Research Article

Exploring the Perceived Usefulness and Effect of AI Writing Tools in Enhancing the Quality of Written Outputs of Senior High School Students

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ABSTRACT

While AI writing tools promise efficiency and productivity, educators are concerned about their potential threat to academic integrity. This study focuses on identifying the AI writing tools used by students, assessing each tool's perceived usefulness based on its functionality, and exploring students' views on the impact of AI writing tools in enhancing their written output. A quantitative method, using a survey questionnaire, was employed to determine the AI writing tools students use and their perceived usefulness. A qualitative method, via focus group discussions, was also utilized to explore students' views on using AI writing tools to enhance their academic work. The results show that students are exposed to various AI writing tools, with Google Translate being popular for language translation, Quillbot for summarizing and paraphrasing, and ChatGPT for content generation and other writing-related tasks. Students perceived AI writing tools as very useful for enhancing their academic papers, as they increase their confidence in writing and improve productivity and efficiency. However, due to potential inaccuracies in generated content, students expressed skepticism on fully relying on AI writing tools. They indicated that they have become more vigilant when using these tools to avoid plagiarism and prevent incorporating false information and sources. The study suggests that educational institutions could develop guidelines or implement policies on the ethical use of AI writing tools to promote academic integrity. Schools may also encourage responsible use of these tools to cultivate a culture of honesty.

Keywords: Artificial Intelligence, Research, Academic writing, Senior High School

Introduction

In an era where technology continues to reshape our educational landscape, the rise of generative artificial intelligence (AI) tools has been nothing short of transformative(Kadaruddin, 2023; Spivakovsky et al., 2023). From the

seamless generation of text, images, and data at the behest of a well-crafted prompt to their integration as essential aids in various industries, the versatility of AI-powered tools has captured widespread attention (Kim, 2023).

AI tools in the field of education, notably AI writing assistants, hold promise in streamlining the process of academic work (Lund et al., 2023; Yan, 2023). Nakazawa and DuBose (2022) highlight the potential for these tools to offer efficiency, reliability, and convenience in the development of academic materials. These academic materials include research papers that with the help of AI-powered tools can be done with ease. Artificial Intelligence enhances learning experiences like text to speech which revolutionized education. Voice-based AI technology allows students to access audio content on mobile devices, reducing reliance on textbooks and long study sessions. This enables learning during daily activities, enhancing efficiency and enjoyment, particularly for those who find traditional methods cumbersome or face physical challenges. (Choi, 2023).

The recent emergence of generative AI models, such as Chat-GPT, has triggered a surge in adoption by people in different fields of work, especially in education. Shi (2021) stresses the impact of technology-based tools on enhancing the quality of student papers, spanning improvements in grammar, readability, originality, and proper citation practices. Zhang and Tur (2024) explained that the AI tool's provision of personalized learning opportunities enhanced learner motivation and involvement, and the reduction of language hurdles. AI educational tools can serve as knowledgeable tutors, offering valuable feedback on written work and aiding in grammar and mechanics checks (Alharbi, 2023). Javaid, et al., (2023) asserted that Chat GPT can help learners improve their reading and writing skill as it could help them comprehend complex text and provide timely suggestions on writing topics, flow of ideas, sentence structures, and vocabulary.

ChatGPT also supports the content generation process by offering suggestions for topics and perspectives that students may not have otherwise considered, thereby broadening the scope of their work (Kasneci et al., 2023;

Taecharungroj, 2023). Its language translation functionality is particularly advantageous for multilingual students, as it facilitates the production of accurate and grammatically correct text in non-native languages (Lametti, 2022; Lund & Wang, 2023; Stock, 2023).

The integration of Artificial Intelligence (AI) in education presents both opportunities and significant challenges. Research shows that while AI tools offer various benefits, such as adaptive systems and intelligent tutoring, their adoption in higher education is fraught with concerns (Devi et al., 2022).

Educators are not blind to the potential ethical dilemmas surrounding the incorporation of AI in academic writing. Fiialka et al. (2023) claim that the possible act of plagiarism and the inclusion of misinformation in written academic outputs are some of the usual problems when using AI. Burkhard (2022) identifies divergent student attitudes towards AI-powered writing tools, with some embracing them without skepticism, risking unintentional plagiarism, while others eschew these tools due to skepticism or a lack of effective strategies for their use. Watters and Lemanski (2023) highlight skepticism surrounding ChatGPT, primarily due to concerns over the accuracy and reliability of content generated by large language models (LLMs). Key issues include the risk of misinformation when LLM-generated content is published without verification, the need for strict quality assurance in academic work, and the proliferation of fake resources falsely claiming reputable authorship. According to Rashidi et al. (2023) even AI text detection tool has become unreliable as it considered some real abstracts as AI generated text.

Generative AI like chat GPT poses a threat to academic credibility (Eke, 2023). ChatGPT establishes a substantial risk of academic dishonesty as it offers a quick route to obtaining accurate responses to exam inquiries, crafting entire term papers, or composing functional code with minimal effort (Lock, 2022; Fiialka et al., 2023). This ready access to precise solutions has the potential to significantly diminish the educational experience that students are meant to undergo. Furthermore, as ChatGPT effortlessly resolves uncomplicated tasks without requiring additional effort, students may

skip fundamental concepts, potentially leading to struggles with advanced assignments due to a lack of foundational knowledge (Scarth, 2022). It is worth noting that ChatGPT occasionally delivers incorrect or misleading responses, creating a risk of propagating misinformation if students accept these answers as factual(Greitemeyer & Kastenmüller, 2023). Finally, these challenges could be exacerbated in scenarios such as pandemic lockdowns, where almost all interactions occur through computers, making the use of AI tools for cheating exceedingly convenient (Malinka et. all., 2023).

While existing research highlights the potential benefits of AI tools in education, such as streamlining academic work and enhancing the quality of student papers, it simultaneously exposes critical gaps. A noticeable research gap pertains to ethical considerations within AI integration in academic writing (Stokel-Walker, 2022). Although studies acknowledge the need for responsible decision-making, it does not extensively delve into the ethical dilemmas and potential pitfalls, emphasizing the necessity for in-depth exploration in this domain. Educational institutions must make informed decisions before including AI tools in their curriculum like knowing the tools used by the learners and how they are using it.

This study investigates the role of AI writing tools among Senior High School students, specifically it sought to answer the following questions, RQ1: What are the AI writing tools used by the students?, RQ2: What is the perceived usefulness of AI writing tools?, and RQ3: How can the learners describe the effect of AI writing tools on them and in enhancing the quality of their written outputs? The insights gained from students' perceptions are envisioned to provide valuable guidance for educators, enabling them to foster the responsible and effective use of AI tools—an identified gap in the ever-evolving landscape of educational technology. By addressing this gap, the research seeks to enrich the existing body of knowledge, contributing to the enhancement of research practices in the 21st century, where AI tools have become integral to the educational environment.

Method and Materials
Research Design
This study utilized both quantitative and qualitative data to address the gap in the study. For the first research question, a quantitative survey was administered to a representative sample of SHS students. The survey included questions asking the AI writing tool used by the learners to enhance the quality of their written outputs. This phase aims to provide a quantitative overview of the prevalence and distribution of AI writing tools used by SHS students.

For the second question, the AI writing tools identified were used to determine their usefulness based on the perception of the learners. The function of each AI writing tool was highlighted in the survey such as translation, spelling, text analysis, summarizing, and plagiarism checking. The respondents were asked on a 5-point scale (ranging from Useless, somewhat useful, Useful, Very Useful, and Extremely Useful), how useful they find AI writing tools.

Finally, for the third question, the qualitative phase was extended to explore how SHS students describe the effects of AI writing tools on the quality of their written outputs.

Research Respondents/Participants
The respondents in this study were 252 academic track senior high school students. These students, primarily in the 12th grade, are actively engaged in research subjects or any subject requiring written work as part of their curriculum. This study utilized a stratified random sampling method considering the diverse academic tracks (e.g., ABM, HUMSS, STEM) as strata to ensure representation from each group. Within each stratum, the participants were randomly selected using a random number generator to ensure unbiased representation.

Table 1. Distribution of Respondents

Strand	Population	Percentage	Sample
ABM	249	37	93
HUMSS	348	51	129
STEM	84	12	30
Total	**681**	**100**	**252**

For the qualitative component, the study involved 10 senior high school students from the same school distributed across the academic strands such as ABM, HUMSS, and STEM. They were the participants in the focus group discussion.

Instrumentation

To identify the five most prominent AI writing tools used by the learners, the researcher designed a checklist anchored to the most popular AI writing tools across the web. The checklist presents the functionality of each AI writing tool, which is adapted from the study by Burkhard (2022), including text translation and analysis, spelling, summarizing, paraphrasing, and plagiarism checking. This checklist was reviewed by five (5) master teachers who are recognized experts in English subject instruction and educational technology. Their comments and suggestions were incorporated to refine the instrument. The research instrument was pilot tested with a group of learners from the same school but enrolled in different strands, allowing the researcher to identify ambiguities, assess internal consistency, and make necessary revisions before its full administration.

To determine the perceived function of each AI tool identified, the researcher designed a survey questionnaire based on its functionality adapting the Likert scale from the study of Burkhard (2022) such as follows 1 - Useless, 2 - Somewhat useful, 3 - Useful, 4 – Very useful, 5 - Extremely Useful)

Table 2. Scoring Range of Likert Scale of the Survey

Value	Range	Verbal Interpretation
5	4.21-5.00	Extremely Useful
4	4.20-3.41	Very Useful
3	3.40-2.61	Useful
2	1.81-2.60	Somewhat Useful
1	1.00-1.80	Useless

FGDs were conducted with the selected participants. The researcher designed FGD guide and divided the FGD into three sessions. In the first session, the participants were oriented and asked basic questions that established rapport. In the second session, the participants were asked probing questions about their perception regarding the effect of using AI writing tools in enhancing the quality of their written output. Finally, the third session was dedicated to the validation of preliminary themes extracted from the first two sessions.

Data Gathering Procedure

The researcher secured approval from the school head to carry out the study and worked closely with class advisers during the quantitative phase. A checklist was used to identify the AI writing tools commonly used by students and to rate their usefulness. Advisers helped select one student from each section for the FGD. The researcher individually discussed participation with these students, obtaining consent from both students and parents.

The study's purpose, FGD format, and participant roles were explained, with emphasis on interactive discussion. The FGD took place in a conference room, allowing participants to face each other. Participants were given a set of questions and a 5-minute pre-reading period to encourage thoughtful contributions.

Data Analysis

Quantitative data were analyzed using frequency and descriptive statistics. Frequency counted how often each AI writing tool was used by Senior High School students to enhance their written output. The mean was calculated to determine the perceived usefulness of each tool.

For the qualitative data, the researcher immersed in the transcribed audio recording data. First, initial codes were assigned to the sentences and eliminated words or expressions that are irrelevant to the understanding of the participants in their experience in using AI writing tools. Second, the codes were clustered to make meanings and form categories. After several clusterings to saturate the possible meanings of the participants' experiences, categories were labeled to make a theme. Finally, the researcher allowed the participants to validate the themes that emerged by allowing them to read and comment to ensure that their experiences were properly reported.

Ethical Considerations

The study adhered to ethical guidelines by securing a permit to the head of the institution or school where the study was conducted. The researcher ensured that participants' rights and well-being are safeguarded. For minor participants, parent consent was given to the parents or guardian to express whether they agree or not to the participation of their child or ward in the FGD. Informed consent forms detailing the study's purpose, procedures, and participants' rights were distributed to the participants.

The researcher coordinated with participants and set a mutually convenient time for the FGD. The participants were informed that the FGD would be audio-recorded. The researcher assured the participants that their identities would be kept confidential and that their comments or answers would be reported anonymously and will just be used for the purpose of research.

Results

The purpose of the current research is to find out which artificially intelligent writing instruments are used by senior high school students, assess how helpful they believe these tools are for them, and explore how they believe these tools impact their skills and the quality of their writing.
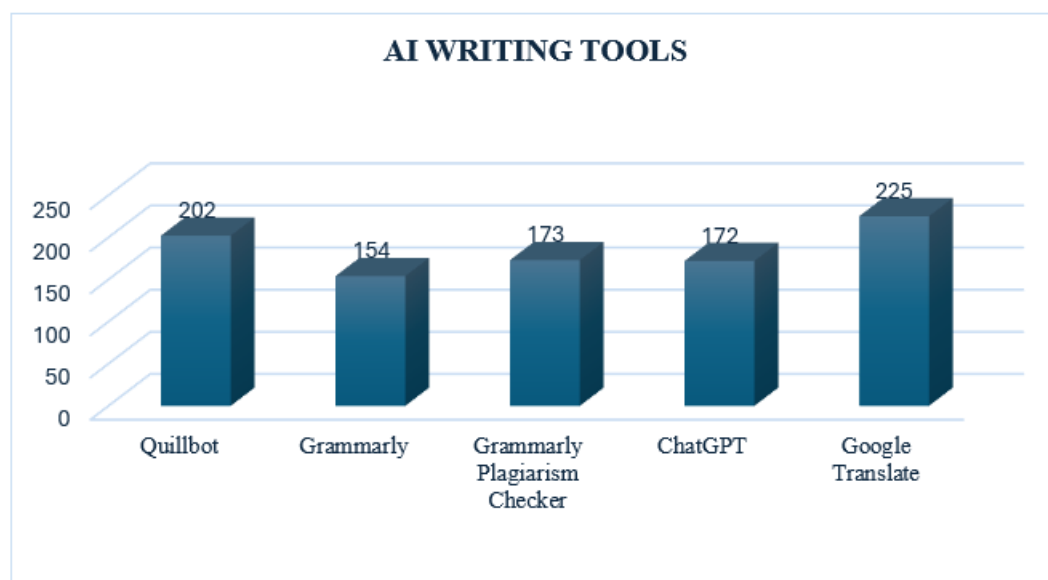

Figure 1: AI Writing Tools Used by the Learners

Figure 1 presents the AI writing tools used by 252 Senior High School students, categorized by functionality. For summarizing and paraphrasing, Quillbot is the most popular, with 202 students using it. Grammarly is preferred for grammar checking by 154 students and for plagiarism detection by 173 students. For content generation, 172 students rely on ChatGPT. Google Translate is widely used for translation, with 225 students utilizing it.

Perceived Usefulness of AI Writing Tools

Table 3. Summary of the Perceived Usefulness of AI Writing Tools based on their Functionality.

Functionality	Weighted Mean	Verbal Interpretation
Summarizing & Paraphrasing	4.18	Very Useful
Spelling, Grammar, and Text Analysis	4.20	Very Useful
Plagiarism Detection	4.20	Very Useful
Content Generation	4.11	Very Useful
Language Translation	4.06	Very Useful
Grand Mean	**4.15**	**Very Useful**

Table 3 presents the summary of the perceived usefulness of AI writing tools based on their functionality. The data indicates that senior high school students generally perceive the AI writing tool's functionality as very useful. Functions such as summarizing and paraphrasing, spelling, grammar, and text analysis, as well as plagiarism detection, are all rated around 4.18 to 4.20, falling into the "Very Useful" category which received the highest ratings. This implies that learners rely on AI on improving the technical structure of their written works which are mostly in the English language the usual second language of the learners where they are so conscious of making mistakes. Their consciousness of making mistakes in English likely contributes to their reliance on these AI tools for assistance.

Moreover, content generation is rated slightly lower at 4.11, while language translation receives a rating of 4.06. This may be caused by their skepticism to fully embrace some content generated by AI tools.

Effects of AI Writing Tools in Enhancing Written Works

The results of the focus group discussion yielded 3 major themes including (1) Reduces language anxiety (2) Improves productivity and efficiency, and (3) Learns Critical Engagement and Evaluation. The said themes described the effect of using AI on enhancing the written works of senior high school learners.

Theme 1: Reduces Language Anxiety
(Newfound confidence in writing)

This theme refers to the experiences of the participants in using AI tools to enhance their written outputs. The participants said that AI writing tools reduced their language anxiety in terms of grammar, sentence structure, tenses, and spelling, and improved their understanding of complex concepts of tasks related to their written output. The participants shared instances where the AI writing tools acted as reliable companions, easing their concerns about grammatical errors and structural inconsistencies. They expressed a newfound sense of confidence, knowing that the AI tools provided instant feedback and assistance, thus mitigating their apprehensions about linguistic precision. Additionally, participants noted that they adapted the writing style of AI tools, finding it beneficial in crafting their own output.

> ABM2: *"So, for now, let's talk about grammar. ChatGPT is very helpful in terms of grammar because I am a student who is always anxious. I don't trust my sentence construction, so I always validate it with ChatGPT if my grammar is correct."*

> STEM 1: *"with ChatGPT, what I use is 'discuss the text', and what I add is I make it direct to the point, no beating around the bush. In that way, it's easier for my brain to process. After it does that, it's like*

how ChatGPT does it in a way that I adopt it in making my output."

STEM 2: "I turn to ChatGPT to rectify my grammar, spelling, and tenses. With ChatGPT, I feel confident that my written work is correct."

HUMSS1: "I no longer need to rely on other people. I rely more on AI than on my classmates. That's more accurate. I feel it's more accurate. ChatGPT helps me understand some of my lessons, especially the ones that require a lot of reading and understanding. It helps by explaining the text in my level. I feel more confident when I do that. It works better for me."

Theme 2: Improves Productivity and Efficiency
(Dependable writing assistant)

In this theme, participants described how AI tools streamlined their work processes by efficiently checking grammar, tenses, and spelling. These tools also offered sample formats and generated sample content, serving as a basis for writing assigned texts. Additionally, participants expressed confidence in the output produced by AI tools, especially in their ability to summarize and paraphrase text effectively, as well as construct sentences with correct structure. Furthermore, participants highlighted that AI tools provided clarity to complex instructions related to their written tasks and aided in understanding intricate concepts, ultimately making their lives easier, more productive, and more efficient.

ABM2: So, it was very helpful at that time and then what I felt after using that ChatGPT was I became productive at that time, and I was able to accomplish a lot. So, of course, I also felt relieved because... summarizing or paraphrasing something became easier for me, which used to be difficult.

STEM 1: "After having ChatGPT generate such content, my understanding of the format and what specific elements to in-

clude in my letter is further enriched, making the process more efficient for when I do it myself and won't struggle anymore. I already know how ChatGPT will do it."

HUMSS1: "The effect on me is that it makes me work efficiently. Our strand demands a lot of writing, and sometimes when there's just too much, our minds get stuck, so we rely on AI. Its effect on us is that when we encounter a new term, we search for it, and we get new ideas for our next writing."

STEM 2: "Often, when I write in my notes, I also ask ChatGPT to revise or paraphrase it to make it more professional. I use the phrase 'make it more professional but easy to understand' (as prompt).

HUMSS 1: "... I asked ChatGPT how to write a sample letter and it was able to do it. ... I used it as a format. The next time I write a similar letter I base it on the format generated by ChatGPT, making the task easier and making me literate in composing letters like that. There are also layouts that add to your knowledge about what you're doing. So, in the future, it will be easier for you because AI taught you that."

Theme 3: Learns Critical Engagement and Evaluation
(Skepticism in the accuracy of AI-generated outputs)

This theme explores participants' experiences with AI tools and their critical evaluation of the content generated by these tools. Participants expressed skepticism and doubt regarding fully relying on AI-generated content due to its inconsistency or accuracy issues. Consequently, they learned to proofread the AI-generated content and modify it to align with their level of understanding and consciously avoid plagiarism. Moreover, they acquired the skill of using multiple AI tools to verify the correctness of their written work.

ABM2: Sometimes when I ask it to translate, sometimes I'm not confident in

its translation, so what I do is I use its synonyms, the synonyms it provides, because sometimes in Google Translate, I don't like the word it generates.

HUMSS 2: "I like to construct my own essays in Google Docs or Microsoft, and it suggests words which I don't always apply because I also notice that my knowledge of grammar is correct, but it still suggests words; what I do there is I ignore them."

HUMSS 2: "In practical research, there are times when I copy and paste, and then I rephrase it, but sometimes I don't just paste it into my work right away because there are considerations for fluency and formality. So, it's like I still check where my rephrased text fits since what I'm doing isn't overly formal; it needs to look somewhat informal as well. There are choices of words, and I still modify them because there are indeed some deep ones that aren't relevant."

HUMSS 2: "Sometimes I'm doubtful because I wrote my own article and tried it on a checker to see if it would check (the similarity percentage), but it didn't. Then I became doubtful because maybe I do not pay premium, it can't be determined whether its 100 percent plagiarized or original work."

ABM 2: "When you use it, you might feel like, "Wow, I'm so smart," but you're not. So, after using it, I learned that when you generate content with GPT (ChatGPT), don't rely too much on it; you must really check the content and remove the unnecessary words or paragraphs generated by ChatGPT.

HUMSS 2: "I got used to using Filipino as the medium, and now that I'm doing English articles, I try to translate them, but not all words can be translated by Google Translate accurately. I decided not to rely on it too much. Maybe the only time I really trust it is when translating short words, but when it comes to sentences or

paragraphs, it's not that reliable anymore."

Discussion

This study identified the AI writing tools students used by the learners, assessed the perceived usefulness of these tools based on their functions, and explored how students describe the impact of AI tools on them and the quality of their written outputs.

Different AI writing tools are now being utilized by the learners. They have their preferred AI writing tool based on its functions or use. Among the AI writing tools Chat GPT emerged as of the most prominent. Chat GPT is widely use AI writing tool by the learners. As AI writing tool, it offers various solutions or functions that learners needed in writing their academic papers. Moreover, ChatGPT can be used in various languages making it a convenient tool for multilingual learners as a personal tutor synthesizing complex instructions or concepts. Javaid et al. (2023) supported this finding claiming that ChatGPT offer various functions that learners need when writing academic papers. the AI writing tools identified in the research, including ChatGPT, offer various functions that learners need when writing academic papers. Additionally, ChatGPT's ability to operate in multiple languages makes it a convenient tool for multilingual learners, acting as a personal tutor to synthesize complex instructions or concepts. ChatGPT may check for grammatical and structural problems in their work and provide valuable comments.

Generally, learners believe that AI writing tools are very useful in improving the quality of their written outputs in terms of summarizing, paraphrasing, checking of spelling, correcting grammar, analyzing text, detecting plagiarism, generating content, and translating language. Hence, they become more productive and efficient. Recent studies of Lametti (2022); Lund & Wang, (2023), and Stock (2023) supported this findings claiming that the functionality of AI writing tools make it a good writing assistant as it can facilitate basic writing tasks efficiently and correctly.

Based on the generated themes from the qualitative data, using AI writing tools reduces the language anxiety of the learners. Knowing

that they have a writing assistant which can instantly check their basic concerns like grammar, mechanics, and spelling, the learners are more confident to write which lead them to be more productive and efficient in performing their writing tasks.

From an educational psychology perspective, the findings align with Krashen's affective filter hypothesis, which posits that lower anxiety fosters greater language learning success. Students in the study reported reduced language anxiety when using AI tools, knowing they ad instant support for grammar, mechanics, and vocabulary. This boosted their confidence and made them more willing to engage in writing tasks, thereby improving their productivity. Zhang and Tur (2024) further support this, highlighting AI's role in offering personalized learning experiences, enhancing motivation, and reducing language barriers. Learners also noted that ChatGPT provided templates, sample texts, and explanations of unfamiliar vocabulary or sentence structures, functioning as a scaffold for deeper comprehension. Prior research (Shi, 2021; Alharbi, 2023; Kasneci et al., 2023; Taecharungroj, 2023) similarly demonstrates that AI tools improve student literacy by enhancing grammar, vocabulary, idea flow, and critical engagement with texts.

However, the participants of this study expressed their reservations or skepticism about over-reliance on AI tools. While they acknowledged the usefulness of ChatGPT and other applications, they did not rate them as "extremely useful," citing concerns about inaccuracies, inconsistencies in translations, and questionable reliability of generated content. This critical stance reflects Burkhard's (2022) findings on diverse student attitudes toward AI, where some users remain skeptical of content validity. Qualitative data corroborated this as the participants expressed skepticism to the generated content and translated words of AI tools realizing the inconsistencies and inaccuracies to the output provided of AI tools like chat GPT. In this study, learners described how they learned to critically evaluate and validate AI-generated text before integrating it into their academic writing. Such findings connect with technology adoption models, particularly the Technology Acceptance Model (TAM) of Davis (1989),

which highlights that adoption depends not only on perceived usefulness but also on perceived ease of use and trustworthiness. Watters and Lemanski (2023) argue, skepticism around ChatGPT, citing concerns about the accuracy of AI tools' generated content, potential misinformation, and the need for strict quality checks in academic work. Rashidi et al. (2023) further support this by noting that even AI detection tools are unreliable, as they have mistakenly identified genuine abstracts as AI-generated, reinforcing doubts about full reliance on AI in academic settings.

Conclusions

The following conclusions are drawn up based on the results of the study:

1. AI writing tools, particularly ChatGPT, are widely used among senior high school students for various writing tasks, including content generation, grammar checking, and text analysis.

2. While learners generally perceive AI writing tools as "very useful," they have reservations about fully depending on them. Despite this, certain functionalities such as checking spelling, grammar, and text analysis receive higher ratings, indicating their importance in enhancing the quality of written outputs.

3. Learners use AI tools mostly for correcting their grammar, sentence structure, and spelling errors, thereby helping them produce high-quality written content.

4. The use of AI writing tools leads to increased confidence among learners, reducing language anxiety and fostering greater productivity and efficiency in their writing endeavors.

5. Participants have learned to critically engage with and evaluate the content generated by AI writing tools due to potential inconsistencies and inaccuracies, leading to skepticism and the adoption of revision strategies to align the content with their cognitive level.

Recommendations

Based on the conclusions of this study, the following recommendations are suggested:

1. Educators may think of a way to integrate ChatGPT in teaching writing by providing learners some tips and tricks such as writing prompts and assigning roles to AI to further help them learn especially during their independent study time.
2. Teachers may implement strategies to support learners in building confidence and reducing language anxiety using AI writing tools. This can include providing positive reinforcement, encouraging peer collaboration, and offering guidance on effective revision strategies with the help of AI tools.
3. Schools may implement a policy encouraging the responsible use of AI instead of threatening learners with their academic integrity. They may cultivate a culture of honesty and pride despite the existence of AI tools around them.
4. Policy makers may mandate the integration of AI literacy modules in English, Research, and ICT subjects. This ensures that learners are systematically taught how to use AI writing tools responsibly for tasks such as grammar checking, summarizing, paraphrasing, and idea generation, while still prioritizing originality and critical thinking.

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