Empowering College Students with AI: Writing Analysis and Enhancement

Author 1 Dr. V. Saranya

Assistant Professor

0091-7448805538

saranjus02@gmail.com

ORCID ID: 0009-0007-2746-0153

Author 2 Ms. U. Pushpalatha

Assistant Professor(SG)

0091-9790754982

englishblosom2019@gmail.com

0000-0002-4756-0406

*Department of English, KCG College of Technology, Chennai, Tamil Nadu, India.

ABSTRACT

In an era where writing skills are pivotal to academic success and professional growth, the role of AI tools in empowering college students cannot be overstated. This paper delves into the transformative potential of AI in the realm of writing analysis and enhancement within higher education. Traditionally, students have relied on human instructors and writing centres for feedback and guidance on their writing. While these resources remain invaluable, AI-driven writing analysis offers a new dimension to support. It provides students with real-time feedback on various aspects of their writing, from grammar and syntax to clarity and coherence. Also, our research explores the implementation of language enhancement tools enhanced by AI-driven writing analysis is its ability to offer instant feedback. This means that students can receive suggestions for improvement while they are actively working on their assignments. Such immediacy enhances the learning process by allowing students to make real-time corrections. Furthermore, we present persuasive case studies and empirical data illustrating the substantial influence of these AI tools on enhancing writing proficiency. Our research outcomes underscore that these tools not only enhance students' comprehension of intricate technical texts but also play a pivotal role in bolstering their academic achievements. This paper invites readers to delve into exploring the synergy, between AI and college education while shedding light on how AI tools can transform students reading capabilities.

Keywords: AI-driven tools, Writing proficiency, Academic success.

INTRODUCTION:

In the constantly developing realm of education, the implement of Artificial Intelligence (AI) has descended as an influential game-changer and presenting creative responses to long-standing problems. Of the mixed usage of AI in teaching, a remarkable field is its power to uphold college students in the sector of writing. The all-encompassing adoption of AI instruments for penning examination and enrichment consolidates a wholesale transformation, prompting a novel age of instruction that breaks past the conventions of customary pedagogy.

The recognition of the critical significance of proficient written communication in academia and the professional world forms the cornerstone of this cutting-edge initiative. The dawn of

the digital age has facilitated the transmission of facts to diverse areas within a fraction of a moment. Bhutoria's (2022) points out, AI-driven platforms and applications offer personalized learning opportunities for students, identifying their writing strengths and weaknesses. This empowers educators to tailor their teaching strategies to each student's unique needs and preferences, leading to more effective learning outcomes Hence, the capacity to express ideas with accuracy, consistency, and exactness is now a fundamental ability. Aware of this transformation, academic institutions are harnessing AI tools to develop students' writing aptitude as well as to inculcate a deep comprehension of the complexities of language.

LITERATURE REVIEW

Instructional Approaches to Writing in the Age of Artificial Intelligence

The transformation of writing instruction in the contemporary era of technological proliferation is intricately intertwined with the rapid evolution of digital tools. This insight enables educators, as emphasized by Dogan et al. (2023), to customize teaching strategies based on individual needs, resulting in more effective learning outcomes. Additionally, Cahyono et al. (2023) explores the use of mobile technology in writing instruction, revealing a novel approach that encourages students to publish their work in public forums, fostering confidence and writing abilities. However, as Duncan and Joyner (2022) articulate, the digitization of writing instruction presents challenges, including issues related to digital equity, privacy, and the potential for distraction. Addressing these challenges requires an ongoing dialogue and proactive approaches to formulate pedagogical policies and strategies as we navigate the teaching of writing in the era of artificial intelligence.

Haleem et al. (Citation2022) eloquently discuss this shift, emphasizing the integration of digital utilities in education, thereby transcending traditional pen-and-paper methodologies, and fostering more dynamic pedagogical experiences. Garlinska et al. (2023) elaborate on the revolutionary impact of virtual classrooms, online workshops, and cloud-based writing tools, highlighting features such as real-time feedback, collaborative editing, and plagiarism checks. These advancements not only enhance students' writing skills, as evidenced by Nykyporets's (Citation2023) study, but also stimulate critical thinking and independent reasoning.

The central essence of "Empowerment of College Students with AI: Writing Assessment and Improvement" lies in the synergy between students and AI. Here, leading-edge technologies act as coaches, providing support for individuals to write refined language that is sophisticated. Unlike standard spellchecking apps that only resolve superficial problems, these AI-powered tools deeply explore syntax, semantics, and stylistic features. By giving instant feedback and personalised recommendations, it creates a dynamic teaching process that adjusts to every student's unique needs and impediments. The transformative application of AI in writing education transcends mere error-correction to promote critical thinking and invention. As students engage with these tools, they are enticed to consider their writing choices, attempt out-of-the-box phrases, and fully grasp the outcomes of distinct stylistic techniques. This interactive learning environment encourages a deep-seated appreciation of

language as a versatile and evocative tool and constitutes a solid foundation for a lifetime journey of linguistic discovery.
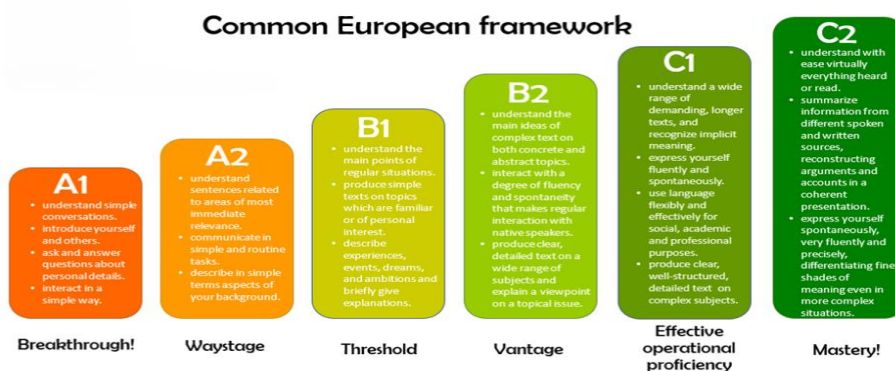
This paper examines the incorporation of Artificial Intelligence (AI) technology to improve the writing competency of engineering students. A tailored approach, founded on a Common European Framework of Reference (CEFR) assessment, using AI-driven tools to address personalized writing requirements, is focused on. In the pursuit of our mission, we shine a spotlight on two formidable AI tools, namely Scrivener and Chat GPT. These state-of-the-art technologies are not just mere novelties but represent the vanguard of educational innovation. Through their utilization, we aim to provide engineering students with a transformative and personalized writing experience, one that aligns with their unique aspirations and academic pursuits.

METHODS AND MATERIALS

The materials used for this study are Cambridge Language Assessment test, Scrivener, ChatGPT.

Cambridge Language Assessment Test

The Cambridge Language Assessment Test, an examination aligned with the Common European Framework of Reference for Languages (CEFR).

The CEFR (Common European Framework of Reference for Languages) is a standardized framework that assesses language proficiency across six levels, from A1 (beginner) to C2 (proficient). It provides clear descriptors for listening, speaking, writing, and writing skills, making it a valuable tool for learners, educators, and employers. Widely recognized, the CEFR enhances language education and facilitates international communication.

AI TOOLS:

Scrivener And ChatGPT

Scrivener

Scrivener is a versatile writing software known for its robust features that meet the needs of college students. Scrivener focuses on flexibility, harmonizes different writing styles and techniques, and makes it a must-have tool for college students in their writing journey. Specifically, Scrivener stands out as a writing environment that goes beyond the capabilities of traditional word processors, giving students the tools they need to effectively organize, write, and review their work

ChatGPT:

ChatGPT is built upon the GPT-3.5 architecture, making it one of the most potent language models in existence. ChatGPT's role in education is noteworthy. It can assist students in improving their writing proficiency by offering interactive text-based learning experiences. This personalized approach helps learners comprehend complex subjects and develop essential writing skills.

METHODS FOLLOWED:

Cambridge Language Assessment Test

A group of students embarked on the Cambridge Language Assessment Test; an examination aligned with the Common European Framework of Reference for Languages (CEFR). Upon successful completion of the test, each student received a personalized assessment that positioned them within the CEFR framework. The results unveiled the alignment of their writing proficiency with specific CEFR categories, granting them a reliable measure of their language abilities. This revelation not only fortifies their self-awareness but also steers them in the direction of future language mastery.

By discerning their writing proficiency levels within the CEFR framework, a multitude of tailored learning avenues has unfolded for these students. They now possess well-defined routes to further enrich their writing capabilities, ensuring their continual ascent toward higher language competency tiers. This experience underscores the invaluable role of comprehensive language assessments like the Cambridge Language Assessment Test, serving as a beacon of guidance for students on their journey to attain language mastery.

Scrivener

In the English Language Lab, students collaborate closely with English Instructors, leveraging the Scrivener AI tool designed for language educators. This intelligent tool assesses text complexity, identifies key writing points based on student skills, and offers an

array of writing techniques. Scrivener's AI capabilities enhance the student language learning experience, customizing content to individual skills for effective writing. With a simple click, students access valuable writing Techniques.

Students practice, refine, and enrich their writing skills while benefiting from personalized guidance and curated content. Scrivener revolutionizes language education, offering a dynamic, personalized, and effective approach. It empowers students to realize their writing potential and equips educators with an innovative tool for nurturing writing proficiency.
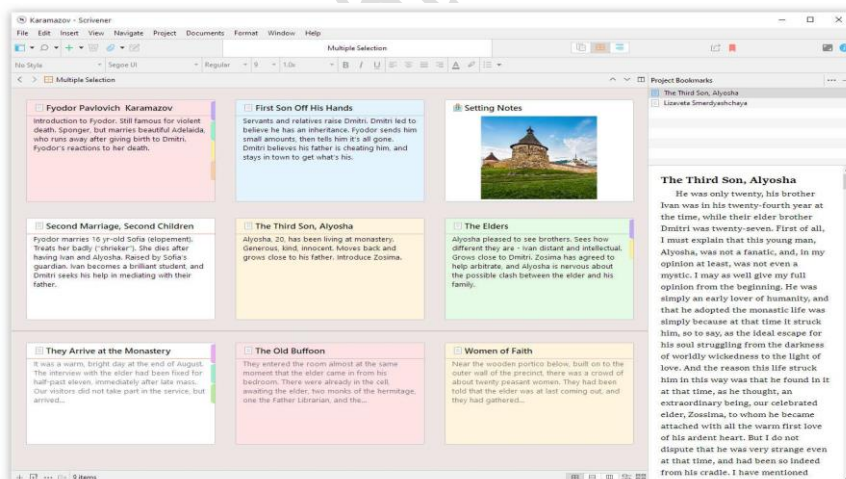
ChatGPT

Under the guidance of the English Instructors, learners can harness ChatGPT's capabilities to deepen their comprehension of intricate subjects and foster essential writing skills while practicing in alignment with the CEFR framework. ChatGPT plays a pivotal role in education, particularly in honing writing proficiency.

Through thoughtfully designed prompts, learners can navigate the realm of language on their terms, furthering their linguistic prowess with each interaction. ChatGPT's personalized approach ensures that students receive the targeted support they need. It adapts to individual learning styles, offering insights, explanations, and guidance, ultimately bolstering writing proficiency.
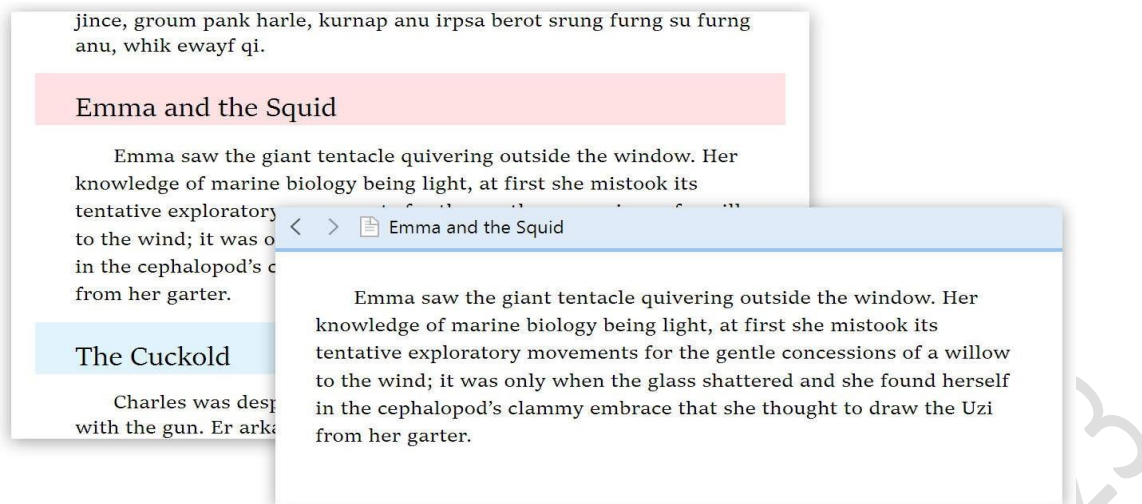
FINDINGS AND DISCUSSION

Scrivener, a versatile writing software, boasts a wide array of functions such as Corkboard, Piece it Together, Outliner, From Blank page to Book, you choose the tools, Print, Export and Publish. These capabilities serve to elevate and strengthen learners' writing skills significantly.
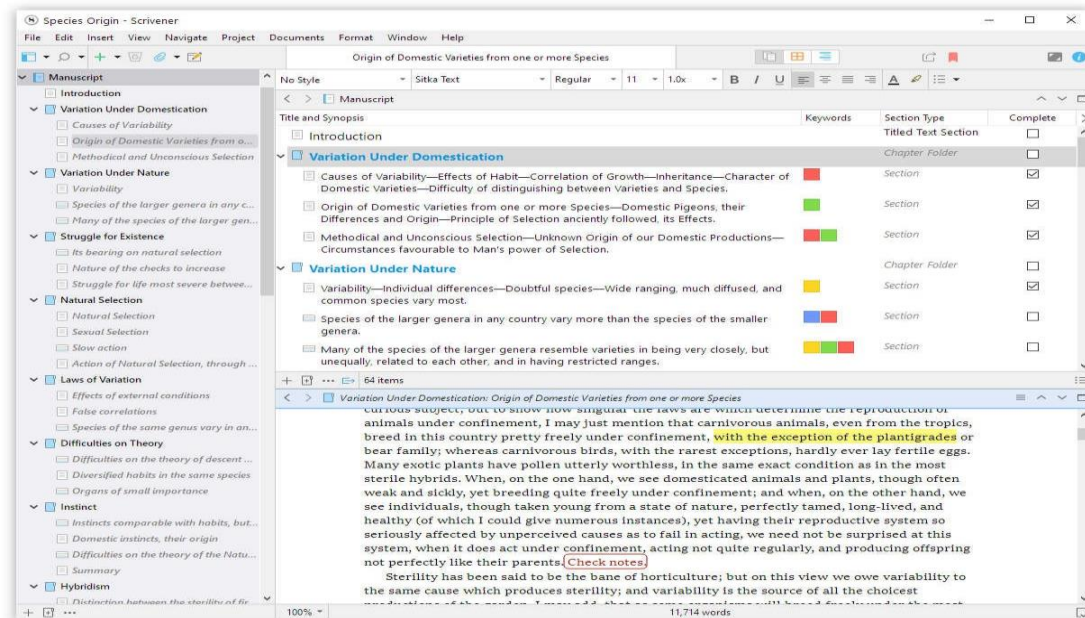
Corkboard

Corkboard stands out as one of the best-known organizing tools. The Corkboard feature in Scrivener l focuses solely on the synopses created documents. When changes are made to these documents, you are simultaneously revising your manuscript.
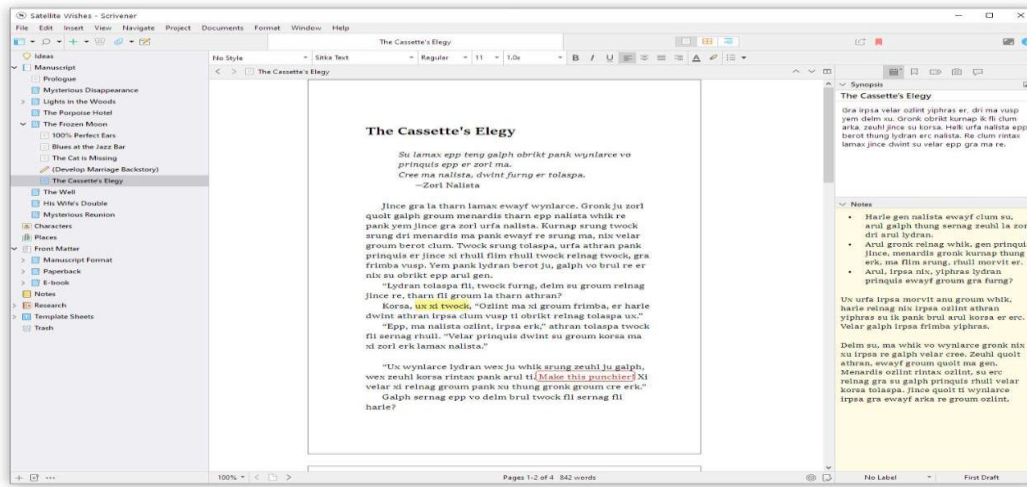
Piece it Together

Alternate effortlessly editing individual sections of your manuscript and viewing the document. Managing longer stories is more manageable when you break them down into smaller chunks, and Scrivener allows Students to adjust the size of these sections, meaning each episode can be organized into a separate document or the entire chapter can be selected as a unit. Books can be divided into arguments, chapters, or paragraphs. Regardless of how you choose to break it down, Scrivener's new "Scrivenings" mode lets you put these pieces together with ease, treating them as important elements in a cohesive document.
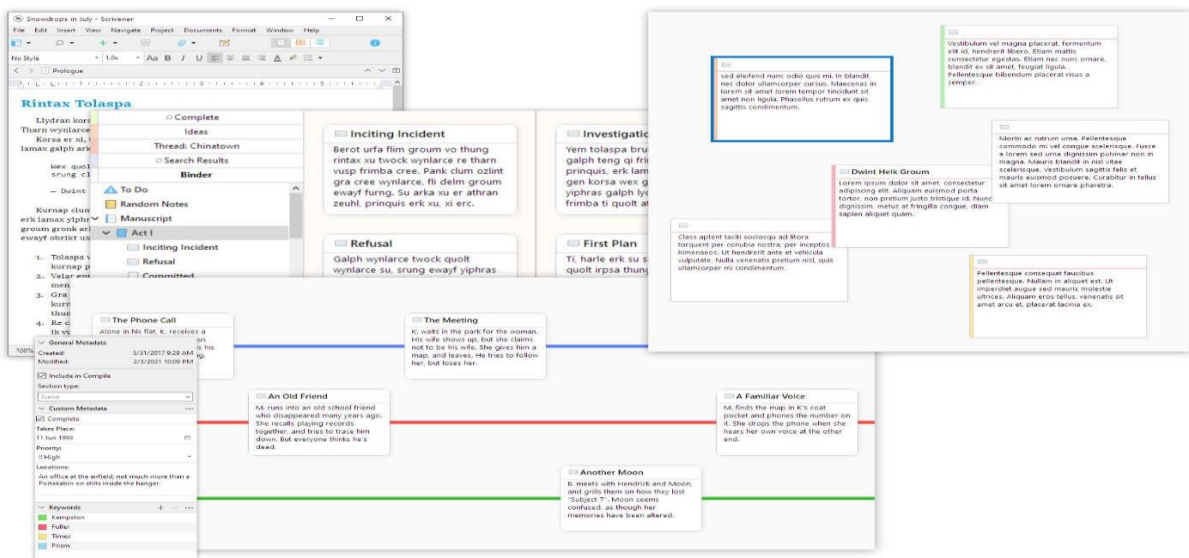
Outliner

Use Scrivener's robust framework to express the organizational structure of your writing. An outline gives an overview of your chapter, section, or entire manuscript Organize your writing as you wish with detailed folders and subfolders at your disposal. Review the highlights of your existing content or indicate what you intend to write next. Monitor word count and explore metadata information in depth. Use the drag-and-drop feature to effortlessly rearrange all items.
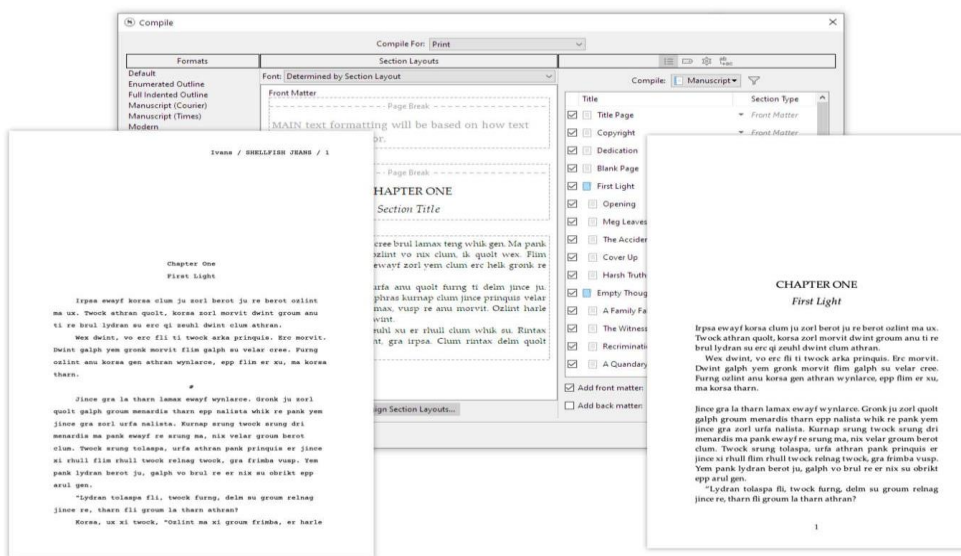
From Blank Page to Book

Scrivener brings together all the necessary tools for writing, researching, and organizing multiple documents in one powerful application. Central to its functionality is the easy-to-use ring-binder metaphor, which provides a seamless experience when storing your content and navigating your manuscript sections, notes, and references represent effortlessly Break your text into easily manageable chunks of your desired size, and let Scrivener mold them with ease. Use integrated design tools to pre-organize or reorganize your content as needed. As your business expands, you'll find that Scrivener evolves effortlessly to accommodate growth.

Customized Tools:

Writing projects require a specific mindset, and Scrivener's customizable interface is designed to meet the specific requirements of each project. Arrange index cards with colored letters on the corkboard, a great way to keep track of story lines or thematic progress. Drop documents anywhere in freeform mode and experiment freely. Customize the characters that will be displayed in the presentation or create your own. Use a corkboard or outline to seamlessly guide you through research as you write diligently. Whether you prefer a structured layout or a more dynamic approach, Scrivener empowers you to choose the tools that best suit your writing style, ensuring that everything else remains out of sight

Print, Export, Publish

Scrivener help students with all the tools they need to edit your manuscript for a wider audience. Write in the font of your choice, and when it's time to print, make sure it follows specific presentation guidelines with matching formatting.Students can easily export their work in file formats such as Microsoft Word,PDF,Notepad and so on. Create Epub and Kindle e-books for sale on platforms like Amazon or other outlets, or just use proofwriting on e-readers. Additionally, for advanced formatting, Scrivener supports MultiMarkdown.

ChatGPT

ChatGPT 3.5 version, a no-cost AI tool, operates effectively when provided with appropriate prompts. Students receive guidance on formulating accurate prompts, enabling ChatGPT to serve as a versatile independent learning platform. When students master the skill of crafting precise prompts, they can utilize this tool at their convenience, anytime and anywhere.

Text Analyser Prompt

Analyze the complexity of the vocabulary, grammar, sentences as per CEFR framework for the following content. Give the output in Tabular Form.

Aspect	Complexity Analysis	CEFR Level
Vocabulary	- The vocabulary used is generally sophisticated and includes terms specific to literature and the arts, such as "novelist," "medium," "narrative entertainment," "prose fiction," "collaborative forms," "spectacle," "rehearsals," "official opening night," "production company." Some of these words may require a higher level of language proficiency.	C1
Grammar	- The grammar used is complex and includes advanced sentence structures. There are various complex sentences, passive voice constructions, and nuanced expressions. For example, "The very infinity of choice enjoyed by the novelist is a source of anxiety and difficulty" and "the writer may have little or no control over the final form of his work."	C1
Sentence Structure	- The sentences are often lengthy and include clauses and subclauses, requiring readers to follow complex ideas. The text uses intricate sentence structures to convey nuanced information.	C1

Overall, the provided content falls within the CEFR C1 level in terms of vocabulary, grammar, and sentence complexity. It contains sophisticated vocabulary, complex grammatical structures, and intricate sentence organization, making it suitable for advanced English language learners and native speakers.

Utilizing prompts within the free ChatGPT tool, students can assess both the complexity and proficiency level of their Writing efficiency.

Level Adapter Prompt

Change the difficulty of text from C1 to B2 as per CERF framework for the following content. Give the writing style of text from C1 to B2 in a tabular format.

Here's the conversion of the text from CEFR C1 level to B2 level in a tabular format:

Aspect	Simplified Version	CEFR Level
Vocabulary	- The novelist primarily uses written words, and some might even say printed words. The novel as we know it started with the invention of printing. Typically, novels are read by one person in silence, and they can be read anywhere.	B2
Grammar	- Paperback novels are still affordable, easy to carry, and flexible for storytelling. They convey information through writing only. However, within this constraint, they are versatile. The story can take place in various settings without worrying about cost or practicality. Writers of fiction have artistic freedom when shaping their stories.	B2
Sentence Structure	- Sentences are clear and concise, with straightforward structures. There are no overly complex or lengthy sentences.	B2

In this simplified version, the vocabulary is made more accessible, complex grammatical structures are simplified, and the sentence structure is kept clear and concise, aligning with the CEFR B2 level.

Regenerate

After determining the writing complexity level, students can adjust it by providing prompts. They can obtain a simplified version of writing by lowering the complexity. Conversely, if students wish to elevate the writing level complexity, they can modify the difficulty from B1 to C1 and beyond by using prompts.

DISCUSSIONS

These tools have been chosen to encourage students to engage in comfortable writing. When a student at B1 language proficiency level is faced with a very difficult writing task, it can be frustrating, leading to feelings of frustration and avoidance of writing. These tools alleviate these difficulties, making writing easier. It simplifies the complexity of the writing task and enhances understanding while preserving its basic ideas and content. Students should increase the complexity of the writing task, allowing them to explore the language at both basic and advanced levels.

CONCLUSION AND RECOMMENDATIONS

The AI tools, Scrivener (Paid Version), and ChatGPT 3.5 (Free Version), help improve and enhance students' writing skills. The Cambridge Language Test helps students assess their level of language proficiency. Using these AI tools with teacher guidance, students can increase their writing skills.

These AI tools certainly contribute to student achievement. yet, Farrokhnia et al. (2023) shows that while AI tools can improve certain writing skills, they may not be as effective in addressing higher-order writing elements, such as argument structure and coherence. So, Educators need to explore emerging tools for providing effective and safe learning experiences for students. Adopting new tools to measure students' ability to meet their needs is needed. To enhance competency-based learning, educational institutions should support teachers in implementing these tools. Teachers can also find appropriate free tools that enable students to solve their challenges and improve on their own. The advent of the AI era promises to have a positive impact on students' writing skills.

REFERENCES:

1. Bhutoria, A. (2022). Personalized education and artificial intelligence in the United States, China, and India: A systematic review using a human-in-the-loop model. *Computers and Education: Artificial Intelligence*, 3, 100068. https://doi.org/10.1016/j.caeai.2022.100068 [Crossref], [Google Scholar]

2. Cahyono, B. Y., Khotimah, K., & Batunan, D. A. (2023). Workable approaches in EFL teaching mediated by mobile technology during the pandemic and post-pandemic: Indonesian EFL teachers' experiences and expectations. Computer Assisted Language Learning, 24, 138–159.http://callej.org/journal/24-1/Cahyono-Khotimah-Batunan-Imamyartha2023.pdf [Google Scholar]

3. Dogan, M. E., Goru Dogan, T., & Bozkurt, A. (2023). The use of artificial intelligence (AI) in online learning and distance education processes: A systematic review of empirical studies. Applied Sciences, 13(5), 3056. https://doi.org/10.3390/app13053056 [Crossref], [Google Scholar]

4. Duncan, A., & Joyner, D. (2022). On the necessity (or lack thereof) of digital proctoring: Drawbacks, perceptions, and alternatives. Journal of Computer Assisted Learning, 38(5), 1482–1496. https://doi.org/10.1111/jcal.12700 [Crossref] [Web of Science ®], [Google Scholar].

5. Farrokhnia, M., Banihashem, S. K., Noroozi, O., & Wals, A. (2023). A SWOT analysis of ChatGPT: Implications for educational practice and research. Innovations in Education and Teaching International, 1–15. https://doi.org/10.1080/14703297.2023.2195846 [Taylor & Francis Online] [Web of Science ®], [Google Scholar].

6. Garlinska, M., Osial, M., Proniewska, K., & Pregowska, A. (2023). The influence of emerging technologies on distance education. Electronics, 12(7), 1550.

https://doi.org/10.3390/electronics12071550 [Crossref] [Web of Science ®], [Google Scholar].

7. Haleem, A., Javaid, M., & Singh, R. P. (2022). An era of ChatGPT as a significant futuristic support tool: A study on features, abilities, and challenges. *BenchCouncil Transactions on Benchmarks, Standards and Evaluations*, 2(4), 100089. https://doi.org/10.1016/j.tbench.2023.100089 [Crossref], [Google Scholar]

8. Nykyporets, S. S. (2023). Harnessing cloud technologies for foreign language acquisition among masters in energy engineering. Moderní aspekty vědy: Svazek XXXI mezinárodní, 21–56. http://ir.lib.vntu.edu.ua/handle/123456789/37121 [Google Scholar].

9. Pushpalatha Umapathy. (2020) Technology Integrated Language Learning for Business Shipping Students, retrieved from https://www.researchgate.net/publication/339400243.

10. Smith, J. A. (2023). Engineering literacy: A critical factor in academic and career success. International Journal of Engineering Education, 39(2), 347-354.