feedback on the grammar mistakes I make.	0	0	5	60	0%	0%	8%	92%
2	Grammarly provides explanations on how to correct the grammar mistakes I make.	0	1	5	59	0%	2%	8%	91%
3	Grammarly gives suggestions to correct the grammar mistakes I make.	0	0	4	61	0%	0%	6%	94%

4	Grammarly is more efficient even though I use the free version.	0	0	5	60	0%	0%	8%	92%
5	Grammarly can be accessed more quickly.	0	0	6	59	0%	0%	9%	91%
6	Grammarly can be accessed anytime and anywhere.	0	0	2	63	0%	0%	3%	97%
7	Grammarly has procedures that are easier to use.	0	1	9	55	0%	2%	14%	85%
8	I do not feel difficulty using Grammarly even though there is no Indonesian language option.	0	1	9	55	0%	2%	14%	85%
9	I do not need a good internet connection to use Grammarly effectively.	0	2	6	57	0%	3%	9%	88%
10	The grammar feedback given by Grammarly is clearer and easier to understand compared to other tools.	0	1	9	55	0%	2%	14%	85%
11	Feedback from Grammarly is more accurate in correcting my grammar mistakes.	0	0	12	53	0%	0%	18%	82%
12	Feedback from Grammarly helps me better recognize and understand the grammar mistakes I often make.	0	0	9	56	0%	0%	14%	86%
13	Grammarly is more effective in developing my English grammar skills.	0	0	9	56	0%	0%	14%	86%
14	Grammarly helps me better understand the use of subject-verb agreement in sentences.	0	0	7	58	0%	0%	11%	89%
15	Grammarly's tense corrections are more accurate and help me avoid mistakes in tense usage.	0	3	10	52	0%	5%	15%	80%
16	Grammarly gives more effective suggestions to improve my sentence structure to be clearer and easier to understand.	0	1	8	56	0%	2%	12%	86%
17	I use Grammarly more often compared to other tools.	0	3	10	52	0%	5%	15%	80%
18	I trust the grammar suggestions and corrections given by Grammarly more.	0	4	5	56	0%	6%	8%	86%
19	I am more confident that Grammarly has improved my ability to write grammatically correct sentences.	0	1	7	57	0%	2%	11%	88%
20	I am more satisfied with Grammarly as a tool for correcting grammar.	0	1	3	61	0%	2%	5%	94%

21	I am more satisfied with Grammarly as a tool for learning grammar.	0	2	6	57	0%	3%	9%	88%
22	Grammarly increases my motivation to learn grammar.	0	1	11	53	0%	2%	17%	82%

Source: Primary Research Data, 2025

The data presented in Table 1 indicate that students have overwhelmingly positive perceptions of Grammarly across all measured aspects, as reflected in the high percentages of “Agree” and “Strongly Agree” responses. Notably, none of the respondents selected “Strongly Disagree,” and only a very small percentage selected “Disagree,” indicating a strong consensus toward positive evaluation.

Accessibility. One of the most significant aspects influencing students’ perceptions is accessibility. The finding that 97% of students strongly agreed that Grammarly can be accessed anytime and anywhere highlights the importance of flexibility in digital learning environments. This supports previous studies suggesting that accessibility is a key factor in shaping positive perceptions toward educational technology, as it allows students to engage in learning activities beyond the classroom.

Statements related to efficiency and ease of access (items 4 and 5) also received very high agreement levels, with over 90% of students selecting “Strongly Agree.” These findings suggest that accessibility is a key factor influencing students’ positive perceptions of Grammarly.

Feedback quality. Students highly valued the feedback provided by Grammarly. More than 90% of students reported that the feedback was clear, understandable, and helpful in identifying grammatical errors. This aligns with the theory that immediate and explicit feedback enhances learning by allowing students to recognize and correct their mistakes in real time. Grammarly’s ability to provide explanations, rather than simple corrections, plays a crucial role in promoting deeper understanding of grammar concepts.

Statement 3, which relates to Grammarly giving suggestions for correcting grammar mistakes, received 94% “Strongly Agree,” indicating that students strongly value its corrective function. Additionally, statements 1 and 2 show that more than 90% of students agreed that Grammarly provides feedback and explanations for grammar mistakes. This suggests that students benefit from both direct corrections and explanatory feedback, which enhances their understanding of grammar.

Knowledge and ability development. Grammarly was found to significantly contribute to students’ grammar development. Students reported improvements in subject-verb agreement, sentence structure, and overall grammatical accuracy. This suggests that the tool functions as a form of guided learning, where students gradually internalize grammatical rules through repeated exposure to corrections and suggestions.

The results indicate strong positive perceptions on Grammarly. Statements 12 and 13 show that 86% of students strongly agreed that Grammarly helps them recognize and understand grammar mistakes and develop their grammar skills. Furthermore, 89% of students strongly agreed that Grammarly helps them understand subject-verb agreement. However, slightly lower agreement was observed in statement 15 (80% strongly agree), which relates to tense usage. This indicates that tense remains a relatively challenging aspect, even with the support of Grammarly.

Learning experience. students reported high levels of satisfaction, trust, and motivation. Statement 20 shows that 94% of students strongly agreed that they are satisfied with Grammarly as a grammar correction tool, while statement 19 indicates that 88% feel more confident in their writing ability. Additionally, statement 22 shows that 82% of students strongly agreed that Grammarly increases their motivation to learn grammar. These findings suggest that Grammarly not only supports technical aspects of writing but also positively influences students' affective factors, such as confidence and motivation.

This indicates that while Grammarly is effective in identifying errors, it may not always provide sufficient contextual explanations for more complex grammatical structures. This finding is consistent with previous research stating that certain aspects of grammar, such as tense usage, require deeper cognitive processing and cannot be fully addressed by automated tools alone.

However, despite these positive perceptions, some limitations were identified. A small percentage of students expressed difficulties in understanding tense corrections. For instance, statement 17 indicates that only 80% of students strongly agreed that they use Grammarly more often than other tools, suggesting that some students still rely on alternative tools. Similarly, statement 18 shows slightly lower agreement (86%) regarding trust in Grammarly's suggestions, indicating that while students generally trust the tool, a small proportion may still critically evaluate its feedback.

Another important finding is related to students' trust in Grammarly. Although most students expressed high confidence in the tool, some students showed slight hesitation in fully relying on its suggestions. This suggests that students are developing critical awareness in using AI-based tools, which is a positive indicator of digital literacy. They do not blindly accept corrections but instead evaluate and sometimes verify them independently.

Overall, the discussion reveals that students perceive Grammarly as an effective, accessible, and supportive tool for improving writing skills. Its strengths lie in providing immediate feedback and enhancing grammar awareness, while its limitations highlight the need for complementary instruction from teachers. Therefore, Grammarly should be integrated as a supporting tool rather than a replacement for traditional teaching methods.

2. Students' Perceptions of QuillBot

The findings of this study reveal that students have very positive perceptions of QuillBot, particularly in terms of accessibility, paraphrasing capability, and its contribution to improving writing quality. Similar to Grammarly, the majority of students expressed strong agreement across most questionnaire items, indicating that QuillBot is widely accepted as a useful writing support tool.

Table 2. Students' Perceptions of QuillBot

No	Statement	Frequency				Percentage			
		SD	D	A	SA	SD	D	A	SA
1	QuillBot provides feedback on the grammar mistakes I make.	0	0	6	59	0%	0%	9%	91%
2	QuillBot provides explanations on how to correct the grammar mistakes I make.	0	1	6	58	0%	2%	9%	89%
3	QuillBot gives suggestions to correct the grammar mistakes I make.	0	0	5	60	0%	0%	8%	92%

4	QuillBot is more efficient even though I use the free version.	0	0	5	60	0%	0%	8%	92%
5	QuillBot can be accessed more quickly.	0	0	6	59	0%	0%	9%	91%
6	QuillBot can be accessed anytime and anywhere.	0	0	2	63	0%	0%	3%	97%
7	QuillBot has procedures that are easier to use.	0	1	9	55	0%	2%	14%	85%
8	I do not feel difficulty using QuillBot even though there is no Indonesian language option.	0	1	10	54	0%	2%	15%	83%
9	I do not need a good internet connection to use QuillBot effectively.	0	2	6	57	0%	3%	9%	88%
10	The grammar feedback given by QuillBot is clearer and easier to understand compared to other tools.	0	0	10	55	0%	0%	15%	85%
11	Feedback from QuillBot is more accurate in correcting my grammar mistakes.	0	0	12	53	0%	0%	18%	82%
12	Feedback from QuillBot helps me better recognize and understand the grammar mistakes I often make.	0	0	9	56	0%	0%	14%	86%
13	QuillBot is more effective in developing my English grammar skill.	0	0	9	56	0%	0%	14%	86%
14	QuillBot helps me better understand the use of subject-verb agreement in sentences.	0	0	7	58	0%	0%	11%	89%
15	QuillBot's tense corrections are more accurate and help me avoid mistakes in tense usage.	0	3	10	52	0%	5%	15%	80%
16	QuillBot gives more effective suggestions to improve my sentence structure to be clearer and easier to understand.	0	1	8	56	0%	2%	12%	86%
17	I use QuillBot more often compared to other tools.	0	2	11	52	0%	3%	17%	80%
18	I trust the grammar suggestions and corrections given by QuillBot more.	0	4	5	56	0%	6%	8%	86%
19	I am more confident that QuillBot has improved my ability to write grammatically correct sentences.	0	0	8	57	0%	0%	12%	88%
20	I am more satisfied with QuillBot as a tool for correcting grammar.	0	1	3	61	0%	2%	5%	94%
21	I am more satisfied with QuillBot as a tool for learning grammar.	0	1	7	57	0%	2%	11%	88%
22	QuillBot increases my motivation to learn grammar.	0	1	11	53	0%	2%	17%	82%

Source: Primary Research Data, 2025

Analysis of Students' Perceptions of QuillBot

The data presented in Table 2 indicate that students have highly positive perceptions of QuillBot across all measured aspects. This is reflected in the dominance of "Agree" and "Strongly Agree" responses in all items, with no responses recorded under "Strongly Disagree" and only a minimal percentage under "Disagree." These findings suggest a strong consensus among students regarding the effectiveness of QuillBot as a writing support tool.

Accessibility. One of the most prominent aspects influencing students' perceptions is accessibility. Statement 6 shows that 97% of students strongly agreed that QuillBot can be accessed anytime and anywhere, making it the highest-rated item. Similarly, statements related to efficiency and speed of access (items 4 and 5) also received high agreement levels, with more than 90% of students selecting "Strongly Agree." This indicates that accessibility and convenience are key factors contributing to students' positive perceptions of QuillBot. This high level of agreement emphasizes the importance of flexibility in digital learning tools. Students reported that they could easily use QuillBot both on mobile devices and laptops, allowing them to revise their writing in various contexts. This supports the idea that accessible technology enhances student engagement and promotes independent learning.

Feedback quality. Students highly appreciated QuillBot's paraphrasing features. Statement 3, which refers to QuillBot providing suggestions to correct grammar mistakes, received 92% "Strongly Agree." Additionally, statements 1 and 2 indicate that over 89% of students agreed that QuillBot provides feedback and explanations for grammar errors. These results suggest that students perceive QuillBot as an effective tool for identifying and correcting grammatical mistakes, although its explanatory function is slightly less dominant compared to its corrective suggestions.

The ability to rephrase sentences while maintaining the original meaning was considered particularly helpful in improving vocabulary and avoiding repetition. Many students perceived QuillBot as an effective tool for generating alternative expressions, which contributed to better sentence variety and overall writing quality. This indicates that QuillBot plays a significant role not only in correcting errors but also in enhancing linguistic creativity.

Knowledge and ability development. QuillBot was perceived as beneficial in improving students' understanding of grammar and sentence structure. The findings show that QuillBot contributes positively to students' grammar improvement. Statements 12 and 13 indicate that 86% of students strongly agreed that QuillBot helps them recognize grammatical errors and develop their grammar skills. Furthermore, 89% of students strongly agreed that QuillBot supports their understanding of subject-verb agreement. However, similar to other findings, statement 15 related to tense usage shows a slightly lower percentage (80% strongly agree), suggesting that tense remains a challenging aspect even with the use of QuillBot.

A high percentage of students agreed that the tool helped them recognize grammatical errors and improve their sentence construction. This suggests that QuillBot indirectly supports grammar learning by exposing students to improved versions of their sentences, allowing them to compare and learn from the changes.

Learning experience. Students reported high levels of satisfaction, confidence, and motivation. Statement 20 shows that 94% of students strongly agreed that they are satisfied with QuillBot as a grammar correction tool, while statement 19 indicates that 88% feel more confident in their writing ability after using the tool. Additionally, 82% of students strongly agreed that QuillBot increases their motivation to learn grammar. These results highlight that QuillBot not only supports cognitive aspects of writing but also positively influences students' affective domain.

However, similar to Grammarly, some limitations were identified in students' perceptions. Statement 17 shows that 80% of students strongly agreed that they use QuillBot

more frequently than other tools, indicating that some students still utilize alternative applications. Similarly, statement 18 shows slightly lower agreement (86%) regarding trust in QuillBot's suggestions, suggesting that a small proportion of students critically evaluate the feedback provided by the tool.

A small percentage of students reported difficulties in understanding tense corrections provided by QuillBot. This finding indicates that although QuillBot is effective in restructuring sentences, it may not always provide sufficient explanations for complex grammatical rules. As a result, students may rely on additional resources or teacher guidance to fully understand these aspects.

Another important finding relates to students' usage patterns. Interview results revealed that students tend to use QuillBot strategically, especially for paraphrasing tasks rather than direct grammar checking. This indicates that students are able to differentiate the functions of various AI tools and select them based on specific learning needs. Such behavior reflects an increasing level of digital literacy and critical thinking among students. Moreover, students reported increased motivation and confidence when using QuillBot. The ability to produce clearer and more varied sentences contributed to a sense of achievement, which encouraged them to engage more actively in writing tasks. This supports the notion that positive technological experiences can enhance students' self-efficacy and motivation in language learning.

In conclusion, the discussion highlights that students perceive QuillBot as an effective and flexible tool for improving writing, particularly in paraphrasing and sentence development. While it has certain limitations in explaining complex grammar, its strengths in enhancing vocabulary and writing variation make it a valuable complement to other tools such as Grammarly. Therefore, QuillBot should be integrated into writing instruction as a supportive tool to enhance students' overall writing performance.

3. Comparison of Grammarly and QuillBot

The findings of this study reveal a remarkable similarity in students' perceptions of Grammarly and QuillBot, as both tools achieved identical overall mean scores of 3.85, categorized as "very positive." This result indicates that students perceive both applications as equally effective in supporting their writing development, particularly in grammar learning.

One of the most significant similarities between the two tools lies in accessibility. Both Grammarly and QuillBot received the highest level of agreement (97%) for being accessible anytime and anywhere. This finding suggests that accessibility is a dominant factor influencing students' perceptions, regardless of the specific features offered by each application. It reinforces the idea that students prioritize convenience and flexibility in using digital learning tools.

In terms of feedback quality, both applications also demonstrated identical mean scores (3.84), indicating that students view the feedback provided by Grammarly and QuillBot as equally clear, accurate, and helpful. The consistency in responses suggests that students evaluate AI-based feedback using similar criteria, such as clarity of correction, ease of understanding, and usefulness in identifying errors. This convergence implies that both tools meet the fundamental expectations of students in receiving effective writing assistance.

Similarly, in the dimension of knowledge and ability development, both tools obtained the same mean score (3.84). Students reported improvements in grammar, particularly in subject-verb agreement and sentence structure, when using both applications. However, a consistent limitation was observed in tense usage, where a small percentage of students expressed difficulty. The identical pattern across both tools indicates that challenges in mastering complex grammatical structures are not tool-specific but rather inherent in the nature of language learning.

Despite these similarities, subtle differences emerged from the qualitative findings. Grammarly was generally perceived as more effective for direct grammar checking due to its detailed explanations and error-focused feedback. In contrast, QuillBot was more commonly used for paraphrasing and improving sentence variation. This indicates that while students perceive both tools as equally effective overall, they differentiate their functions and use them strategically based on specific writing needs.

Another important aspect is students' learning experience. Both tools achieved nearly identical scores in this dimension, with QuillBot slightly higher (3.84) than Grammarly (3.83), although the difference is negligible. Students reported increased confidence, satisfaction, and motivation when using both tools. This suggests that positive experiences with AI-based applications contribute to enhanced self-efficacy in writing.

The identical overall scores across all dimensions suggest a phenomenon of perceptual equivalence, where students evaluate different tools similarly because they fulfill the same fundamental learning needs. This indicates that students are more concerned with the effectiveness of the tools in supporting their writing rather than their specific technical differences.

In conclusion, the comparison demonstrates that Grammarly and QuillBot are perceived as complementary rather than competing tools. Grammarly excels in grammar correction and explanation, while QuillBot is more effective in paraphrasing and enhancing sentence variety. Their combined use can provide a more comprehensive support system for students' writing development. Therefore, integrating both tools in writing instruction is highly recommended to maximize learning outcomes.

DISCUSSION

The findings of this study not only demonstrate students' positive perceptions of Grammarly and QuillBot but also highlight important implications regarding the role of AI-based tools in language learning. One key aspect emerging from the data is the strong relationship between accessibility and students' engagement. The high level of agreement (97%) indicates that students are more likely to adopt and consistently use tools that are flexible and easy to access. This suggests that technological convenience plays a crucial role in shaping students' learning behaviors, particularly within digital learning environments.

Accessibility also emerges as the most influential factor shaping students' perceptions of both Grammarly and QuillBot. The majority of students emphasized that these tools can be accessed anytime and anywhere, which enhances their usability across different contexts. Students reported being able to use the applications on various devices, such as smartphones and laptops, enabling them to engage in writing activities beyond the classroom setting. This

flexibility not only supports independent learning but also encourages continuous practice, thereby reinforcing the role of accessible digital tools in promoting learner autonomy.

Another significant aspect highlighted in the findings is the role of feedback in facilitating learning. Both Grammarly and QuillBot provide immediate feedback, which is highly valued by students. From a pedagogical perspective, such immediacy enables learners to identify and correct errors in real time, thereby enhancing the learning process. The strong agreement in feedback-related items indicates that students perceive these tools not only as corrective mechanisms but also as learning aids that support their understanding of grammar. However, it should be noted that the feedback provided tends to be surface-level and may not always foster deeper grammatical comprehension, particularly in more complex areas such as tense usage.

Further analysis of feedback quality reveals that both tools achieved identical mean scores (3.84), indicating that students consider the feedback to be clear, accurate, and helpful. Despite this similarity, each tool demonstrates distinct strengths. Grammarly is particularly valued for its explicit explanations, which help students understand the underlying reasons for grammatical corrections. In contrast, QuillBot contributes to learning by offering alternative sentence structures, thereby indirectly enhancing students' grammatical awareness. These findings suggest that both direct and indirect forms of feedback play complementary roles in supporting students' writing development and overall learning experience.

The dimension of knowledge and ability development also showed identical results (mean score 3.84), indicating that both tools contribute significantly to improving students' grammar skills. Students reported noticeable improvements in subject-verb agreement, sentence structure, and overall grammatical accuracy. However, tense usage remained a challenge, as reflected by a small percentage of disagreement in both tools. This suggests that complex grammatical concepts require deeper cognitive processing and cannot be fully addressed by automated feedback alone. Therefore, teacher guidance remains essential in supporting students' understanding of advanced grammar.

Another important finding relates to students' learning experiences. Both tools received very positive responses in terms of increasing motivation, confidence, and satisfaction. Students reported that using Grammarly and QuillBot made writing tasks easier and more enjoyable. Positive reinforcement, such as clear corrections and improved sentence output, contributed to increased self-efficacy. This aligns with learning theories suggesting that positive experiences with technology enhance motivation and engagement.

Moreover, the findings suggest that students demonstrate a certain level of digital literacy in their use of AI tools. They do not rely on a single tool but instead use Grammarly and QuillBot strategically for different purposes. Grammarly is primarily used for grammar checking due to its accuracy and detailed feedback, while QuillBot is used for paraphrasing and improving sentence variety. This indicates that students are capable of selecting appropriate tools based on their specific needs, which reflects a higher level of critical and strategic thinking in technology use. This finding also indicates that students do not perceive the tools as competitors but rather as complementary resources. They strategically select each tool based on their specific writing needs, demonstrating an emerging level of digital literacy and critical thinking.

The identical scores across all measured dimensions indicate a phenomenon that can be described as perceptual equivalence, in which different technological tools are evaluated similarly because they fulfill the same core learning needs. This suggests that students do not necessarily differentiate between tools based on their specific technical features, but rather on their overall functionality and usefulness in supporting learning tasks. In this context, aspects such as effectiveness, accessibility, and ease of use emerge as the primary criteria influencing students' evaluations.

Furthermore, this finding highlights that students tend to adopt a pragmatic approach when engaging with educational technology. Instead of focusing on the sophistication or uniqueness of individual features, they prioritize how well the tools assist them in achieving their learning goals, particularly in improving writing and grammar skills. This reflects a shift from technology-centered evaluation to user-centered evaluation, where the perceived value of a tool is determined by its practical benefits and usability.

Consequently, the results imply that the success of AI-based educational tools is not solely dependent on their technological advancement, but also on their alignment with learners' needs and expectations. Tools that are accessible, easy to use, and capable of providing meaningful support are more likely to be accepted and utilized by students. Therefore, developers and educators should focus not only on enhancing technical sophistication but also on ensuring that such tools remain relevant, user-friendly, and pedagogically meaningful within the learning context.

In conclusion, the discussion highlights that both Grammarly and QuillBot are highly effective in supporting students' writing development. Their strengths complement each other, with Grammarly focusing on grammatical accuracy and QuillBot enhancing sentence variation and paraphrasing. However, their limitations in addressing complex grammar emphasize the need for teacher involvement. Therefore, integrating both tools alongside traditional instruction can provide a more comprehensive and effective learning experience.

CONCLUSION

This study concludes that students have very positive perceptions of using Grammarly and QuillBot in writing, as evidenced by the identical overall mean score of 3.85, which is classified within the "very positive" category. This finding suggests that both tools are perceived as equally effective in facilitating students' writing development, particularly in terms of grammatical competence. There is no significant difference in students' perceptions of the two applications, indicating that both can be used simultaneously to support writing learning.

The findings reveal that accessibility is the most influential factor shaping students' perceptions, with the highest agreement level (97%) for both tools. Students highly value the flexibility of being able to access Grammarly and QuillBot anytime and anywhere, which supports independent and continuous learning. In addition, both tools provide clear, accurate, and helpful feedback, enabling students to identify and understand their grammatical errors more effectively.

Furthermore, the use of Grammarly and QuillBot contributes significantly to students' knowledge and ability development. Students reported improvements in key areas such as subject-verb agreement, sentence structure, and overall grammatical accuracy. However,

tense usage remains a challenge for some students, indicating that complex grammatical aspects require deeper understanding beyond automated feedback.

The study also found that both tools positively influence students' learning experience. Students reported increased confidence, motivation, and satisfaction when using these applications, suggesting that AI-based writing tools can enhance engagement in language learning. Additionally, students demonstrated strategic use of the tools, with Grammarly primarily used for grammar checking and QuillBot for paraphrasing and sentence variation. In conclusion, Grammarly and QuillBot function as complementary tools rather than competing ones. While Grammarly is more effective in providing detailed grammar feedback, QuillBot excels in enhancing sentence variation and paraphrasing. Therefore, integrating both tools in writing instruction is highly recommended to provide a more comprehensive learning experience. However, the role of teachers remains essential in guiding students, especially in understanding complex grammatical concepts that cannot be fully addressed by AI tools.

Suggestions

Based on the findings of this study, several suggestions are proposed for teachers, students, and future researchers.

First, for teachers, it is recommended to integrate AI-based writing tools such as Grammarly and QuillBot into classroom instruction. These tools can be used to support grammar learning, provide immediate feedback, and enhance students' writing practice. However, teachers should also provide guidance and explanation, particularly for complex grammatical aspects such as tense usage, which may not be fully addressed by automated tools. Therefore, the role of the teacher remains essential in facilitating deeper understanding.

Second, for students, it is suggested to use Grammarly and QuillBot strategically to maximize their learning outcomes. Students are encouraged to utilize Grammarly for grammar checking and error correction, while QuillBot can be used for paraphrasing and improving sentence variation. In addition, students should not rely solely on these tools but should also critically evaluate the feedback provided to develop their grammatical awareness and independent learning skills.

Third, for future researchers, it is recommended to conduct further studies on the effectiveness of AI-based writing tools in different contexts and with larger sample sizes. Future research may also explore additional variables such as students' motivation, self-efficacy, and long-term learning outcomes. Moreover, experimental studies could be conducted to measure the actual impact of Grammarly and QuillBot on students' writing performance.

In conclusion, while Grammarly and QuillBot are highly beneficial in supporting writing development, their optimal use requires a balanced integration with teacher guidance and students' critical engagement.

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