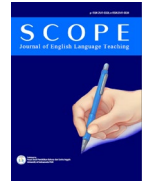




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Research Article

Students' Reflections on Grammarly as a Tool for Academic Writing Support: Perceived Knowledge and Challenges in Higher Education

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KEYWORDS

Perceived Knowledge;
 Grammarly;
 Academic Writing Tool;
 Challenge

A B S T R A C T

The advancement of technology has led to the widespread use of AI-based tools in education, enhancing learning processes across various skills. While AI is being integrated into many areas, its application in the assessment of writing skills, such as through Grammarly, is still emerging, offering more accurate and efficient evaluations. This study explores students' perceived knowledge of the use of Grammarly in academic writing, it aims to provide an overview of academic writing skills including its challenges. Employing a qualitative research approach with a survey design, the study involved 120 English Department students of private who enrolled Writing course using the premium version of Grammarly. Data collection methods included online closed-ended questionnaires and online semi-structured interviews to ensure a comprehensive range of responses. The findings indicate that most students believe Grammarly helps them independently correct their academic writing. The most frequently used feature is 'correctness,' primarily for grammar and spelling corrections, while the least used is 'plagiarism detection.' However, several features, including writing context, punctuation, spelling, passive voice, and plagiarism detection, were found to be occasionally inaccurate. To address these inaccuracies, students employed strategies such as proofreading, consulting dictionaries, using Google or other applications, seeking help from peers and lecturers, and reading suggestion descriptions carefully. Despite these limitations, students reported gaining knowledge in writing mechanics, vocabulary enhancement, self-awareness, and self-confidence through Grammarly. They found that feedback from lecturers, peers, and Grammarly complemented each other in writing classes. It is important to monitor students' attitudes towards using Grammarly for automatic corrections, highlighting the need for self-assessment to recognize their writing mistakes. This study suggests that integrating technology, specifically AI, into English language teaching (ELT) can significantly benefit writing classes. Further research should examine the impact of incorporating Grammarly into the academic writing process to understand its collaborative role in writing instruction.

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INTRODUCTION

Background

Currently, education has experienced significant advancements through the integration of advanced and

current technology. Abundant research has been done on the application technology in the education field such as WhatsApp (Setyowati, 2019), (Dahdal, 2020), (Hanim, 2021), (Rinantanti, 2024), discord (Wahyuningsih & Baidi, 2021), (Aldebarant et al., 2023), telegram (Muniroh et al.,

2022), TED video (Setyowati & Kuswahono, 2018) and LMS (Priyambudi et al., 2021) and many more.

Artificial Intelligence (AI), prompting educators to consider the use of new technologies to enhance English Language Teaching (Jiang et al., 2023). (Patty, 2024) describes AI as the capability of digital computers or computer-controlled programs to execute tasks typically associated with intelligent beings. This term often refers to system development projects that exhibit intellectual processes characteristic of humans, such as reasoning, finding meaning, generalizing, or learning from experience. (Cotton et al., 2024) define AI as the simulation of human intelligence by machines, particularly computer systems. Common AI applications include expert systems, natural language processing, speech recognition, and machine vision, emphasizing the science and technology of creating intelligent machines, especially intelligent software. The benefits of advanced technology significantly impact student engagement in the writing process. (Cotton et al., 2024) assert that digital tools can enhance students' writing skills by encouraging constructive feedback during the learning process. Technological advancements allow students to utilize various programs to support independent writing. In higher education, students and instructors can employ automatic writing evaluation (AWE) tools to assess writing outcomes, reflecting technological progress in a global society. Consequently, these advancements drive the development of new applications that facilitate teaching and learning, particularly in academic writing. Grammarly is a popular AWE program widely used by Indonesian students and people worldwide, It is designed to improve written English by providing automatic feedback based on linguistic principles and algorithms, correcting grammar and other writing errors. Grammarly helps writers produce organized and error-free texts by identifying grammatical issues, plagiarism, and data similarities with online sources. Users receive suggestions for corrections, including punctuation and vocabulary (Wale, 2024), (Selim, 2024).

Studies have shown that Grammarly is beneficial for academic writing, making student work more polished and freer of errors (Rejeki, 2023), (Abu Guba et al., 2024). While the free version of Grammarly detects many errors, the premium version offers more detailed feedback. Grammarly can be integrated with platforms like Microsoft Word and Google Docs, enhancing its usability across different applications) (Alharbi, 2020), (Mohammadi et al., 2023). Despite its capabilities, Grammarly should complement, not replace, human creativity and originality in writing.

Meanwhile, Indonesian students bear a significant responsibility in elevating academic essay writing

standards by utilizing refined practices essential for effective communication and research dissemination. This thorough process involves extensive research, structured argumentation, and clear expression to contribute to scholarly discourse (Ulfa et al., 2022), (Setyowati, 2023). Students must grasp core concepts of scholarly writing, such as crafting concise titles and drafting compelling abstracts that present core ideas and findings (Cotton et al., 2024).

Grammarly and academic essay writing are increasingly intertwined, revolutionizing education by enhancing and reshaping each other. Grammarly is one of the most popular AI technologies, with its advanced equipment and adaptive learning, enriches academic writing through dynamic learning environments and personalized educational experiences. It simplifies language acquisition and offers tailored solutions, making academic writing more efficient and intuitive.

Academic essay writing requires meticulousness, clarity, structured argumentation, and ethical scholarship principles that Grammarly supports and refines. By integrating Grammarly, students can effectively craft concise titles, compelling abstracts, comprehensive literature reviews, and precise citations and references. This combination of Grammarly's capabilities and academic writing demands fosters well-substantiated, coherent arguments and transcends linguistic and cultural barriers, contributing to the evolution of scholarly communication.

Students globally are using Grammarly for various aspects of essay writing, such as language correction, grammar checking, proofreading, content generation, and citation management (Rejeki, 2023), (Abu Guba et al., 2024)

Grammarly also aids in identifying potential plagiarism and conducting efficient literature reviews (Armanda et al., 2022) (Rejeki, 2023). Due to that issue, this study primarily focuses on the tool's technical features, but little is known about how students in higher education personally experience its benefits and limitations. Additionally, comprehensive research on the challenges students face while integrating Grammarly into their academic writing practices is lacking. Additionally, comprehensive research on the difficulties students face while integrating Grammarly into their academic writing practices is lacking.

Students Perceived Knowledge of Grammarly in Higher Education

The quantity of convincing knowledge a particular orientation perceives to possess about the target topic is known as perceived knowledge. It is actual knowledge, a direct and unmistakable awareness of something, such as the circumstances and facts around something (Rejeki, 2023). Other explains that perceived knowledge refers to a person's subjective assessment of their understanding of a particular topic or concept, reflecting their judgment regardless of their actual level of objective knowledge (Ilham, 2022). Perception and perceived knowledge are often interrelated, as individual perceptions can influence how they assess their knowledge or understanding of a topic. However, perceived knowledge is subjective, while objective knowledge is based on measurable facts and truths. It is noted that perceived knowledge emphasizes individual information and knowledge, whereas perception relies more on the senses. Therefore, the perceived level of knowledge influences understanding and judgments about the importance of old and new information.

The concept of perceived knowledge consists of accepting, understanding, and evaluating (Rejeki, 2023). Then, they are described as the following:

- a. **Accepting:** perceived knowledge influences how individuals receive writing evaluation applications. This involves their confidence and trust in the application's ability to improve their writing skills, influenced by the app's reputation, recommendations, or previous experiences. Acceptance includes a willingness to accept corrections or suggestions, admit deficiencies, and be open to improvement, influenced by attitudes toward feedback, confidence, and readiness to learn.
- b. **Understanding:** perceived knowledge relates to an individual's grasp of how the writing evaluation application functions, including its features, the types of errors it can detect, and the feedback it provides. Those with high perceived knowledge in this stage better understand how to utilize the application to enhance their writing quality. This includes comprehending the rationale behind corrections or suggestions, understanding the underlying grammar or writing rules, and being aware of aspects that need improvement. An individual's grammar and writing comprehension can influence this understanding.
- c. **Evaluating Stage:** perceived knowledge concerns an individual's ability to assess the effectiveness of the writing evaluation application. This involves determining whether the feedback is relevant, helpful, and applicable to improving their writing. Individuals with high perceived knowledge can critically evaluate the feedback's quality, considering how well it aligns with their writing goals, strengths, and weaknesses, and assessing the impact of suggested changes on the overall quality of their writing.

Students' perceived knowledge perceptions of their learning environment, their abilities, and the teaching strategies employed significantly influence their approach to learning and subsequent learning outcomes. Students who view the learning environment positively—including curriculum content, teaching methods, assessment methods, learning resources, learning context, and student support services—and who feel confident in their abilities, are more inclined to adopt a deep learning approach. This involves seeking a comprehensive understanding and making connections between concepts.

In the context of technological innovations such as AI or in this context Grammarly, students perceive knowledge, concerns, and experiences can significantly impact their willingness to utilize Grammarly and the extent to which they are integrated into the learning process. Much existing research on tertiary students' perceptions focuses on Grammarly insights into students' views and experiences with Grammarly (Armanda et al., 2022), (Samosir & Daulay, 2023), (Abu Guba et al., 2024) remain relatively underexplored. Research into student perceptions of Grammarly typically examines attitudes, experiences, and factors influencing these perceptions, such as gender, discipline, age, and year of study. Studies have shown that Grammarly is perceived as useful for enhancing language acquisition by idea generation, and communication in the target language (Rejeki, 2023) Additionally, Grammarly for learning support has been shown to improve students' learning achievements, self-efficacy, attitudes, and motivation (Samosir & Daulay, 2023). Positive feedback has also been reported in EFL learning, where Grammarly was appreciated for its responsiveness, interactivity, and confidential learning support. Many students acknowledge the profound impact of Grammarly on their disciplines and future careers and intend to utilize Grammarly in their learning and future practice, viewing Grammarly integration as essential in university curricula (Rejeki, 2023), (Samosir & Daulay, 2023), (Abu Guba et al., 2024)

Students with a good understanding of Grammarly tend to have lower anxiety about it (Rejeki, 2023). However, conflicting beliefs exist, as some students with high Grammarly knowledge express concerns about its impact on jobs (Selim, 2024) (Mohammadi et al., 2023). Studies have also noted concerns about limited human interaction, potential data leakage, lack of emotional connection, ethical breaches, and the impact on job opportunities (Arifianto & Izzudin, 2021), (Shaik et al., 2022), (Alfarizi, 2023), (Jiang et al., 2023), (Spanos, 2023), (Malik et al., 2023), (Chan, 2023), (Persulesy et al., 2024), (Wijaya, 2024).

Research on the relationship between the frequency of Grammarly and student perceptions is inconclusive. For instance, Chan's study found no correlation between Grammarly usage frequency and factors such as course satisfaction, and learner autonomy (Chan, 2023). In contrast, Rejeki and Wijaya found that increased time spent using Grammarly in a second-language writing class positively influenced students' confidence and perception of task value (Rejeki, 2023), (Mohammadi et al., 2023), (Selim, 2024).

Integrating Grammarly into the writing classroom

Grammarly offers comprehensive grammar-checking and writing improvement features. Grammarly, provides immediate feedback on grammar, punctuation, style, and clarity, allowing lecturers to focus on grammar, punctuation, style, and clarity, so lecturers can focus their efforts on higher-order writing skills such as critical thinking and argumentation. Thus, Grammarly provides timely feedback through comments and suggestions directly within the document. By integrating Grammarly into the writing classroom, lecturers can create a dynamic learning program that encourages continuous improvement in students' writing skills.

Challenges Presented by Grammarly in Higher Education

Integration of Grammarly in higher education presents multifaceted challenges that necessitate careful consideration. A primary concern is the potential dependency on Grammarly, which can hinder students from developing essential writing skills, leading to a superficial understanding of grammar and syntax. This dependency might result in students' inability to write proficiently without digital assistance. Furthermore, Grammarly raises issues of academic integrity, as students might submit corrected assignments without comprehending the underlying changes, potentially constituting academic dishonesty. Additionally, Grammarly's feedback may not always align with specific academic writing conventions or disciplinary requirements, causing confusion and undermining educational objectives. Equity is another significant issue, as access to Grammarly's premium features requires a subscription, potentially widening the gap between students of different socio-economic backgrounds. Lastly, the use of Grammarly involves uploading text to its servers, raising privacy and data security concerns, particularly regarding the handling of sensitive information. Thus, while Grammarly can enhance writing quality, its use in higher education must be managed to mitigate these challenges and ensure it serves as a beneficial supplement rather than a crutch or source of inequity.

METHOD

In this study, a survey design was employed to gather data from university students in Indonesia, investigating their use and perceived knowledge of Grammarly in academic writing. Data were collected through an online questionnaire that included both closed-ended and open-ended questions, and online semi-structured interview to ensure a comprehensive range of responses. The initial questionnaire was developed based on similar studies and existing questionnaires regarding teachers' and students' perceptions of educational technologies in higher education. To ensure the relevance and clarity of the questionnaire items, pilot studies were conducted before the formal data collection, and the questionnaire was revised based on feedback from these pilot studies. The final instrument comprised 26 items using a 5-point Likert scale ranging from "Strongly agree" to "Strongly disagree," along with 3 open-ended questions to gather additional insights from respondents. The survey covered topics such as knowledge of Grammarly, the integration of Grammarly in higher education, potential challenges related to Grammarly, and the impact of Grammarly in the academic writing course. Data were collected through an online survey targeting English department students who enrolled in Academic Writing courses from universities in East Java. A convenience sampling method was used to select respondents based on their availability and willingness to participate. Participants were recruited through an online platform and provided informed consent before completing the survey. Participation was voluntary, and responses were anonymous. A total of 120 undergraduate English department students from private and government universities in Indonesia completed the survey. The study employed Miles and Huberman's (2014) interactive model for data analysis, encompassing data reduction, display, and conclusion drawing. During the data reduction phase, information from field notes, interview transcripts, documents, and other empirical sources was selected, concentrated, simplified, abstracted, and transformed. This process involved organizing, focusing, sorting, and refining the data to make inferences and verify them, ultimately leading to the repurposing and discarding of irrelevant data. Data display involves organizing and compressing information to facilitate conclusions and actions. In this step, the students' perceived knowledge of Grammarly in academic writing is presented clearly and specifically. The questionnaires' results are displayed in a table and then explained in detail. The final step in this study's data analysis is drawing and verifying conclusions. Following the data presentation stage, the researcher synthesizes the questionnaire to address the research questions effectively.

RESULTS AND DISCUSSION

RESULTS

Students' Perceived Knowledge

1. Questionnaire Results

The questionnaire describes how students argued Grammarly application is crucial for academic writing. They provide compelling reasons and benefits for using Grammarly in their writing classes. Despite this, many students find some of Grammarly's feedback to be inaccurate. Nevertheless, overall, students reported positive outcomes from using the application in their academic writing. The following table displays student responses based on three indicators of perceived knowledge.

a. Accepting

Table 1. Accepting the use of Grammarly

No	Statement	SA	A	N	D	SD
1	I use Grammarly to supplement the lecturer's feedback.	(62) 52%	(39) 32%	(18) 15%	(1) 1%	(0) 0%
2	I use Grammarly based on the writing lecturer's recommendation.	(50) 42%	(42) 35%	(24) 20%	(4) 3%	(0) 0%
3	Grammarly's feedback boosts my confidence in submitting assignments.	(74) 62%	(36) 30%	(10) 8%	(0) 0%	(0) 0%
4	I feel motivated when the lecturer acknowledges my academic writing performance with Grammarly.	(54) 45%	(36) 30%	(24) 20%	(6) 5%	(0) 0%
5	Grammarly helps reduce errors in my academic writing.	(72) 60%	(36) 30%	(12) 10%	(0) 0%	(0) 0%

Table 1 shows various reasons students use Grammarly in writing class. Primarily, it complements lecturer feedback, with 62 students (52%) while 39 students said strongly agreeing 32%. Eighteen students (15%) remain neutral. Regarding recommendations from writing lecturers, 42% strongly agree, 35% agree, 20% are neutral, and 3% disagree, citing other sources such as friends or the internet. The lecturer's influence is significant in students' use of Grammarly. Additionally, 74 students (62%) strongly agree and 36 (30%) agree that Grammarly feedback boosts their writing confidence, with 10 (8%) remaining neutral. Regarding motivation from lecturer appreciation, 54 students (45%) strongly agree, and 36

(30%) agree, while 24 (20%) are neutral, and 5% disagree. Lastly, 72 students (60%) strongly agree, and 36 (30%) agree that Grammarly minimizes writing errors, with 12 (10%) being neutral.

b. Understanding

Table 2. Understanding the use of Grammarly

No	Statement	SA	A	N	D	SD
1	I needed to receive grammar feedback on my assignment.	(72) 60%	(36) 30%	(10) 8%	(2) 2%	(0) 0%
2	The feedback highlighted my primary errors	(57) 48%	(48) 40%	(8) 7%	(6) 5%	(0) 0%
3	Occasionally, I disregard some suggestions from Grammarly.	(74) 62%	(36) 30%	(10) 8%	(0) 0%	(0) 0%
4	The errors were easy to understand due to the clear explanations provided	(36) 30%	(36) 30%	(12) 10%	(36) 30%	(12) 10%
5	Grammarly's feedback improved my language skills over time by helping me understand grammatical rules better.	(62) 52%	(36) 30%	(6) 5%	(6) 5%	(0) 0%

Based on Table 2, students demonstrate a thorough understanding of the use of Grammarly. Firstly, the majority of students acknowledge the significance of Grammarly feedback on their assignments, with 60% strongly agreeing and 30% agreeing. Despite 8% remaining neutral, this indicates that students find Grammarly's suggestions beneficial for their writing assignments. Regarding feedback focus, 48% strongly agreed, 40% agreed that Grammarly should emphasize main errors, 7% were neutral, and a smaller percentage disagreed 5%. This suggests a preference for prioritizing primary mistakes. A majority of students sometimes focus more on certain suggestions, with 62% strongly agreeing and 30% agreeing to use only select suggestions, 8% were neutral though some prefer to use all suggestions provided. The explanations provided made the errors easy to understand for many respondents. Due to the understanding of the error in the survey presented 30% strongly agreed, and another 30% agreed, indicating satisfaction with the clarity. However, 10% remained neutral, 30% disagreed, and 10% strongly disagreed, highlighting a range of opinions on the effectiveness of the

explanations. This distribution reflects both positive and negative perspectives on the clarity of the error descriptions. Lastly, most students believe Grammarly feedback enhances long-term language development, with 52% strongly agreeing and 30% agreeing, indicating improved writing skills, both neutral and disagree show 5%.

d. Evaluating

Table 3. Evaluating the use of Grammarly

No	Statement	SA	A	N	D	SD
1	I received numerous valuable suggestions for improving my grammar.	(74) 62%	(36) 30%	(10) 8%	(0) 0%	(0) 0%
2	I prefer feedback from lecturers over Grammarly.	(50) 42%	(42) 35%	(24) 20%	(4) 3%	(0) 0%
3	Grammarly motivates me to conduct independent proofreading	(74) 62%	(36) 30%	(10) 8%	(0) 0%	(0) 0%
4	I have found some of Grammarly's feedback to be less accurate	(54) 45%	(36) 30%	(24) 20%	(6) 5%	(0) 0%
5	Grammarly provides a performance score that assesses the accuracy of my writing based on the total word count and the types and number of writing issues detected	(72) 60%	(36) 30%	(12) 10%	(0) 0%	(0) 0%

Based on Table 3, the evaluation by students on the use of Grammarly is generally positive. In the first statement, a majority of students appreciated the valuable grammar improvement suggestions provided by Grammarly, with 74 students (62%) strongly agreeing and 36 (30%) agreeing. Despite 10 students (8%) remaining neutral, the overall sentiment indicates an enhancement in their grammar skills due to Grammarly's suggestions.

The second statement revealed varied opinions regarding the feedback from lecturers compared to Grammarly. While 50 students (42%) strongly agreed and 42 students (35%) agreed that lecturer feedback was superior, 24 students (20%) were neutral, and a notable 4 students disagreed (3%), favoring Grammarly's feedback.

In the third statement, a significant portion of students believed that Grammarly encouraged independent proofreading, with 74 students (62%) strongly agreeing

and 36 (30%) agreeing. Although 10 students (8%) were neutral and 1 (0%) disagreed, the consensus was positive. The fourth statement showed mixed reactions to the accuracy of Grammarly's suggestions. While 54 students (45%) strongly agreed and 36 (30%) agreed that some suggestions were inaccurate, 24 students (20%) were neutral, and 6 (5%) disagreed and found Grammarly's feedback accurate. Lastly, most students responded favorably to Grammarly's scoring system, with 72 students (60%) strongly agreeing, 36 (30%) agreeing, and 12 (10%) remaining neutral, indicating increased awareness of writing quality.

2. Interview Results

According to student responses, in interview sections, five key features were predominantly utilized: correctness, clarity, engagement, delivery, and plagiarism detection. Students not only identified several inaccuracies within the Grammarly application but also developed strategies to address these issues. Consequently, the application had a notable impact on their academic writing. The findings are based on interviews with 50 students enrolled in the Writing course who utilized Grammarly Premium. These insights highlight the application's strengths and areas for improvement, reflecting its overall influence on students' writing practices.

Main Features

a. Correctness

The correctness feature of Grammarly offers comprehensive feedback on grammar, spelling, and punctuation, making it the most frequently used feature among students. This is because it is available in both free and premium versions, providing fundamental correction capabilities. Interviews revealed that students primarily use this feature for grammar corrections, enhancing their confidence in submitting assignments. While some focus on spelling corrections, they often find punctuation suggestions less reliable and sometimes ignore them.

b. Clarity

The clarity feature provides feedback to enhance the readability of text. It focuses on three main issues: wordy sentences, conciseness, and passive voice. This feature ensures that sentences are clear to readers by simplifying long, convoluted sentences, reducing unnecessary wordiness, and correcting inaccurate passive voice usage. According to student responses, 30 out of 50 students actively use all aspects of the clarity feature. 17 students, however, only use the clarity feature when the suggestions align with their intended meaning. Students' feedback highlights the importance of metalinguistic awareness to effectively

utilize the clarity feature and ensure their writing conveys the intended message.

c. Engagement

The engagement feature offers suggestions to make writing more enjoyable by using lively words and varying the rhythm. This keeps readers interested from start to finish. The researcher focused on vocabulary and writing variety, examining how the feature's word choices enhance precision and diversity in writing.

Forty out of 50 students agreed that the engagement feature made their writing more varied and enjoyable by offering diverse word choices and clarifying their writing. However, fifteen students emphasized the need to verify the suggested vocabulary to ensure it fits the context. Students' feedback underscores the importance of contextual appropriateness in using Grammarly's suggestions. Discussing with peers can also help ensure correct and effective academic writing, with Grammarly serving as an automatic evaluation tool.

d. Delivery

The delivery feature helps match the writing tone to the author's intent, which is crucial as writers can't rely on voice or facial expressions to convey sincerity, confidence, or politeness. This feature allows authors to create the desired impression in their writing. The study explored whether the delivery feature adjusted the tone as students intended. Seventeen out of fifty students agreed that Grammarly could adjust their writing tone. Students generally felt that the delivery feature helped them achieve a more formal and academic tone. However, eight students noted that the feature sometimes failed to fit the context. To optimize Grammarly's use, students should review corrections individually to understand and refine their writing style.

e. Plagiarism

The Grammarly plagiarism checker scans billions of web pages and academic databases to identify duplicate content. The premium version highlights text that needs citation and provides resources for proper attribution. This study investigates whether students utilize this tool to minimize plagiarism. Interview results show that 42 out of 50 students do not use Grammarly's plagiarism checker, preferring Turnitin for its accuracy. Four students use Grammarly occasionally, mainly for less critical writing tasks. Students also question Grammarly's ability to check scientific papers from journals, believing it primarily detects plagiarism from websites. As noted, some students remain unsure about its effectiveness for academic publications.

Inaccuracies Features

a. Context

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Thirty students expressed dissatisfaction with Grammarly's feedback, citing issues with relevance and context. They found that the suggestions occasionally missed the intended meaning and did not align well with their writing needs. One student noted, "Sometimes, Grammarly's suggestions focus on clarity and variety but fail to address the writing context." Another commented, "The meaning changed from my intended context, so I ignored the suggestion." Overall, these students felt Grammarly's feedback often lacked contextual accuracy, leading to misunderstandings and ineffective corrections. They noted that Grammarly's suggestions sometimes failed to consider the broader context, potentially altering the intended message

b. Spelling

In the correctness feature, Grammarly assists students with spelling corrections, yet ten students identified limitations in its ability to handle non-English words, including abbreviations and proper names. This limitation arises because Grammarly is tailored specifically for English language writing and is not equipped to recognize or correct words from other languages. Consequently, even when non-English words are formatted in italics, Grammarly continues to highlight them with red underlines, suggesting alternative words based on similar letter patterns. This suggests a gap in Grammarly's capability to appropriately manage and process terms that fall outside its primary linguistic focus.

c. Punctuation

The correctness feature in Grammarly includes punctuation correction, which assists students in improving their use of punctuation. However, ten students reported difficulties with some of the punctuation suggestions provided by this feature, particularly concerning the placement of quotation marks and commas in lengthy sentences. In certain instances, Grammarly's recommendations for comma placement have resulted in less precise sentences. For example, some students have found that suggestions to insert commas can lead to excessive or incorrect punctuation, affecting sentence clarity. One student remarked, "I frequently encounter punctuation suggestions that seem inaccurate. For instance, misplaced commas can make sentences disjointed, resulting in multiple commas within a single sentence"

d. Passive Voice

Eleven students identified inaccuracies in the clarity feature, particularly concerning its handling of passive voice. Grammarly advises against using passive voice, as it is often perceived as less effective and more challenging to comprehend than active voice.

Consequently, the clarity feature suggests converting passive constructions to active sentences. However, students noted that passive voice can be appropriate for certain contexts, such as emphasizing different aspects of a sentence in research writing. As a result, they occasionally disregard Grammarly's recommendations to eliminate passive voice. One student explained, "In research writing, I sometimes employ passive constructions to shift the focus of the sentence".

e. Plagiarism

Seven students reported limitations in Grammarly's plagiarism detection feature, noting that it primarily scans online writing databases rather than academic sources such as journal articles. This limitation affects the tool's effectiveness in identifying specific types of academic plagiarism. One student expressed uncertainty regarding the capability of plagiarism checkers to assess scientific publications, stating, "I remain doubtful about whether plagiarism detection tools can scrutinize scientific journal articles". Another student mentioned, "At times, I need to manually verify which parts might indicate plagiarism, as the tool mainly addresses general written content".

The Challenges

The findings highlighted various concerns related to the challenges of integrating Grammarly into writing class. Some participants expressed optimism about Grammarly's future integration. This optimism stemmed from their willingness and belief that Grammarly is inevitable in technological evolution and trends. Over-reliance on Technology: students may become overly dependent on Grammarly, leading to a decline in their self-editing and critical thinking skills. They might rely on the tool to correct errors without fully understanding the underlying grammar rules.

Another reason for optimism was the belief that humans would retain control and oversight over Grammarly. One participant remarked, "I am not that concerned, as it would lead humans to smartly utilize such Grammarly tools to complete their tasks efficiently rather than simply being replaced by such tools." However, more than half of the participants still had concerns about the challenges of integrating AI technologies, particularly regarding the reliability of the technology and its impact. Grammarly swiftly delivers fluent, human-like responses, though their accuracy is not always assured. One student observed that predicting or verifying Grammarly information's validity is challenging, and potentially misleading to some. Transparency is also critical, as Grammarly systems are complex and opaque. A student remarked, "Using things you cannot understand is always dangerous."

Another issue that appeared to be a challenging concern was contextual limitation. It turned out that Grammarly often struggles with contextual nuances and specific academic jargon. It may not always provide accurate suggestions for specialized terminology or discipline-specific writing styles, leading to inappropriate corrections.

One participant explained that at some times Grammarly gave inaccuracy in feedback: As noted by some students, Grammarly's suggestions can be out of context or irrelevant, especially for complex sentence structures or passive voice usage. This can confuse students and undermine their confidence in their writing abilities. In the study lack of comprehensive feedback is one of matters in challenges issue. While Grammarly excels at identifying grammatical errors and stylistic issues, it does not offer comprehensive feedback on content organization, argument strength, or coherence. This limits its effectiveness as a holistic writing tool.

One participant noted that Grammarly's automated feedback cannot replace personalized feedback from lectures, which is crucial for student development. The tool might miss opportunities to teach nuanced writing skills and critical thinking.

In reality, Grammarly Premium cannot be accessed by every student. Free Grammarly has limited features that differ from the premium one, which offers more advanced features. This can create disparities in the quality of feedback received and potentially disadvantage students who cannot afford the subscription.

DISCUSSION

The study on university students' perceived knowledge of the use of Grammarly in writing courses, in higher education reveals a multifaceted and nuanced landscape marked by both enthusiasm and concerns. The findings offer a comprehensive understanding of students' perspectives, indicating a general familiarity with the Grammarly application, influenced by their knowledge and frequency of use.

The study highlights the perceived benefits and challenges of integrating Grammarly into educational settings, with students' experiences significantly shaping their perceived knowledge. Participants demonstrated a sound grasp of the capabilities and limitations of Grammarly, showing a generally positive attitude toward its application in their learning, research, and future careers. However, concerns about reliability, privacy, ethical implications, and ambiguous policies were prevalent, alongside worries about the impact on personal development, career prospects, and societal values.

The study found a positive correlation between students' perceived knowledge of Grammarly and the frequency of

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use, suggesting that increased exposure and hands-on experience enhance understanding and acceptance. Despite the novelty of Grammarly for public use, students appear well-informed about its benefits and risks. It indicates a general willingness among students to utilize Grammarly in their academic writing and professional pursuits, coupled with high expectations for its performance.

For instance, students perceive Grammarly as beneficial for providing personalized learning support, expecting around-the-clock access to tailored resources. In writing and brainstorming, they seek feedback to enhance writing skills beyond mere grammar checking.

These findings underscore the potential of Grammarly to revolutionize traditional teaching and learning methods by offering personalized assistance, meeting diverse learning needs, promoting efficiency, and fostering self-directed learning. Nevertheless, challenges persist, with students expressing reservations about over-reliance on technology, the impact on the value of university education, and issues related to accuracy, transparency, privacy, and ethics. Concerns about plagiarism and the difficulty in assessing the originality of Grammarly's work necessitate human oversight.

Interestingly, the study found no significant correlation between students' concerns and their perceived knowledge of Grammarly technologies, indicating that even those well-versed in the technology may harbor reservations. Additionally, students expressed apprehension about Grammarly potentially hindering critical thinking and creativity, as well as its impact on job prospects and human values.

User acceptance is crucial for the successful adoption of new technologies, and students are the main users of educational technologies. By understanding students' perceived knowledge of Grammarly, educators, and policymakers can better integrate these tools into higher education to improve teaching and learning outcomes.

Students' willingness to use Grammarly and their concerns about them are complex. While students are hopeful about incorporating these technologies into their academic and professional lives, seeing Grammarly as part of technological progress, they also have reservations.

CONCLUSION

Based on the findings, it can be concluded that the Grammarly application is crucial, particularly for academic writing. Students have various reasons for using Grammarly and gain substantial benefits from its features. Five main features are most frequently used: correctness, clarity, engagement, delivery, and plagiarism detection. The most commonly used feature is correctness, especially

for grammar and spelling errors, as these are the issues students encounter most often. However, the plagiarism detection feature is rarely used because students believe Grammarly cannot thoroughly detect plagiarism from websites and journal articles.

Students have noticed some inaccuracies in Grammarly's suggestions, such as punctuation, spelling, passive voice, plagiarism, and context. To address these inaccuracies, students should carefully review each suggestion, read the description to determine its relevance, consult dictionaries, Google, or other resources, and seek advice from lecturers and peers.

Using Grammarly significantly impacts students' academic writing, particularly in writing mechanics, vocabulary enhancement, self-awareness, and self-confidence. Most students believe Grammarly can improve their academic writing skills, but they should not rely solely on it. A good understanding of writing rules and techniques is still necessary. Grammarly can complement feedback from lecturers and personal reviews, helping students enhance the quality of their academic writing. It is essential to consider students' attitudes towards Grammarly, ensuring it not only corrects their writing but also encourages continuous improvement and learning from mistakes. The correctness feature provides extensive feedback on grammar, spelling, and punctuation. All students concurred that this feature was the most frequently used among the available options. This widespread usage is attributed to its accessibility in both the free and premium versions of Grammarly, making it the fundamental type of correction offered by the application. Addressing these challenges requires a balanced approach, combining the use of Grammarly with traditional teaching methods and ensuring students develop independent writing skills.

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