

**PROMOTING STUDENTS' WRITING CRITICAL THINKING
BY USING PARAGRAPH WRITING AI TECHNOLOGY**

THESIS



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Assalamu 'alaikum warahmatullahiwabarakatuh

Setelah melakukan pemeriksaan dan perbaikan seperlunya, maka kami berpendapat bahwa skripsi saudara Chantika Nabilla mahasiswi IAIN Curup yang berjudul **“PROMOTING STUDENTS’ WRITING CRITICAL THINKING BY USING PARAGRAPH WRITING AI TECHNOLOGY”** sudah dapat diajukan dalam sidang Munaqasyah Institut Agama Islam Negeri Curup.

Demikian Permohonan ini kami ajukan. Terima kasih.

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PREFACE

First, praise and gratitude to Allah SWT who has given his mercy to researchers to complete this thesis with the title **“PROMOTING STUDENTS’ WRITING CRITICAL THINKING BY USING PARAGRAPH WRITING AI TECHNOLOGY”**.

This Thesis is submitted to fulfil the requirement for “Sarjana” degree in English Tadris Study Program in IAIN Curup. The researcher realizes this thesis still needs improvement in the future. Furthermore, the researcher hopes and appreciates some criticism that intended for this research. For being perfect in the future. Also, the researcher hopes this thesis can be useful, especially for other researchers who are interested in conducting research in the field.

Curup, 5 July 2024

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The researcher finished this thesis entitled **“PROMOTING STUDENTS’ WRITING CRITICAL THINKING BY USING PARAGRAPH WRITING AI TECHNOLOGY”**. This thesis is submitted to fulfil the requirement for “Sarjana” degree in English Tadris Study Program in IAIN Curup. In the process of compiling this thesis. The researcher got support, guidance, assistance, contribution and motivation from the other. Because of those, the researcher would like to present deepest appreciation to:

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Curup, 5 July 2024

The Researcher



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MOTTO

“Your parents at home are waiting for your return with proud results, don't disappoint them. Save your complaints, because your tiredness is not comparable to their struggle to support you”

“Allah S.W.T does not say life is easy. But Allah S.W.T promises, that indeed with difficulty there is ease.”

(QS. Al-Insyrah : 5-6)

“There is not a single success in this world that is not accompanied by prayer, hard work, consistency, perseverance and patience.”

ABSTRACT

Chantika Nabilla, 2024 : Promoting Students' Writing Critical Thinking by Using Paragraph Writing AI Technology
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The goal of this study is to examine how ParagraphAI Technology, a type of artificial intelligence, is applied to the IAIN Curup's educational process. In this instance, the researchers paid more attention to how ParagraphAI was applied and how it helped students develop their writing skills and critical thinking. In a paragraph-writing class during the third semester of the academic year 2023–2024, this AI-powered application was utilized. Qualitative research methodology and descriptive presentation are used in this study. Ten third-semester English Tadris Study Program students from IAIN Curup will be the research subjects for this study in the academic year 2023–2024. The primary factor in selecting this research topic is that students participate in the Paragraph Writing course, where the instructor uses an artificial intelligence application called ParagraphAI as a teaching tool. The researcher employed document analysis and interviews to gather the data. The findings of this study demonstrate that the application of ParagraphAI Technology significantly enhances students' writing and critical thinking skills, as evidenced by seven indicators, by offering a comprehensive suite of tools catered to various facets of academic writing. First, the ParagraphAI Technology app enhances students' writing skills by identifying and addressing issues, providing analysis, and promoting critical thinking. Lecturers guide students through the app, enhancing their analytical skills. Second, the ParagraphAI Technology app enhances students' writing skills by filtering credible sources, evaluating information, and recommending expert writing. It aids in decision-making, source quality evaluation, and fostering critical thinking and confidence. Third, ParagraphAI Technology enhances students' critical thinking skills in writing through data visualization, concept mapping, semantic analysis, and topic suggestions. It improves argument structure, coherence, and consistency, encouraging exploration of new knowledge areas. Fourth, ParagraphAI Technology enhances students' critical thinking and writing skills through data visualization, concept mapping, and analysis. However, it should be used as a tool for learning and writing, not a replacement. Fifth, ParagraphAI Technology enhances students' writing skills by promoting critical thinking, improving organization, logic flow, sentence improvement, and cohesion analysis, while detecting grammar errors and providing constructive feedback. Sixth, ParagraphAI Technology enhances students' critical thinking and writing skills by

evaluating, selecting, and emphasizing relevant ideas. It uses advanced technologies and text analysis features to identify and evaluate ideas, but students should exercise selectivity and not rely solely on technology. Last, ParagraphAI Technology enhances students' writing skills by providing text analysis, evidence recommendation, and information organization, enhancing persuasiveness, clarity, and cohesion, and fostering critical thinking. The document analysis of the students' written work revealed that the students exhibit varying degrees of critical thinking. The five students are at the Challenged Thinker level, while the remaining five students are at the Beginning Thinker level, despite showing some reflective thinking and goal-setting abilities.

Keywords: *Academic Writing, Critical Thinking, ParagrapAI Technology*

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CHAPTER 1

INTRODUCTION

A. Background of The Research

Learning in the 21st century requires students to have superior competence, to face the era of society 5.0 so that students can produce graduates who are competent and able to answer the demands of the era of society 5.0, the education process in tertiary institutions must include 21st-century competencies. As socialized by the Ministry of Education and Culture competency The 21st century is known as the 6Cs namely, creativity, critical thinking, communication, collaboration, citizenship, and character.¹ The 6Cs socialized by the Ministry of Education and Culture are portable skills that can be implemented into assignments in class or projects outside the classroom as expressed seeing future challenges that are increasingly complex, the 6Cs need to be fully integrated into learning and teaching to produce graduates who are competent and able to face the challenges of the 21st century.²

One component of the 6Cs that must be implemented in a 21st-century learning system is critical thinking. Critical thinking is a key component of the 6Cs of the 21st-century learning system, where students must be involved in learning processes that require deepening and complex thought processes when students analyze, conclude, compare, reason, interpret, synthesize, and evaluate. Although the concept of critical thinking was originally a concept adopted by the

¹ Ruchi Upadhyay and Devendra Singh, 'Readiness Of Pupil-Teachers Towards Creating Progressive Environment For 6 Cs Of Education- A Parallel Mixed Method Study', 33 (2023), pp. 5834–51.

² Parlindungan Pardede, 'Integrating the 6Cs into EFL Integrated Skills Learning', *JET (Journal of English Teaching)*, 6.1 (2020), pp. 71–85, doi:10.33541/jet.v6i1.190.

Western world, it has now been accepted as an essential skill of 21st-century education worldwide³ and has been recommended as an alternative pedagogy for improving language skills.⁴ In the context of learning English as a foreign language (especially at the university and college level), students are expected to promote critical thinking because this helps individuals to be active and effective in achieving understanding, evaluating different points of view, and improving problem-solving skills. A study found that integrating critical thinking-based learning processes in EFL classes can effectively promote students' English skills.⁵

Promoting entails employing AI technology to encourage and strengthen students' critical thinking abilities within the writing process.⁶ This comprises encouraging, facilitating, and developing students' talents. Paul and Elder's approach emphasizes aspects like clarity, precision, and logic, urging students to incorporate these into their writing.⁷ AI technology encourages critical thinking in writing by offering immediate feedback, increasing creativity, and enabling research and evidence collection. By adopting these theories and using AI technology, you may successfully improve students' critical thinking in writing, improving their overall academic skills.

³ Rear, D. (2017). Reframing the debate on Asian students and critical thinking: Implications for Western Universities. *Journal of Contemporary Issues in Education*, 12(2). 87.1,2 (2017), 149–200.

⁴ *Ibid.* p. 79

⁵ A Gandimathi and Nafiseh Zarei, 'The Impact of Critical Thinking on Learning English Language', *Asian Journal of Social Science Research*, 1.2 (2018), pp. 1–10.

⁶ Seth Barnett, 'Application of Vygotsky's Social Development Theory', *Journal of Education and Practice*, 10.35 (2019), pp. 1–4, doi:10.7176/jep/10-35-01.

⁷ R. Paul and L Elder, 'Critical Thinking: The Nature of Critical and Creative Thought', *Journal of Developmental Education*, 31.2 (2008), pp. 34–35.

Critical thinking skills are often prioritized over the other 6Cs skills (communication, collaboration, creativity, and citizenship) because students lay the groundwork for these abilities. Critical thinking is essential for several reasons. Firstly, it aids in problem-solving by allowing individuals to dissect complex issues, assess evidence, and devise effective solutions, which is vital in education, work, and decision-making contexts. Secondly, critical thinking facilitates informed decision-making based on logic and evidence rather than emotions or assumptions, which is crucial for effective leadership and management. Thirdly, it fosters a mindset of continuous learning and adaptation, encouraging individuals to challenge established ideas, seek alternative viewpoints, and embrace new information and experiences. Lastly, critical thinking enhances communication skills by helping individuals organize their thoughts coherently, articulate ideas clearly, and engage in meaningful discussions grounded in sound reasoning and evidence.⁸ While the other 6Cs skills are undoubtedly valuable, critical thinking serves as a foundational skill that bolsters and amplifies their efficacy.

Five components make up the complex process of critical thinking: personal theory, external events, contradiction feeling, and contradiction resolution. A person's views and knowledge make up their knowledge base, and external occurrences bring about a sense of conflict. Personal theory is drawn from the cognitive foundation, and the other processes of critical thinking are driven by a sense of contradiction. It takes several stages to resolve the conflict

⁸ Orlin Kouzov, 'The New Paradigms In Education and Support of Critical Thinking with Artificial Intelligence (AI) Tools', *Serdica Journal of Computing*, 13.1-2 (2019), pp. 27-40, doi:10.55630/sjc.2019.13.27-40.

and all the components of critical thinking to arrive at a well-rounded and useful view of the world.⁹

From the third to the fifth semester of the Curup State Islamic Institute's English Tadris Study Program curriculum, students can choose from four types of writing courses. Paragraph Writing is taught in the third trimester, Essay Writing in the fourth semester, and Creative and Academic Writing in the third semester. A paragraph writing course focuses on the ability to organize a number of phrases in a specific sequence and tie them together in specific ways.¹⁰ The primary elements of an essay writing course are (1) an introduction paragraph that presents attracting statements to the readers' attention, (2) body paragraphs that provide development of a sub-topic of the topic in each paragraph, and (3) a conclusion paragraph that restates the main points and includes additional quotations.¹¹ Courses in Creative Writing centered on the study of writing (including poetry, fiction, theater, and creative nonfiction) and its settings via creative output and process evaluation. We use the term "writing" to refer to not only books and other printed items, but also scripted and unscripted performances, spoken and recorded outputs, and the various forms available in electronic, digital, and other new media.¹² Meanwhile, the academic writing course focuses on a variety of academic goals, including the development of critical thinking abilities, the

⁹ Aziz Al-Sayed, *Critical Thinking: A Study in Cognitive Psychology* (Egypt: Dar Al-Marefa Al-Gameia, 1995).

¹⁰ O AlRouji, 'The Effectiveness of Blended Learning in Enhancing Saudi Students' Competence in Paragraph Writing', *English Language Teaching*, 13.9 (2020), p. 72, doi:10.5539/elt.v13n9p72.

¹¹ Suhaimah Bulqiyah, Moh. Arif Mahbub, and Dyah Ayu Nugraheni, 'Investigating Writing Difficulties in Essay Writing: Tertiary Students' Perspectives', *English Language Teaching Educational Journal*, 4.1 (2021), p. 61, doi:10.12928/eltej.v4i1.2371.

¹² Joanna Pawliczak, 'Creative Writing as a Best Way to Improve Writing Skills of Students', *Sino-US English Teaching*, 12.5 (2015), doi:10.17265/1539-8072/2015.05.004.

stimulation of creativity, and the promotion of conversation as part of a professional community. "An integral role in academic and professional success" is students' ability to express information and ideas via writing.¹³ The researcher's attention in this study will be on the critical thinking part that is applied in the academic writing course.

Critical thinking and technology are two crucial elements in the 21st-century environment. Students' ability to think critically is strongly encouraged by their lecturers who consistently encourage them to achieve critical values of creativity and high-level thinking.¹⁴ By applying the concept of critical thinking in every aspect of learning both inside and outside the classroom, students are expected to be able to relate their ideas and ideas to the context of life so that students will acquire the concept of critical thinking and be able to solve problems by considering the factors that are around them. Technology plays an important role in providing good support for the modern learning process as well as being able to promote student character, especially in forming critical thinking habits.¹⁵ One form of technology that is currently being discussed by the international community is artificial intelligence (AI) technology. In the last few decades, artificial intelligence (AI) has become a strategic issue for educators around the

¹³ Ward Peeters, Mohammed Saqr, and Olga Viberg, 'Applying Learning Analytics to Map Students' Self-Regulated Learning Tactics in an Academic Writing Course', *ICCE 2020 - 28th International Conference on Computers in Education, Proceedings*, 1 August (2020), pp. 245–54.

¹⁴ Tathahira Tathahira, 'PROMOTING STUDENTS' CRITICAL THINKING THROUGH ONLINE LEARNING IN HIGHER EDUCATION: Challenges and Strategies', *Englisia: Journal of Language, Education, and Humanities*, 8.1 (2020), p. 79, doi:10.22373/ej.v8i1.6636.

¹⁵ Eka Apriani, Dadan Supardan, et al., 'Utilizing Ict To Develop Student'S Language Ethic At Islamic University', *POTENSIA: Jurnal Kependidikan Islam*, 5.1 (2019), 1 <<https://doi.org/10.24014/potensia.v5i1.6279>>.

world.¹⁶ In learning foreign languages artificial intelligence has been implemented into learning to enable students to learn and utilize AI and encourage their language skills in various aspects of skills such as speaking, listening, writing, and reading. In the writing class, education practitioners in particular have designed, developed, and even implemented various AI tools to support effective writing such as ChatBot, Quillbot, ParagraphAI, etc.¹⁷

Especially in the current writing class, AI has a strategic role. As a productive skill in English, writing is a multifaceted process that involves the use of language to convey information, ideas, or feelings.¹⁸ In general, the learning process in writing classes in the EFL context aims to develop students' writing literacy which involves the acquisition of knowledge about grammar, vocabulary, punctuation, and sentence structure. Furthermore, the application of effective feedback is also expected to be able to increase students' literacy and critical thinking skills to respond to constructive positive criticism. Departing from these goals, experts in the field of education consistently seek to adopt artificial intelligence to create a modern and effective 21st century. One example of a form of artificial intelligence currently used by writing educators is ParagraphAI.

ParagraphAI is an artificial intelligence-based writing tool that is commonly used to create written content. With the help of its free AI writing aid,

¹⁶ Sing, C. C., Teo, T., Huang, F., Chiu, T. K., & Xing Wei, W. (2022). Secondary school students' intentions to learn AI: Testing moderation effects of readiness, social good, and optimism. *Educational technology research and development*, 70(3), 765-782.

¹⁷ Godwin-Jones, R. (2022). Expanding and contextualizing digital language learning. *Bilingualism: Language and Cognition*, 25(3), p. 386

¹⁸ Shiyao (Ashlee) Zhou and Phil Hiver, 'The Effect of Self-Regulated Writing Strategies on Students' L2 Writing Engagement and Disengagement Behaviors', *System*, 106 (2022), doi:10.1016/j.system.2022.102768.

ParagraphAI, you may write better by producing original content, fixing grammatical and tone issues, and replying to chats, emails, and messages. It respects user privacy, offers a free plan for limited personal usage, is compatible with iOS, Android, and Chrome, and is accessible and ethical with customizable subscription options that prioritize morality above money. It can translate over 25 languages with great accuracy.¹⁹ The features contained in the paragraph include writing, replying, and improving. The writing feature can be used to write articles, essays, and any topic you want. The reply feature is used to reply to emails and messages in a short time. The improved feature is used to improve grammar and sentence structure in a text. AI tools have massive potential to change the writing process for both professional and casual styles. Artificial intelligence is effectively able to identify errors that escape the attention of the author and comprehensively can provide good guidelines for making improvements to writing. As a result, artificial intelligence such as ParagraphAI can help students produce more quality writing.

The use of AI technology in writing classes is expected not only to function as a tool that helps improve the quality of writing but is also expected to be able to answer the challenges of 21st-century learning, namely being able to foster students' critical thinking. According to Rusandi, et.al artificial intelligence can complement the learning and research process if it is used properly and

¹⁹ 'ParagraphAI_ GPT Writer & Chat - Aplikasi Di Google Play'.

responsibly.²⁰ Using ParagraphAI is the best way for students to improve their critical thinking skills in writing, and it works better than any other app. Unlike other tools that might only look at language and syntax, ParagraphAI looks more deeply into how thoughts are organized and how students make sense. ParagraphAI encourages students to think more deeply about their writing by giving them real-time comments on how ideas flow, how well arguments make sense, and how well the structure is put together overall. This active method creates an atmosphere where students can not only improve their language skills but also learn how to write interesting, well-thought-out stories. The detailed feedback that ParagraphAI gives is very helpful because it helps students improve their ability to evaluate, combine, and express ideas clearly. These are skills that are useful in many academic and professional situations, not just writing. Integrating AI into education and research systems can help develop better critical thinking skills and a deeper understanding of the contexts in which AI is used. Thus, the method for developing students' critical thinking in writing classes must apply several main stages which include problem statements, information search, formation of clear arguments, and decision making which are proven to be able to improve students' intellectual skills while increasing their digital competence.²¹ Based on pre-observations conducted by researchers on TBI IAIN Curup students, it was found that the students are still struggling with the critical thinking in writing instruction. Furthermore, the ParagraphAI technology introduced and used

²⁰ Rusandi, M. A., Ahman, Saripah, I., Khairun, D. Y., & Mutmainnah. (2023). No worries with ChatGPT: building bridges between artificial intelligence and education with critical thinking soft skills. *Journal of Public Health*, fdad049.

²¹ Oksana SHKVYR, Iryna HAIDAMASHKO, and Svitlana TAFINTSEVA, 'Developing Critical Thinking in Younger Students Using ICT', *Brain. Broad Research in Artificial Intelligence and Neuroscience*, 11.2 (2020), 230–42 <<https://doi.org/10.18662/brain/11.2/85>>.

for the first time in academic writing class. Therefore, the use of AI technology which continues to develop is expected to be able to help promote students' critical thinking.

The aforementioned studies have made significant contributions to the advancement and proliferation of Artificial Intelligence in enhancing students' writing abilities. Nevertheless, the aforementioned research mostly emphasises the enhancement of students' writing proficiency in terms of grammatical accuracy. However, there remains a significant dearth of comprehensive researches into the influence of artificial intelligence (AI) on fostering students' critical thinking abilities, hence facilitating the production of writing that is both structurally sound and rich in content. According to the findings of pre-interviews with writing lecturers at the English Education Study Program, the quality of students' written output is still rather low. The low quality of student writing is said to be impacted by students' poor critical thinking skills. There was a direct relationship between writing quality and improved critical thinking abilities. Educators believe that one of the primary aims of education is to develop general thinking abilities, particularly critical thinking skills.²² Hence, in an effort to enhance students' critical thinking abilities, lecturers in Academic Writing courses employ artificial intelligence technology as a means of facilitating improvement in this area. The expectation is that the utilisation of AI will facilitate the enhancement of students' critical thinking skills in the domain of writing. According to one study, there is a link between critical thinking and writing quality. Furthermore, it has been

²² Parlindungan Sinaga and Shelly Feranie, 'Enhancing Critical Thinking Skills and Writing Skills through the Variation in Non-Traditional Writing Task', *International Journal of Instruction*, 10.2 (2017), pp. 69–84, doi:10.12973/iji.2017.1025a.

demonstrated that assessment has the greatest degree of link with writing quality.²³ Accordingly, the researcher intends to see the use of one form of artificial intelligence used in the learning process at the IAIN Curup, namely ParagraphAI Technology. In this case, the researchers focused more on the use of ParagraphAI and its role in promoting students' critical thinking in writing skills. This AI-powered application was used in a paragraph writing class in 3rd semester of the academic year 2023-2024. Therefore, researchers conducted research with the title "Promoting Students' Writing Critical Thinking by Using Paragraph Writing AI Technology".

In recent years, numerous studies have been conducted pertaining to the subject matter of this research, particularly the functioning and use of Artificial Intelligence in educational systems, specifically in the context of English as a Foreign Language. A recent study conducted by Roe et al. in 2023 and published under the title "A Review of AI-Powered Writing Tools and Their Implications for Academic Integrity in the Language Classroom". This study makes a significant scholarly contribution by examining the development of three distinct categories. These categories serve as a foundation for the creation of comprehensive pedagogical strategies and policies on academic integrity. Specifically, the study focuses on the utilisation of machine translators (MTs), digital writing assistants (DWAs), and automated paraphrasing tools (APTs) as

²³ Farahnaz Rimani Nikou, Alireza Bonyadi, and Negin Amirikar, 'Investigating the Relationship between Critical Thinking Skills and the Quality of Iranian Intermediate TEFL Students' Writing', *Advances in Language and Literary Studies*, 6.2 (2015), doi:10.7575/aiac.all.v.6n.2p.57.

essential tools in this context.²⁴ Sumakul, et al. (year) did a study aimed at examining the perceptions of Indonesian students on the utilisation of Artificial Intelligence in writing classes. The researchers conducted measurements and researches to gather data for their study. The data was obtained via semi-structured interviews conducted with English as a Foreign Language (EFL) students enrolled in a university in Indonesia. These students possessed prior experience utilising an Artificial Intelligence (AI) application within their writing lesson. The findings indicated that students held favourable attitudes regarding the utilisation of the AI application. The students derived satisfaction from the educational experience, and the utilisation of the AI application facilitated the students' writing endeavours.²⁵ A recent study undertaken by Mahmud has shown the utilisation of artificial intelligence (AI) tools, such as Wordtune, within writing instructional settings. The Wordtune intervention yielded higher writing test scores in the experimental group compared to the control group in terms of quantitative analysis. Additionally, qualitative analysis revealed that students utilising Wordtune exhibited a steady improvement in their lexical resourcefulness and sentence construction.²⁶

B. Research Questions

²⁴ Jasper Roe, Willy A Renandya, and George M Jacobs, 'A Review of AI-Powered Writing Tools and Their Implications for Academic Integrity in the Language Classroom', *Journal of English and Applied Linguistics*, 2.1 (2023), doi:10.59588/2961-3094.1035.

²⁵ Dian Toar Y. G. Sumakul, Fuad Abdul Hamied, and Didi Sukyadi, 'Students' Perceptions of the Use of AI in a Writing Class', *Proceedings of the 67th TEFLIN International Virtual Conference & the 9th ICOELT 2021 (TEFLIN ICOELT 2021)*, 624 (2022), pp. 52–57, doi:10.2991/assehr.k.220201.009.

²⁶ Fawaz Al Mahmud, 'Investigating EFL Students' Writing Skills Through Artificial Intelligence: Wordtune Application as a Tool', *Journal of Language Teaching and Research*, 14.5 (2023), pp. 1395–1404, doi:10.17507/jltr.1405.28.

Based on the phenomenon above, the researcher formulates the research questions as follows:

1. How is ParagraphAI Technology applied to help promoting students' critical thinking in academic writing classes?
2. How is students' critical thinking level in writing?

C. The Objectives of the Research

Based on the research questions that have been formulated by researchers, this study aims to:

1. To analyze how the application of ParagraphAI Technology helps promoting students' critical thinking in academic writing classes
2. To analyze the level of students critical thinking level in writing

D. Delimitation

This research focuses on the implementation process of using a form of artificial intelligence used by lecturers in a paragraph writing class in 3rd semester of TBI IAIN Curup Academic Year 2023/2024. In addition, the researcher focuses on and how the application of ParagraphAI Writing helps develop students' critical thinking in academic writing classes and analyzing students critical thinking level in writing.

E. Significance of the Research

The results of this research are expected to be able to contribute to schools or campuses, English teachers and lecturers, as well as future researchers.

1. For English Tadris Study Program

For especially English Tadris Study Programs, this research can provide good recommendations regarding the effective use of modern learning media to improve students' Writing skills. In addition, this research can help educational institutions to improve the quality of the learning system.

2. English teacher or lecturer

This research can be a good reference for English teachers and lecturers in choosing modern technology-based learning media in the teaching and learning process to answer the challenges of 21st-century education.

3. Future Researchers

This research can be a source of reference and a starting point for research that can be carried out in future periods, especially the latest studies related to artificial intelligence, critical thinking, and writing skills.

F. Operational Definition

1. Promoting

Promoting refers to purposeful efforts and interventions that aim to improve and assist²⁷ the development of students' critical thinking abilities

²⁷ Barnett.

in writing through the use of Paragraph Writing AI technology. This entails providing students with skills and resources that enable critical analysis, concept structure, and effective argumentation in their writing assignments.

2. ParagraphAI

ParagraphAI: GPT Writer and Chat is an Artificial Intelligence (AI) tool that can carry out dialogues with users through computers and even mobile phones.²⁸ In this study, ParagraphAI refers to an artificial intelligence-based writing application used by Students' in paragraph writing classes in 3rd semester of TBI IAIN Curup Academic Year 2023/2024.

3. Critical Thinking

According to Peter A. Facione, the main goal of critical thinking is to assess the veracity of new ideas by processing them, drawing connections between them, and updating prior knowledge through analysis of current learning scenarios.²⁹ In this study, critical thinking is defined as the willingness of students to analyze, conclude, compare, reason, interpret, synthesize, and evaluate the results of their writing assigned by the lecturer in paragraph writing class by utilizing artificial intelligence.

4. Writing Skills

²⁸ Brady D. Lund and Ting Wang, 'Chatting about ChatGPT: How May AI and GPT Impact Academia and Libraries?', *Library Hi Tech News*, 40.3 (2023), pp. 26–29, doi:10.1108/LHTN-01-2023-0009.

²⁹ Peter a. Facione, 'Critical Thinking : What It Is and Why It Counts', *Insight Assessment*, ISBN 13: 978-1-891557-07-1., 2011, pp. 1–28 <<https://www.insightassessment.com/CT-Resources/Teaching-For-and-About-Critical-Thinking/Critical-Thinking-What-It-Is-and-Why-It-Counts/Critical-Thinking-What-It-Is-and-Why-It-Counts-PDF>>.

Writing is a communication method using symbols like alphabets, hieroglyphs, and ideograms to express thoughts, record history, and communicate complex concepts.³⁰ Specifically writing here is defined as the result of student writing in paragraph writing class by utilizing an application based on artificial intelligence, namely ParagraphAI.

5. AI Technology

Artificial intelligence (AI) is the capacity of computers to adjust to novel circumstances in order to resolve issues, provide answers, and carry out a variety of other tasks that require a certain level of intelligence and are typically completed by humans.³¹ The term "AI technology" in this study refers to the ParagraphAI smartphone app, which is utilized in academic writing classes.

ParagraphAI is a powerful tool for students to enhance their critical thinking skills in writing. It provides real-time feedback on ideas flow, argument structure, and overall structure, fostering a deeper understanding of writing. This method not only enhances language skills but also helps students write interesting, well-thought-out stories. ParagraphAI's detailed feedback aids in evaluating, combining, and expressing ideas clearly, skills that are useful in various academic and professional situations. The tool, also known as GPT Writer and Chat, is used in TBI IAIN Curup paragraph writing classes from 2023-2024. It operationalizes Peter A. Facione's framework for critical thinking by allowing students to

³⁰ Ryang-jin Kim, 'A Definition of Writing System - What Is a Writing System? -', *Korean Language and Literature in International Context*, 2023 <<https://api.semanticscholar.org/CorpusID:258491776>>.

³¹ Ben Coppin, *Artificial Intelligence Illuminated* (Jones & Bartlett Learning., 2004).

examine, conclude, compare, reason, interpret, synthesize, and assess their written products. The ParagraphAI smartphone app serves as the focal point of the operational definition of AI technology, highlighting its application in academic writing courses and its ability to adapt to changing conditions.

CHAPTER II

LITERATURE REVIEW

A. Artificial Intelligence

1. Understanding Artificial Intelligence

Artificial intelligence is the ability of machines to adapt to new situations to solve problems, answer questions, and perform various other functions that use a certain level of intelligence and are usually carried out by humans.³² Artificial intelligence is the development of intelligent behavior in humans, animals, and machines to engineer this behavior into computer-related technology.³³ The existence of AI has existed since 30 years ago, but recently AI has become a trend and experienced a big leap as part of changes involving big data, computing power in various fields, and technology-based learning as quoted by UNESCO in a book entitled *Artificial Intelligence in Education: Challenges and Opportunities for Sustainable Development*.³⁴ Starting from the definitions above, it is clear that artificial intelligence is a combination of various technologies related to computers, and machines, as well as innovations and developments in communication technology that are applied in various fields³⁵ that can do work similarly to humans. In line with the application and use of modern technology in all aspects of human life, artificial intelligence has also taken on a broad role in the education sector.

2. Artificial Intelligence in Language Learning

³² Coppin, B. (2004). *Artificial intelligence illuminated*. Jones & Bartlett Learning, p.102

³³ Whitby, B. (2009). *Artificial intelligence*. The Rosen Publishing Group, Inc. p. 56

³⁴ United Nations Education Scientific and Cultural Organization (UNESCO). How Can Artificial Intelligence Enhance Education? [Online]. Available: <https://en.unesco.org/news/how-can-artificial-intelligence-enhance-education> (accessed on June 10th, 2023)

³⁵ Apriani, Supardan, et al.. Ibid, p. 5

Along with the development of the world of technology and processing systems, artificial intelligence (AI) has been massively used in educational practices such as intelligent guidance systems, robot-based learning, and optimization between human and computer interactions.³⁶ Since the debut of AI 3 decades ago, AI was considered an effective tool to facilitate instructional, technology development, and research in education as a new paradigm.³⁷ Specifically, the application of AI in education has opened up new opportunities, potentials, and challenges for practitioners in the field of education to continue to innovate and develop more complex education systems.³⁸

Various forms of applying artificial intelligence in education have proven effective in creating intelligent learning systems.³⁹ The increasing application of AI in education has gone beyond the conventional understanding of AI as an integrated computer system. Artificial intelligence allows for an increase in student learning experiences from primary education units to tertiary institutions. The cooperative use of artificial intelligence can help teacher performance in giving routine assignments to students.⁴⁰ The impact of using AI in education especially the teaching system, has been designed to solve various challenges

³⁶ Xieling Chen, Haoran Xie, and Gwo Jen Hwang, 'A Multi-Perspective Study on Artificial Intelligence in Education: Grants, Conferences, Journals, Software Tools, Institutions, and Researchers', *Computers and Education: Artificial Intelligence*, 1.October (2020), p. 100005, doi:10.1016/j.caeai.2020.100005.

³⁷ Wayne Holmes et al., 'Technology-Enhanced Personalised Learning : Untangling the Evidence', August, 2018, 116 <<http://www.studie-personalisiertes-lernen.de/en/>>.

³⁸ T Baker, L Smith, and N Anissa, 'Educ-AI-Tion Rebooted? Exploring the Future of Artificial Intelligence in Schools and Colleges', Retrieved January 12th (2019), 2024 <https://media.nesta.org.uk/documents/Future_of_AI_and_education_v5_WEB.pdf>.

³⁹ Michael Rowe, 'Shaping Our Algorithms Before Students Shape Us', August, 2019, 151–63 <https://doi.org/10.1007/978-981-13-8161-4_9>.

⁴⁰ Michael J. Timms, 'Letting Artificial Intelligence in Education out of the Box: Educational Cobots and Smart Classrooms', *International Journal of Artificial Intelligence in Education*, 26.2 (2016), pp. 701–12, doi:10.1007/s40593-016-0095-y.

faced in the learning process. Seeing the various explanations above, it can be concluded that artificial intelligence makes a major contribution to the education system.⁴¹

3. The Implementation of AI in Writing Class

There are many different approaches to teaching and learning English today because of the evolving circumstances. Because today's students are "digital natives," or members of the younger generation who were born after the emergence of technology, current teaching, and learning may be performed by utilizing technology, such as digital tools.⁴² Additionally, adopting digital technologies helps students' learning processes and overall comprehension of English courses. Teachers must learn to adapt to technology because students are "Digital Immigrants," or people who were not born in the digital age, making it difficult for them to incorporate digital technologies.⁴³

Because of this, many students are adept at using technology in their studies, particularly when learning a foreign language like English. However, these days, those programs can be combined into a single program called "digital writing tools" that is powered by AI and accessible on mobile devices. The use of this app can help students learn and improve their writing abilities.⁴⁴ An

⁴¹ Ido Roll and Ruth Wylie, 'Evolution and Revolution in Artificial Intelligence in Education', *International Journal of Artificial Intelligence in Education*, 26.2 (2016), pp. 582–99, doi:10.1007/s40593-016-0110-3.

⁴² María Luisa Pérez Cañado, 'Technology for Teaching English as a Foreign Language (EFL) Writing', *The TESOL Encyclopedia of English Language Teaching*, February 2018, 1–12 <<https://doi.org/10.1002/9781118784235.eelt0439>>.

⁴³ Rahmah Fithriani, Tien Rafida, and Amiruddin Siahaan, 'Integrating Online Blogging into EFL Writing Instruction: Exploring Students' Perceptions', *188.Eltlt 2018 (2019)*, pp. 87–90, doi:10.2991/eltlt-18.2019.17.

⁴⁴ Nabi Nazari, Muhammad Salman Shabbir, and Roy Setiawan, 'Application of Artificial Intelligence Powered Digital Writing Assistant in Higher Education: Randomized Controlled Trial', *Heliyon*, 7.5 (2021), p. e07014, doi:10.1016/j.heliyon.2021.e07014.

automated technology that exhibits human cognitive behaviors like learning, reasoning, and self-correction is referred to as having artificial intelligence (AI).⁴⁵ Designing automated systems that can analyze the surroundings and do a task as well as humans is one of the most significant objectives for AI. With the development of AI-powered technology, new teaching and learning experiences in evaluation, tutoring, content creation, and feedback for teachers and students can be created.

B. Critical Thinking

1. Definition of Critical Thinking

Implementation of 21st-century skills in the learning curriculum requires educators to be ready to adapt. A study conducted by Clarke shows that educators are aware of the 21st-century learning system and according to them, 21st-century skills are very important so educators must prioritize creativity and innovation, critical thinking and problem-solving, collaboration, and communication. One that later becomes a concern in 21st-century skills is critical thinking.⁴⁶

Critical thinking is an important component of 21st-century learning. Learners must be actively involved in classes that require depth and complexity of thinking. Learners are required to question and consider various perspectives of

⁴⁵ Stefan A.D. Popenici and Sharon Kerr, 'Exploring the Impact of Artificial Intelligence on Teaching and Learning in Higher Education', *Research and Practice in Technology Enhanced Learning*, 12.1 (2017), doi:10.1186/s41039-017-0062-8.

⁴⁶ Einav Aizikovitsh-Udi, David Clarke, and Sebastian Kuntze, 'Hybrid Tasks: Promoting Statistical Thinking and Critical Thinking through the Same Mathematical Activities', *PNA. Revista de Investigación En Didáctica de La Matemática*, 8.3 (2014), 115–26 <<https://doi.org/10.30827/pna.v8i3.6115>>.

the problem, form judgments, and present analysis with evidence and logical reasoning.

Critical thinking is something that is still difficult to understand in the learning system and continues to be instilled in students. Critical thinking is centered on updating existing knowledge by analyzing the latest learning situations by making comparisons, connecting, and processing new ideas to evaluate truth.⁴⁷ In practice, critical thinking is a method that allows students to analyze and fix problems logically.

2. Critical Thinking Indicators

In measuring the ability to think critically, it is carried out by elaborating on indicators consisting of explanation, interpretation, analysis, evaluation, inference, and self-regulation⁴⁸ which are described by Facione as follows:

a. Explanation

The explanation is the student's ability to state arguments and establish these arguments logically using the data and facts obtained.

b. Interpretation

Interpretation is the ability to interpret and understand the meaning of a problem.

⁴⁷ Nadia Mirela Florea and Elena Hurjui, 'Critical Thinking in Elementary School Students', *Procedia - Social and Behavioral Sciences*, 180.November 2014 (2015), 565–72 <<https://doi.org/10.1016/j.sbspro.2015.02.161>>.

⁴⁸ Peter A. Facione, 'Critical Thinking : What It Is and Why It Counts', Insight Assessment, ISBN 13: 978-1-891557-07-1., 2011, 1–28 <<https://www.insightassessment.com/CT-Resources/Teaching-For-and-About-Critical-Thinking/Critical-Thinking-What-It-Is-and-Why-It-Counts/Critical-Thinking-What-It-Is-and-Why-It-Counts-PDF>>.

c. Analysis

The analysis is the ability to investigate and identify the linkages between statements, facts, data, and concepts, and can conclude.

d. Evaluation

Evaluation refers to the ability possessed by students in assessing the level of credibility of a statement or representation which is then carried out access to the relationship between statements, data, facts, concepts, or other forms.

e. Inference

In inference, students will be able to identify and get concepts or elements in making conclusions.

f. Self-regulation

Self-regulation is the ability to monitor oneself in applying, analyzing, and evaluating oneself as a result of previous thinking in solving a problem.⁴⁹

Then, in their study on the development of students' critical thinking in writing essays, Hendrawati and Saraswati classified critical thinking indicators as analyzing arguments, making inferences using inductive or deductive reasoning, judging or evaluating, and making decisions or solving problems.⁵⁰

Mastuti and Sehuwaky present five indicators of critical thinking in their journal "Revealing students' critical thinking ability according to facione's

⁴⁹ Agnafia, D. N. (2019). Analisis kemampuan berpikir kritis siswa dalam pembelajaran biologi. *Florea: Jurnal Biologi dan Pembelajarannya*, 6(1), 45-53.

⁵⁰ Nurmala Hendrawaty and Ria Saraswati, 'DEVELOPING STUDENTS ' CRITICAL', *Iselt*, 2016, pp. 181–88.

theory": verbal reasoning, argument analysis, thinking as hypothesis testing, probability and uncertainty, and decision and problem-making.⁵¹

Meanwhile, in a study titled "Exploring Critical Thinking in Writing," Khairuddin et al. adopted a Haase indicator that categorized four capacities that demonstrate critical thinking capabilities. The categories are conceptualizing information. When someone has conceptualized information, it means that students have formed an idea or principle about how the newly learned notion works after engaging in particular actions.

- a. Applying Information (Writers may do some reading before students begin writing. Some may use the information students have read up as details in their writing.)
- b. Analysing Information (Not many writers are able to make an analysis of what students have read. Some use the read information into their essays without deciding on its relevance to their writing.)
- c. Synthesizing Information (Good writers are able to combine information from different sources to be used in their write-up.)
- d. Evaluating Information (The advent of an open information system sometimes makes readers unaware of irrelevant information. Ideas that are

⁵¹ Ajeng Gelora Mastuti and Nurlaila Sehuwaky, 'Revealing Students ' Critical Thinking Ability According to Facione ' s Theory', *Al-Jabar: Jurnal Pendidikan Matematika*, 13.2 (2022), pp. 261–72.

not properly assessed are often used to support arguments that may end up being weak with flaws.)⁵²

Suteja dan Setiawan dalam sebuah jurnal berjudul *Students' Critical Thinking and Writing Skills in Project-Based Learning* divides critical thinking indicators into five main categories, namely (1) analytical skills, (2) the ability to synthesize, (3) problem-solving ability, (4) the ability to conclude, and (5) the ability to evaluate.⁵³

C. Critical Thinking in Writing Skills

As an essential skill, critical thinking has been considered as a core component of educational goals in many countries around the world including Indonesia. As a result of the shift in content and information-based teaching towards learning concepts towards critical thinking skills, various efforts continue to be observed to find appropriate strategies for embedding critical thinking into the learning process,⁵⁴ including others in the context of EFL learning. Language learners with critical thinking will be encouraged to make judgments by considering available information and thought processes.⁵⁵ Critical thinking is

⁵² Zulaikha Khairuddin et al., 'Exploring Critical Thinking in Writing', *Proceedings of the International Conference on Sustainable Innovation Track Humanities Education and Social Sciences (ICSIHES 2021)*, 626.Icsihess (2022), 67–72 <<https://doi.org/10.2991/assehr.k.211227.012>>.

⁵³ Suteja Suteja and Dadan Setiawan, 'Students' Critical Thinking and Writing Skills in Project-Based Learning', *International Journal of Educational Qualitative Quantitative Research*, 1.1 (2022), pp. 16–22, doi:10.58418/ijeqr.v1i1.5.

⁵⁴ N.S.M. Daud, 'Developing Critical Thinking Skills in Tertiary Academic Writing through the Use of an Instructional Rubric for Peer Evaluation', July 2012, 1–331 <https://ir.canterbury.ac.nz/bitstream/handle/10092/6866/thesis_fulltext.pdf?sequence=1>.

⁵⁵ Abu Nawas, 'Contextual Teaching and Learning (CTL) Approach through REACT Strategies on Improving The Students' Critical Thinking in Writing', *International Journal of Management and Applied Science*, 4.7 (2018), pp. 46–49.

useful for developing academic achievement, especially in writing skills.⁵⁶ Writing skills support cognitive aspects that involve learning, implementing, understanding, and synthesizing new knowledge.⁵⁷

In modern civilization, people are often faced with various complicated problems that require an individual to make decisions and solve problems.^{58 59} To solve these problems efficiently and effectively an individual must evaluate by thinking critically.⁶⁰ Writing is a complex skill that requires a lot of effort to master. Many researchers believe that writing requires intensive learning and training.^{61,62,63}

The relationship between thinking and writing is that writing is a thought when a person cannot think clearly, then automatically he cannot write clearly. There is no doubt that writing can develop thinking skills. This helps improve thinking processes and contributes to the development of each individual's thinking skills because students are required to state ideas clearly and construct arguments to foster higher levels of thinking. In this regard, a hypothesis is

⁵⁶ Cottrell, S. (2017). *Critical thinking skills: Effective analysis, argument, and reflection*. Bloomsbury Publishing. p.43

⁵⁷ Nawas.

⁵⁸ Mohammad Ali Bagheri et al., 'Keep It Accurate and Diverse: Enhancing Action Recognition Performance by Ensemble Learning', *IEEE Computer Society Conference on Computer Vision and Pattern Recognition Workshops*, 2015-Octob (2015), 22–29 <<https://doi.org/10.1109/CVPRW.2015.7301332>>.

⁵⁹ Nourollah Zarrinabadi, Mohsen Rezazadeh, and Abdollah Chehrazi, 'The Links between Grammar Learning Strategies and Language Mindsets among L2 and L3 Learners: Examining the Role of and Gender', *International Journal of Multilingualism*, 0.0 (2021), pp. 1–18, doi:10.1080/14790718.2020.1871356.

⁶⁰ Morgan, M., and Shermis, M. (1994). *Critical Thinking, Reading, and Writing*. Bloomington, IN: ERIC Clearing House on Reading and Communication Skills. P. 123

⁶¹ Jalil Fathi, Mohammad Ahmadnejad, and Nouroddin Yousofi, 'Effects of Blog-Mediated Writing Instruction on L2 Writing Motivation, Self-Efficacy, and Self-Regulation: A Mixed Methods Study1', *Journal of Research in Applied Linguistics*, 10.2 (2019), pp. 159–81, doi:10.22055/rals.2019.14722.

⁶² Nabila Nejmaoui, 'Improving EFL Learners' Critical Thinking Skills in Argumentative Writing', *English Language Teaching*, 12.1 (2018), p. 98, doi:10.5539/elt.v12n1p98.

⁶³ Bantalem Derseh Wale and Yenus Nurie Bogale, 'Using Inquiry-Based Writing Instruction to Develop Students' Academic Writing Skills', *Asian-Pacific Journal of Second and Foreign Language Education*, 6.1 (2021), doi:10.1186/s40862-020-00108-9.

suggestive in the context of English as a foreign language (EFL) because he argues that cognitive activity is determined by language.⁶⁴ Cognitive activity is reflected in the written text which is then well understood by readers and becomes a reference for the strength of a language.⁶⁵ Therefore, the ability to think critically reflects the linguistic skills of each individual represented by their written work.

In writing classes critical thinking is an integral aspect, meaning that even though students have low writing skills students still make efforts to communicate through critical thinking skills by adapting several ways such as writing using their first language or presenting ideas at the pre-writing stage through code switch. Therefore, this skill needs to be taught implicitly. Writing is part of teaching critical thinking skills that cannot be separated from one another.⁶⁶ When writing students develop their way of thinking critically in generating ideas by using a problem-solving process that involves cognitive and linguistic skills. This process will direct the learner to identify goals to generate and form ideas to refine ideas.⁶⁷ A successful writing class must produce the development of critical thinking that is driven by the interests and skills of the learner and is directed by a collaborative writing process.

⁶⁴ Liming Jiang et al., 'How Grit Influences High School Students' Academic Performance and the Mediation Effect of Academic Self-Efficacy and Cognitive Learning Strategies', *Current Psychology*, 42.1 (2023), 94–103 <<https://doi.org/10.1007/s12144-020-01306-x>>.

⁶⁵ Rizki Anugrah Putri Rahayu, 'Effect of Collaborative Writing Combined with Blog Online Learning on Indonesian EFL Learners' Writing Skill across Motivation', *SALEE: Study of Applied Linguistics and English Education*, 2.1 (2021), pp. 87–98, doi:10.35961/salee.v2i01.219.

⁶⁶ Rohmani N. Indah, 'Critical Thinking, Writing Performance and Topic Familiarity of Indonesian Efl Learners', *Journal of Language Teaching and Research*, 8.2 (2017), pp. 229–36, doi:10.17507/jltr.0802.04.

⁶⁷ White, R. V. (1995). *New Ways in Teaching Writing. New Ways in TESOL Series: Innovative Classroom Techniques*. TESOL, 1600 Cameron Street, Suite 300, Alexandria, VA 22314.

Competence in expressing ideas in the form of writing requires effective writing skills in developing a topic so that it can be understood logically in expressing meaning with correct diction and the preparation of appropriate sentences.^{68,69} Effective writing skills will contribute to much better critical thinking skills.

D. Challenges of Students' Critical Thinking in Writing

English as a Foreign Language (EFL) students exhibit a deficiency in their capacity for critical thinking, namely in the areas of comparing, evaluating, arguing, and expressing differing perspectives within their written work.⁷⁰ In the Indonesian setting, students demonstrate a deficiency in critical thinking skills when composing course assignments. This can be attributed to their inadequate understanding of the notion of critical thinking and the various methodologies for incorporating it into their writing. Recent studies conducted by Indonesian scholars have revealed that the acquisition of critical thinking skills in the context of academic writing offers a significant difficulty for the majority of Indonesian students. Furthermore, Indonesian students may also have difficulties when confronted with the demands of critical academic writing assignments.⁷¹

⁶⁸ Hengki Kris Sanjaya, Eka Apriani, and Sarwo Edy, 'Using Web Blog for EFL Students in Writing Class', *Journal of English Education and Teaching*, 4.4 (2020), pp. 516–535, doi:10.33369/jeet.4.4.516-535.

⁶⁹ Indah.

⁷⁰ Nisbah Shaheen, 'International Students' Critical Thinking–Related Problem Areas: UK University Teachers' Perspectives', *Journal of Research in International Education*, 15.1 (2016), pp. 18–31, doi:10.1177/1475240916635895.

⁷¹ Gin Gin Gustine, 'A Survey on Critical Literacy as a Pedagogical Approach to Teaching English in Indonesia', *Indonesian Journal of Applied Linguistics*, 7.3 (2018), pp. 531–37, doi:10.17509/ijal.v7i3.9798.

Studies have identified a number of factors that influence critical thinking. The majority of the factors are allocated to the cultural factor. Consequently, current researchers attempted to determine the relationship between critical thinking and culture. Some claim that Asians, including Indonesians, do not demonstrate critical thought in their English writing. Other researchers assert that Asians exhibit distinct critical thinking skills than Western students. Moreover, students contend that learners from a particular culture are too diverse to make generalisations about the group's cognitive abilities. A notable factor is language proficiency. A critical thinker is able to articulate his or her ideas effectively in both spoken and written language.⁷²

There are three significant factors that contribute to challenges faced by students in effectively applying critical thinking skills in their writing. The first factor pertains to students' limited critical awareness, which can be attributed to their prior educational experiences in Indonesia. These experiences are perceived by students as lacking sufficient emphasis on the development of critical thinking abilities. Another contributing reason pertains to their limited comprehension of the critical thinking idea, as it is anticipated by the institution at large and specifically by tutors. Another contributing factor pertains to inadequate proficiency in the English language.⁷³

⁷² Rohmani Nur Indah and Agung W Kusuma, 'Factors Affecting The Development of Critical Thinking of Indonesian Learners of English Language', *IOSR Journal Of Humanities And Social Science (IOSR-JHSS)*, 21.6 (2016), p. 86, doi:10.9790/0837-2106088694.

⁷³ Udi Samanhudi and Caroline Linse, 'Critical Thinking-Related Challenges to Academic Writing: A Case of Indonesian Postgraduate Students at a UK University', *Lingua Cultura*, 13.2 (2019), p. 107, doi:10.21512/lc.v13i1.5122.

E. Promoting Students' Critical Thinking Using Artificial Intelligence in Writing

The role of AI in education has become a hot topic of discussion in recent years. Technological tools (including artificial intelligence) have the potential to change the paradigm of the teaching and learning process.⁷⁴ However, lately, there have been many concerns about dependence on technology which might cause a decrease in critical thinking skills. However, recent advances in AI technology show that AI has a big impact on the development of student's critical thinking skills.

Recently there has been an increasing demand for the concept of lifelong learning where one is expected to learn new things after completing formal education. Conventional transfer of knowledge from teacher to student is considered insufficient, therefore the use of technology as a source of knowledge is indispensable. One way for artificial intelligence to be able to contribute to the development of critical thinking skills is through the application of an intelligent tutoring system. This kind of learning system is designed to provide instructions and directions which are then personalized to students, where teaching strategies adapt based on the needs and abilities of each student.⁷⁵ By providing feedback the intelligent tutoring system can help students develop a deeper understanding of complex concepts to hone critical thinking skills. AI-based learning also has the potential to change students' perspectives in the problem-solving process. AI-

⁷⁴ Eka Apriani, Safnil Arsyad, et al., 'ICT Platforms for Indonesian EFL Students Viewed from Gender during the COVID-19 Pandemic', *Studies in English Language and Education*, 9.1 (2022), 187–202 <<https://doi.org/10.24815/siele.v9i1.21089>>.

⁷⁵ Kouzov.

based learning can help develop skills and problem-solving and critical thinking by utilizing machine learning which can provide students with adaptive challenges that require them to implement their knowledge and creativity to determine unique solutions.⁷⁶

AI-powered classroom learning systems use machine learning algorithms to identify students' strengths and weaknesses, offering tailored instruction and adaptive challenges according to their needs. By providing support and feedback on the use of AI, it is hoped that it can help students develop critical thinking skills in the learning process.

According to Harunasari the lecturer underscored the significance of autonomous cognition and ingenuity in the composition process by urging students to employ Artificial Intelligence as a mechanism for inspiration and idea production, rather than relying exclusively on it for the creation of content. The implementation of this procedure involved the provision of prompts that required students to engage in the analysis, interpretation, and evaluation of material, rather than just replicating the content provided by the tool. The objective of this strategy is to cultivate the development of critical thinking abilities, with the ultimate goal of reducing the occurrence of plagiarism.⁷⁷

⁷⁶ Maryam Esmail Nejad et al., 'The Mediating Role of Critical Thinking Abilities in the Relationship Between English as a Foreign Language Learners' Writing Performance and Their Language Learning Strategies', *Frontiers in Psychology*, 13 February (2022), 1–11 <<https://doi.org/10.3389/fpsyg.2022.746445>>.

⁷⁷ Siti Yulidhar Harunasari, Sekolah Tinggi, and Bahasa Asing, 'Examining the Effectiveness of AI-Integrated Approach in EFL Writing: A Case of ChatGPT', *International Journal of Progressive Sciences and Technologies (IJPSAT)*, 39.2 (2023), pp. 357–68.

Consequently, drawing from the aforementioned experts' elucidation, the researchers devised a set of indicators pertaining to the utilisation of artificial intelligence technologies with the aim of enhancing students' critical thinking skills in the domain of writing. These indicators are outlined as follows:

Table 2.1

Indicators of the use of Artificial Intelligence (AI) in developing students' critical thinking in writing

Variables	Indicators
Problem-Solving Process (Nejad, et.al, 2022)	1. Students are able to identify and analyze problems.
	2. Students are able to collect appropriate information, evaluate a series of options, making decisions about the information to be applied and finally evaluate the information obtained to improve writing.
Understanding and analyzing ideas (Harunasari, 2023)	1. Students are able to identify and analyze information to recognize patterns and relationships.
	2. Students gain a deeper understanding of ideas and arguments, and are able to interpret and draw conclusions about the information, ideas and thoughts students get.
Interpreting ideas and information (Kouzov, 2019)	1. Students are able to express theoretical ideas and thoughts in writing.
Judging or evaluating ideas (Kouzov, 2019)	1. Students are able to assess which thoughts or ideas students can put into writing and which students should ignore.
	2. Students are able to build strong arguments in their writing.

F. Students Critical Thinking Level in Writing

Linda Elder and Richard Paul, pioneers in the subject of critical thinking, promote a sophisticated approach to evaluating critical thinking skills. Students argue that critical thinking is more than just problem solving; it includes the capacity to question assumptions, assess information objectively, and think independently. According to their paradigm, people grow from unreflective thinkers to master thinkers. Unreflective thinkers are unaware of their own thought processes, whereas master thinkers have a thorough comprehension of their thought patterns and actively develop them. Elder and Paul emphasize the necessity of cultivating intellectual qualities like intellectual humility, empathy, and persistence. Their strategy pushes people to go beyond basic problem-solving and participate in constant self-reflection, resulting in a more nuanced and flexible approach to critical thinking at all stages of intellectual growth.

Linda Elder and Richard Paul's approach to critical thinking in the context of writing emphasizes the interconnection of language and ideas. Students argue that successful writing is a sign of strong critical thinking skills. According to their concept, people with a higher degree of critical thinking in writing may express coherent and well-reasoned arguments, objectively analyze facts, and examine various points of view. Elder and Paul propose for incorporating intellectual characteristics like intellectual bravery and integrity into the writing process. Students highlight the necessity for writers to question their assumptions, avoid fallacies, and participate in reflective analysis in order to improve the overall quality of their written work. In essence, their paradigm holds that

effective writing is the result of disciplined critical thinking, enabling people to convey their ideas with clarity, coherence, and intellectual rigor.

The phrase "unreflective thinker" in the context of writing skills refers to someone who does not engage in critical thought or reflection when writing. This may be a trait of certain medical students who identify themselves as "unreflective" and struggle with critical thinking in their writing, such as personal statements for the National Resident Matching Program.⁷⁸ An "unreflective thinker" is the lowest degree of critical thinking, suggesting a lack of involvement with critical thinking processes.⁷⁹ This level of thinking is regarded the beginning point for developing critical thinking abilities, and persons at this level are encouraged to progress to more advanced levels of critical thinking via practice and coaching.⁸⁰

In the context of writing skills, a "challenged thinker" is someone who has challenges or hurdles in their writing-related thought processes. Writing may be a difficult endeavor that demands cognitive effort and critical thinking skills. Writing abilities can be challenged for a variety of reasons, including developing and organizing ideas, turning thoughts into meaningful language, and understanding syntax and academic norms.⁸¹ Encouraging educational memory

⁷⁸ Erwin Oktoma et al., 'Students' Critical Thinking Ability in Writing Argumentative Essay', *Proceedings of the 1st Universitas Kuningan International Conference on Social Science, Environment and Technology, UNiSET 2020, 12 December 2020, Kuningan, West Java, Indonesia, 2021.*

⁷⁹ Richard Paul and Linda Elder, 'Critical Thinking Development: A Stage Theory With Implications for Instruction Stage One: The Unreflective Thinker Stage Two: The Challenged Thinker', *Journal of Developmental Education*, 2008.

⁸⁰ Richard Paul and Elder.

⁸¹ Evi Safitri Yulandari and Hendra Suryadi, 'Using Think-Ahead and Write (Taw) Strategy To Improve Students' Writing Skill in Descriptive Text', *Jurnal Ilmiah Global Education*, 3.1 (2022), pp. 78–84, doi:10.55681/jige.v3i1.172.

and actively transferring knowledge from past writing experiences can also help students overcome obstacles and improve their writing skills.

In the context of writing skills, the term "beginning thinker" refers to someone who is still developing their writing-related thought processes. This may be a trait of students who are learning to write or working to improve their writing abilities. Beginning thinkers may have difficulty developing and organizing ideas, putting thinking into intelligible prose, and grasping syntax and academic norms. In the context of writing skills, a "Practicing Thinker" is someone who is actively improving and perfecting their writing-related critical thinking skills. A variety of tactics and strategies have been used to improve students' higher-order thinking skills in writing. The Teaching and Learning method, for example, relates learning materials to real-world applications, helping students to discover meaning in what students've learned and to think critically.⁸² Encouraging educational memory and the transfer of information from past writing experiences can also help students improve their writing and critical thinking skills. These activities seek to foster a better grasp of writing processes and increase students' overall writing skills via active participation and critical thinking.

An Advanced Thinker in writing is someone who has developed their capacity to express complicated concepts with accuracy, clarity, and inventiveness. This level of ability goes beyond the technical requirements of grammar and syntax to include a thorough comprehension of language subtleties

⁸² Muhammad Wildan Hakim and Dina Merris Maya Sari, 'Practicing Contextual Teaching and Learning Approach to Enhance Students' Higher Order Thinking Skill on Writing Ability', *Elsya : Journal of English Language Studies*, 4.3 (2022), pp. 298–308, doi:10.31849/elsya.v4i3.11541.

and an intuitive sense of successful communication.⁸³ Such thinkers are very aware of their audience, adapting their message to connect with various readerships. Their work is distinguished by a careful use of rhetoric, persuasive strategies, and diverse literary devices to engage and fascinate their readers. Furthermore, an Advanced Thinker in writing demonstrates mastery of critical thinking, delivering well-reasoned arguments while effortlessly integrating supporting data. Their work demonstrates a dedication to ongoing progress, as students actively seek criticism and polish their trade. Overall, the Advanced Thinker in writing talent is a dynamic and adaptable communicator who can navigate the difficulties of language to communicate ideas with force and elegance.

The Master Thinker in writing talent is the pinnacle of literary greatness, using words with unrivaled dexterity. This person has an exceptional mastery of syntax, grammar, and vocabulary, flawlessly weaving words into a tapestry that not only educates but also captures the reader's imagination. The Master Thinker goes above the limitations of traditional communication, exhibiting an intuitive talent to imbue their work with depth, complexity, and emotional resonance.⁸⁴ Their text demonstrates a comprehensive grasp of several writing styles, allowing them to easily adapt to any genre or subject matter. Beyond technical proficiency, the Master Thinker has an acute sense of creativity, stretching the limits of traditional communication to produce novel and thought-provoking narratives. This level of competence is built on a deep awareness of the power of words,

⁸³ Richard Paul and Elder.

⁸⁴ Richard Paul and Elder.

which allows them to inspire, convince, and elicit a wide range of emotions. In essence, the Master Thinker in writing talent is a literary virtuoso, a maestro who orchestrates words with exceptional precision, leaving an unforgettable impact on the reader's mind.

The table below shows the indicators of students' critical thinking level in writing skill.

Table.2.2

The Indicators of Students' Critical Thinking Level in Writing by Linda Elder
and Richard Paul

No.	Critical Thinking Level	Indicators
1	Unreflective Thinker	<ol style="list-style-type: none"> 1. Students write without considering their own biases, assumptions, or preconceptions 2. Fails to evaluate the credibility of sources or the validity of arguments presented. 3. Transitions between paragraphs or sections may be weak or nonexistent 4. Often submits work without thoroughly revising or editing, leading to grammatical errors, typos, and unclear expressions 5. Fails to support arguments or claims with relevant evidence or examples. 6. Fails to explore varied sentence structures or use language creatively to engage the reader.
2	Challenged Thinker	<ol style="list-style-type: none"> 1. Students struggle to structure ideas logically, resulting in a lack of coherence and flow in the writing. 2. Faces challenges in expressing ideas clearly and concisely. 3. Displays difficulties in applying proper grammar rules, leading to frequent errors in sentence construction. 4. Faces challenges in generating original and creative ideas. 5. Struggles with the revision process, making it challenging to identify and correct errors in the writing. 6. Fails to effectively integrate supporting evidence or examples to strengthen arguments.
3	Beginning	<ol style="list-style-type: none"> 1. Lack a clear introduction, body, and conclusion in their

	Thinker	<p>writing.</p> <p>2. Relies on a limited range of vocabulary, resulting in simplistic and repetitive language.</p> <p>3. Faces challenges in smoothly transitioning between paragraphs or ideas.</p> <p>4. Demonstrates inconsistencies in applying grammar rules and may make frequent errors in punctuation and sentence structure.</p> <p>5. Struggles to articulate a clear purpose or main idea in the writing.</p> <p>6. Faces challenges in adapting writing style to suit different audiences or purposes.</p>
4	Practicing Thinker	<p>1. Sets clear goals for writing projects, whether it's improving clarity, refining argumentation, or enhancing creativity.</p> <p>2. Utilizes a variety of reputable sources to support arguments and strengthen the overall quality of writing.</p> <p>3. Takes the time to polish and refine writing, paying attention to grammar, punctuation, and overall coherence.</p> <p>4. Constructs well-organized and cohesive pieces of writing with a clear introduction, body, and conclusion.</p> <p>5. Understands and follows a structured writing process, including brainstorming, drafting, revising, and editing.</p> <p>6. Works towards conveying ideas in a concise and easily understandable manner.</p>
5	Advanced Thinker	<p>1. Utilizes advanced vocabulary and sentence structures to convey ideas with precision and impact.</p> <p>2. Constructs well-organized and structurally sound pieces of writing with seamless transitions.</p> <p>3. Pays attention to detail, ensuring flawless grammar, punctuation, and syntax.</p> <p>4. Showcases a high degree of originality and creativity in generating ideas.</p> <p>5. Innovatively combines different perspectives to bring freshness to the writing.</p>
6.	Master Thinker	<p>7. Utilizes advanced vocabulary and sentence structures to convey ideas with precision and impact.</p> <p>8. Showcases a high degree of originality and creativity in generating ideas and presenting them in a unique and engaging manner</p> <p>9. Constructs compelling and sophisticated arguments, considering multiple viewpoints and anticipating counterarguments.</p> <p>10. Exhibits a nuanced and precise command of language to convey complex ideas clearly.</p>

		11. Constructs well-organized and structurally sound pieces of writing with seamless transitions and a clear sense of purpose.
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G. ParagraphAI Technology: GPT Writer and Chat

ParagraphAI Technology: GPT Writer and Chat is a piece of Artificial Intelligence (AI) technology that can conduct out conversational engagements with people via computer devices and even cellphones. If you've ever used a chatbot, this service is same to GPT chat. He usually carries out multiple activities, such as being able to solve a problem, developing brainstorm for learning, business, and so on, answering various questions from various categories, and so on.⁸⁵

The application of ParagraphAI Technology: GPT Writer and Chat is similar to that of Open AI in general. Users must first sign in before students can begin using this AI. A Google account, email, or even social media can be used to sign in.

⁸⁵ Peeters, Saqr, and Viberg.

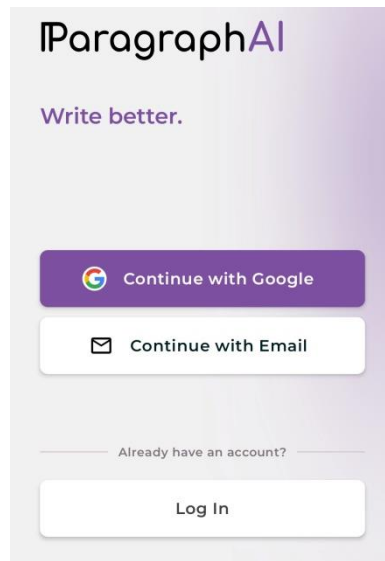
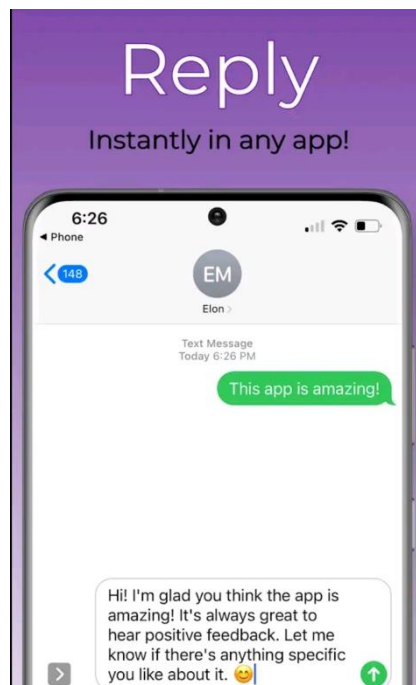


Figure 2.1 ParagraphAI Technology: GPT Writer and Chat sign in display

There are various options available to users to assist enhance the quality of student writing, including promoting critical thinking.⁸⁶

1. Reply Feature



⁸⁶ 'ParagraphAI_ GPT Writer & Chat - Apli kasi Di Google Play'.

Figure 2.2 Reply feature on ParagraphAI Technology: GPT Writer and Chat display

The first feature of ParagraphAI Technology: GPT Writer and Chat is that the platform has the ability to respond to various questions and answers. When you ask any question, the AI will provide the answer. It's not just an answer, but the answer you get has high accuracy. Apart from that, ParagraphAI Technology: GPT Writer and Chat also has the ability to respond to the answers you give.

2. Translation



Figure 2.3. Translate feature on ParagraphAI Technology: GPT Writer and Chat display

It turns out that, like Google Translate, ParagraphAI Technology: GPT Writer and Chat features a translation tool. In reality, not only English but also other languages from across the world may be translated. You just enter the text to

be translated. Then, if needed, pick the translation results. The AI system will complete its tasks quickly and with good outcomes.

3. Fix & Edit



Figure 2.4 Fix & Edit feature on ParagraphAI Technology: GPT Writer and Chat display

Users may fine-tune their writing, modify tone, and construct complete blocks of text with prompts in ParagraphAI Technology: GPT Writer and Chat. These technologies function similarly to ChatGPT or Google's Bard, but with a more focused approach that works within publishing platforms like as blogging, social networking, and email applications. GPT Writer & Chat promotes this tool as a way to speed up the writing process and assist with draft edits.

4. Analyze

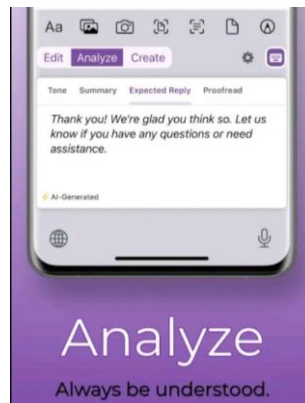


Figure 2.5 Analyze feature on ParagraphAI Technology: GPT Writer and Chat display

The feature to examine text written by the user is also available in ParagraphAI Technology: GPT Writer and Chat. Content analysis, grammatical analysis, and linguistic analysis were all performed. This analysis tool also allows users to give commands to the AI for specialized help with the writing topic.

5. Writing

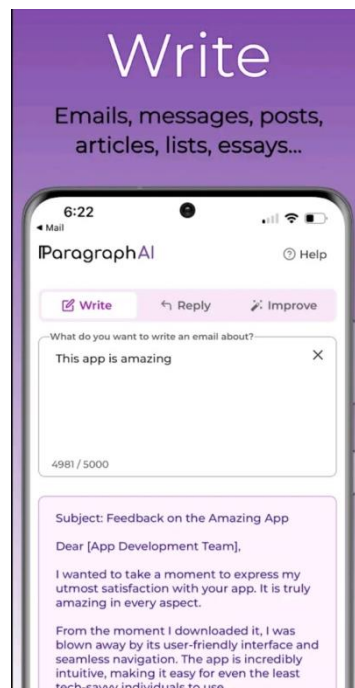


Figure 2.6 Writing feature on ParagraphAI Technology: GPT Writer and Chat display

The following application of ParagraphAI Technology: GPT Writer and Chat is text composition. Users can request that AI organize content with the goal, structure, and linguistic style of their choice. Users can also request that Chat GPT finish previously written content.⁸⁷

H. The Advantages of ParagraphAI Technology

The ParagraphAI generator is a tool that utilises artificial intelligence technology to automatically generate coherent and contextually appropriate paragraphs of text. This advanced system employs algorithms and machine learning techniques through the utilisation of this sophisticated artificial intelligence paragraph generator, individuals are able to access a multitude of advantages that greatly enhance their efficiency and the efficacy of their written correspondences.⁸⁸

1. Saving Time

One of the most significant benefits of using an AI writing generator is the potential to save time. Writing attractive site copy, emails, reports, essays, and other forms of written communication takes time and requires thorough research, careful thought, and several revisions. Our paragraph generator speeds up the process by creating content depending on user input or prompts. As a result,

⁸⁷ Michael R. King, 'A Conversation on Artificial Intelligence, Chatbots, and Plagiarism in Higher Education', *Cellular and Molecular Bioengineering*, 16.1 (2023), pp. 1–2, doi:10.1007/s12195-022-00754-8.

⁸⁸ Muthmainnah Muthmainnah and others, 'Nudging Motivation to Learn English Through a ChatGPT Smartphone-Based Hybrid Model', 2023, pp. 26–42, doi:10.4018/979-8-3693-0502-7.ch002.

authors save time by not having to start from scratch, giving them more time to focus on refining and polishing the generated content.

2. Accuracy of Content

Our paragraph generator's technology is based on natural language processing and machine learning, allowing it to grasp the context and meaning of the text it analyses. The powerful algorithms ensure that the paragraphs are factually correct and relevant to the topic at hand. This is especially useful when writing about complex topics or when dealing with technical or specialised writing when exact and accurate information is required.

3. Text That is Free of Errors

Even the most expert writers make blunders that might undermine their writing's trustworthiness. However, editing your own work can be difficult since we prefer to read what we intended to write rather than what is really written. The extensive grammar and spell-checking capabilities of GraphAI ensure that all created and analysed content is free of inaccuracies and typos.

4. Second-by-Second Responses

In today's fast-paced modern environment, quick turnaround times are critical. AI writing is a game changer for people who work under tight deadlines and must reply to time-sensitive enquiries. The capacity of the ParagraphAI paragraph generator to generate precise responses in seconds has the potential to dramatically enhance efficiency. Users simply enter their prompts and criteria, and the generator generates relevant, coherent, and correct texts that are tailored to their individual needs.

5. Personalised Design

Writing in a consistent and personalised style is critical for brands aiming to preserve a clear identity, as well as individuals looking to develop a distinct sense of voice. Users can be confident that the created material matches the intended tone and voice because our paragraph generator can be directed to utilise specified styles. Consistency throughout all written documents while saving time and effort adopting and adjusting styles for each unique piece of content.

6. Continuous Availability

Many people who have limited time to produce content on their own opt to outsource writing tasks to freelancers like copywriters, technical writers, social media specialists, and bloggers. This can lead to bottlenecks when freelancers have waiting lists or when communication is stunted by time differences. Unlike human writers, our AI paragraph writer can provide support round the clock — including the tools non-writers need to communicate effectively without having to outsource to someone else.

7. Content Diversity

Our AI model has been trained using vast amounts of data—way more than a person could ever consume. This allows the paragraph generator to provide accurate content covering an extensive range of topics and perspectives that can serve as inspiration, providing writers with fresh ideas, unique angles, and unexpected connections that students may not have considered otherwise.⁸⁹

I. Related Studies

⁸⁹ Sam L, 'Writing Paragraph Generator', *Https://Paragraphai.Com/*, 2023 <https://paragraphai.com/?ref=dennisjeanpierre101&gclid=Cj0KCQjw9deiBhC1ARIsAHLjR2BORVYrK9UmtbJ1pDj-nmeEshZYLpJSD6BuksfO7g6X7ZCIRMI6vt8aAnZeEALw_wcB> [accessed 10 October 2023].

Several studies have been conducted by researchers relating to the use of artificial intelligence-based technology integrated into the learning process to develop student's critical thinking, some of which are:

We demonstrate how critical thinking abilities can be organically included in the course content of computer curricula at the tertiary level in research by Rao titled "*Infusing Critical Thinking Skills into Content of AI Course*" using a collection of well-selected examples. The article outlines some of the outcomes of incorporating critical thinking techniques into an artificial intelligence course. The training has included introductions to the six thinking abilities of parts-whole analysis, compare-and-contrast, decision making, causal explanation, prediction, and generalization at suitable points. Through a series of well selected cases, the researcher shows how critical thinking abilities can be organically included into tertiary computing curriculum. The data demonstrates that incorporating critical thinking skills into course material and explicitly introducing them to students helps them think more critically and learn more effectively. According to the data, students' ability to learn is enhanced when critical thinking skills are explicitly taught in a course and integrated into the material.⁹⁰

Next "*The New Paradigm in Education and Support of Critical Thinking with Artificial Intelligence (AI) Tools*" is a 2019 study by Orlin Kouzov. This research investigates this phenomena of The rapid adoption of new information and communication technologies has resulted in an abundance of information in all spheres of public life. This presents new challenges for human development in

⁹⁰ M. R.K.Krishna Rao, 'Infusing Critical Thinking Skills into Content of AI Course', *Proceedings of the 10th Annual SIGCSE Conference on Innovation and Technology in Computer Science Education*, 2005, pp. 173–77, doi:10.1145/1151954.1067494.

the field of education, as education has a particularly complex and important impact on human lives and careers it indicates that the key to students' harmonious development as citizens and professionals, regardless of their profession, is the establishment of some sort of "filters" in their consciousness from a young age to help them sort the truly important things in the ocean of information and develop their knowledge in a consistent and balanced way, building on sustained learning. Simultaneously, for logical reasons, the ever-evolving systems of AI can and should find an appropriate use in education, aiding this crucial process of filtering and encouraging adolescents' so-called critical thinking.⁹¹

Then, a study entitled “*Playing with AI to Investigate Human-Computer Interaction Technology and Improving Critical Thinking Skills to Pursue 21st Century Age*” use a mixed methods strategy to collect data using both quantitative and qualitative methodologies. Finding out how AI companion applications affect EFoLLe (English as a foreign language) interactions with technology was the aim of this study. This research focuses on a new immersion teaching approach for university-level English that uses artificial intelligence. The main objectives of this course are CT and the students' English competence. Shows that the use of AI companions to improve students' critical thinking skills benefits the participants. AI-based training can aid students in developing their critical thinking abilities since it encourages students' self-confidence, open-mindedness, trust, and maturity in English. The reason for this is that critical thinking abilities are the

⁹¹ Kouzov.

cornerstone of 21st-century competencies, and AI-based training aids students in developing these abilities. According to this study, AI-based training is beneficial since it fosters non-native English speakers' growth in the areas of trustworthiness, confidence, open-mindedness, and maturity. Mastering new skills in the twenty-first century also aids in the development of CT abilities that form the basis of critical thinking.⁹²

Based on the three studies above, there are similarities with the research that will be carried out by researchers, namely the use of AI technology in cultivating critical thinking skills. However, there is an aspect that distinguishes this research from previous studies, namely the researcher focuses on looking at the influence of AI in promoting students' critical thinking related to writing skills.

⁹² Muthmainnah, Prodhah Mahbub Ibna Seraj, and Ibrahim Oteir, 'Playing with AI to Investigate Human-Computer Interaction Technology and Improving Critical Thinking Skills to Pursue 21stCentury Age', *Education Research International*, 2022 (2022), doi:10.1155/2022/6468995.

CHAPTER III

RESEARCH METHODOLOGY

A. Research Design

This research uses descriptive presentation and qualitative research methodology. Descriptive research determines and describes how something happens, so researchers must reveal the results of the research exactly as students were found.⁹³ Qualitative research is an iterative process in which different new meanings come closer and closer to the phenomenon being researched and obtained, leading to greater knowledge for the scientific community.⁹⁴ Departing from what was conveyed by the experts above, the purpose of this research is to see real phenomena and findings from what happens in the process of applying artificial intelligence in paragraph writing class. Of course, the findings in this study are not interfered with by any assumptions and additions from the researcher's point of view, which means that the data presented will be real.

Furthermore, this study will be presented qualitatively. Qualitative research explores social events as students occur naturally and is focused on creating explanations of social phenomena.⁹⁵ In addition, descriptive qualitative research focuses on depicting phenomena that occur spontaneously without using experiments or artificial treatments. In other words, data must be collected as it is in the field, and researchers may not change or add to the information found.

⁹³ Gay, L. R & Airasian, *Educational Research: Competencies for Analysis and Application (10th Edition)*. (Upper Saddle River, NJ: Prentice Hall, 2000), P. 175.

⁹⁴ Patrik Aspers and Ugo Corte, 'What Is Qualitative in Qualitative Research', *Qualitative Sociology*, 42.2 (2019), pp. 139–60, doi:10.1007/s11133-019-9413-7.

⁹⁵ Beverley Hancock, *Trent Focus for Research and Development in Primary Health Care: an introduction to Qualitative Research*, (Trent Focus, 1998), P. 02.

From the description above it can be seen that this study uses a descriptive approach which is presented qualitatively, in short, the researcher will summarize the phenomenon using data collected in the field and present it in the form of words or descriptions rather than numbers or measurements.⁹⁶ Researchers must refrain from making changes that would compromise the naturalization of the data to maintain data authenticity.

B. Subject of the Research

A researcher must have the capacity to provide a complete and sensitive description of the experience being investigated if students wish to participate in qualitative research. The descriptions given will be based on the experience from what students get from the research subjects themselves.⁹⁷ Qualitative research does not use the term population because qualitative research departs from existing cases in social situations.⁹⁸ The people who are the focus of the research are referred to as research subjects, better known as the research population.⁹⁹ In this study, the researchers used purposive sampling. Purposive sampling, according to Tongco, is used to identify people with specified qualities.¹⁰⁰ The ten students chosen for this study have attributes that will help them improve their critical thinking and writing skills. These students were chosen based on their

⁹⁶ B Bogdan and S.K. Bilken, 'Quality Research for Education: An Introduction to Theory and Methods', *Qualitative Research For Education An Introduction to Theory and Methods : : Allyn and Bacon.*, 1992, pp. 106–56.

⁹⁷ Darlington, Y., & Scott, D. (2002). *Qualitative research in practice: Story from the field. New South Wales, Australia: Allen & Unwin.* p.134

⁹⁸ Sugiyono, *Metode Penelitian Kombinasi*, (Bandung: Penerbit Alfabeta, 2001), P. 297

⁹⁹ Stephen D. Lapan and MaryLynn T. Quartaroli, *Qualitative Research: An Introduction to Methods and Designs*, (San Francisco: Jossey-Bass, 2012), P. 83.

¹⁰⁰ Ma Dolores C. Tongco, 'Purposive Sampling as a Tool for Informant Selection', *Ethnobotany Research and Applications*, 5 (2007), pp. 147–58, doi:10.17348/era.5.0.147-158.

demonstrated aptitude and motivation, as assessed by their academic writing professor. This chosen strategy assures that participants are most able to benefit from and contribute to the research on developing critical thinking using ParagraphAI technology.

The research subjects in this study will be the 3rd-semester students from the English Tadris Study Program at IAIN Curup academic year 2023/2024 with a total of 10 individuals. The basic consideration in choosing the subject of this research is that students take part in the Paragraph Writing class where the lecturer in charge of the course applies the use of an artificial intelligence-based application called ParagraphAI as a learning medium.

C. The Technique of Collecting Data

1. Interview

In this study, researcher used the interview to collect the data. Interviews are the most frequently used form of data collection in qualitative research. Any one-on-one conversation between people with a specific purpose is referred to as an interview, which is a technique used to gather important facts or information from people. Respondents' descriptions of the situation, as well as their perceptions and understanding of reality, can all be learned through interviews.¹⁰¹ This allows researchers to access perceptions or understand meanings that have been created or formed by respondents. The interview is a type of data collection that involves asking questions of study participants to elicit the desired responses.

¹⁰¹Kumar, R. (2011). Research methodology. p. 59

Methods of asking questions can be very flexible (ability to develop questions as students come to mind) or rigid (requiring strict adherence to pre-selected questions). In this study, researchers used interviews to gather data on the second research question, which is about how ParagraphAI helps students promote and improve their critical thinking skills in writing skills. The interview technique adopted in this study is a structured interview. The type of interview that is commonly used in survey research is a structured interview. This requires planning questions so that the researcher can ask each respondent identical questions uniformly. Structured interviews, sometimes referred to as standard interviews, consist of a series of planned questions that are consistent in phrasing and sequence.¹⁰² This is done to ensure that the responses or answers can be combined to meet the research objectives. One of the benefits of conducting structured interviews is ensuring consistency in responses, which allows for the comparison of data.¹⁰³

2. Document Analysis

In research, document analysis entails studying textual or visual resources in order to extract useful information. It is a qualitative research approach for analyzing the content, context, and consequences of many sorts of documents. Overall, document analysis is a great qualitative research tool that

¹⁰² M Nor Rashidi et al., 'The Conduct of Structured Interviews as Research Implementation Method', *Journal of Advanced Research Design*, 1.1 (2014), 28–34.

¹⁰³ *Ibid*, p. 61

may give deep insights into a variety of issues by systematically and rigorously studying document content.¹⁰⁴

In this research, document analysis can be carried out on the results of student writing made with the help of artificial intelligence or AI. Later, the writing of these students will be assessed and examined regarding the aspects of writing that students apply to see the extent of their level of critical thinking in writing. After analyzing the documents written by students, it can be seen at what level the students' critical thinking skills in writing are.

D. Instruments of the Research

1. Interview Guidance

The human is the preferred instrument in naturalistic inquiry. The researcher is the main research instrument, he continued. The aforementioned justifications lead to the logical conclusion that the researcher is the one who both gathers and analyzes the data. However, the researcher also needs a questionnaire as a study tool to provide comprehensive data.

Subsequently, in order to address the second research inquiry pertaining to the influence of the ParagraphAI application on fostering students' critical thinking skills in writing, the researcher devised a set of interview guide questions derived from the indicators established in chapter II. The interview guide is offered in the following table:

¹⁰⁴ Sugiyono, *Metode Penelitian Manajemen, Pendekatan: Kualitatif, Kuantitatif, Kombinasi (Mixed Methods), Penelitian Tindakan (Action Research), Penelitian Evaluasi*, 6th edn (ALFABETA, 2018).

Table 3.1
Interview Guidance of Indicators of the use of Artificial Intelligence (AI) in
developing students' critical thinking in writing

Variables	Indicators	Questions
Problem-Solving Process (Nejad, et.al, 2022)	Students are able to identify and analyze problems.	How do you use the ParagraphAI Technology application to identify and analyze problems in writing?
		What kind of instructions did your lecturer give you in using the ParagraphAI Technology application to identify and analyze problems in writing?
		What are the key features of the ParagraphAI Technology application that enable students to analyze issues in-depth?
		Please provide a concrete example of how a student uses the ParagraphAI Technology application to identify and analyze issues in their writing?
		How does the process of using the ParagraphAI Technology application help students develop their critical skills in addressing various issues in writing?
		Please explain a difference in students' abilities to identify and analyze issues before and after using the ParagraphAI Technology application!
	Students are able to collect appropriate information, evaluate a series of options, making decisions about the information to be applied and finally evaluate the information obtained to improve writing.	How do you use ParagraphAI Technology to collect information to use as material for writing?
		How do you use ParagraphAI Technology to apply and evaluate the information obtained to improve writing?
		Please provide a concrete example of how the ParagraphAI Technology application helps you in making decisions about relevant and important information to include in your writing!

		How does the process of evaluating information you obtain through the ParagraphAI Technology application help you improve the quality of your writing?
		How does the ParagraphAI Technology application enhance your ability to assess the strengths and weaknesses of the information you apply in your writing?
Interpreting ideas and information (Kouzov, 2019)	Students are able to identify and analyze information to recognize patterns and relationships.	How does the ParagraphAI Technology application help you identify relevant information to then analyze it in finding patterns and relationships?
		What are the specific features in the ParagraphAI Technology application that make it easier for you to recognize patterns and relationships among the information you receive?
		Please provide a concrete example of how you use the ParagraphAI Technology application to identify patterns or relationships in the information you receive before writing!
		How does your ability to recognize patterns and relationships among the information you receive through the ParagraphAI Technology application affect the way you structure and develop arguments in your writing?
		Please explain how the ParagraphAI Technology application assists you in enhancing your ability to analyze information and identify relevant patterns and relationships in writing!
	Students gain a deeper understanding of ideas and arguments, and are able to interpret and draw conclusions about the information, ideas	How do you maximize the features in the ParagraphAI Technology application to help you draw conclusions?
	How does the ParagraphAI Technology application help you	

	and thoughts students get.	<p>gain a deeper understanding of the ideas and arguments you encounter in your writing?</p> <p>What are the specific features in the ParagraphAI Technology application that help you interpret information, ideas, and thoughts, and then draw relevant conclusions?</p> <p>Please provide a concrete example of how you use the ParagraphAI Technology application to gain a deeper understanding of a concept or argument before writing!</p> <p>Please explain to what extent the ParagraphAI Technology application has helped you enhance your ability to gain a deeper understanding and interpret information more effectively!</p>
Judging or evaluating ideas (Kouzov, 2019)	Students are able to express theoretical ideas and thoughts in writing.	<p>What features can you use in ParagraphAI Technology that can make it easier for you to express ideas and thoughts in writing?</p> <p>What do you think about the presence of these features in ParagraphAI Technology?</p> <p>What new knowledge did you gain after using ParagraphAI Technology, especially regarding your ability to express ideas in writing?</p> <p>How does using the ParagraphAI Technology application help you express theoretical ideas and thoughts in your writing?</p> <p>Please provide a concrete example of how the ParagraphAI Technology application helps you convey theoretical ideas or concepts in writing!</p> <p>How does using the ParagraphAI Technology application affect your ability to better communicate theoretical ideas and thoughts in your writing?</p>

		Please explain how the ParagraphAI Technology application has helped you improve your ability to express theoretical ideas and thoughts more fluently and effectively when writing!
Problem-Solving Process (Nejad, et.al, 2022)	Students are able to assess which thoughts or ideas students can put into writing and which students should ignore.	What kind of explanation did your lecturer give regarding selecting ideas and thoughts that should or should not be used in a piece of writing?
		How does ParagraphAI Technology help students evaluate and sift through thoughts or ideas worth including in their writing?
		Please explain how ParagraphAI Technology facilitates students in identifying and evaluating ideas relevant to their academic writing topics!
		How does ParagraphAI Technology differentiate between relevant and irrelevant thoughts or ideas in academic writing?
		What specific features in ParagraphAI Technology assist students in understanding and assessing thoughts or ideas that align with the goals of their writing?
		Please provide a concrete example of how ParagraphAI Technology helps students determine which thoughts or ideas should be emphasized in their writing, and which should be disregarded!
		In your opinion, to what extent is ParagraphAI Technology effective in helping students improve their skills in evaluating and selecting relevant thoughts or ideas to include in academic writing?
	Students are able to build strong arguments in their writing.	How does the ParagraphAI Technology application help students build strong arguments in their writing?

		What are the main features of ParagraphAI Technology that support students in developing the ability to construct strong arguments?
		How does the process of using ParagraphAI Technology enhance students' ability to create consistent and persuasive arguments?
		Please provide a concrete example of how students use ParagraphAI Technology to improve the quality of arguments in their writing!

2. Document Analysis Checklist

The document analysis instrument in this study was developed based on the theory of Linda Elder with Richard Paul which discusses the level of critical thinking in writing.

Table.3.2
Document Analysis Checklist

No.	Critical Thinking Level	Indicators	Yes	No	Notes
1	Unreflective Thinker	1. Students write without considering their own biases, assumptions, or preconceptions			
		2. Fail to evaluate the credibility of sources or the validity of arguments presented.			
		3. Transition between paragraphs or sections may be weak or nonexistent			
		4. Often submit work without thoroughly revising or editing, leading to grammatical errors, typos, and unclear expressions			

		5. Fail to support arguments or claims with relevant evidence or examples.			
		6. Fail to explore varied sentence structures or use language creatively to engage the reader.			
2	Challenged Thinker	1. Students struggle to structure ideas logically, resulting in a lack of coherence and flow in the writing.			
		2. Face challenges in expressing ideas clearly and concisely.			
		3. Display difficulties in applying proper grammar rules, leading to frequent errors in sentence construction.			
		4. Face challenges in generating original and creative ideas.			
		5. Struggle with the revision process, making it challenging to identify and correct errors in the writing.			
		6. Fail to effectively integrate supporting evidence or examples to strengthen arguments.			
3	Beginning Thinker	1. Lack a clear introduction, body, and conclusion in their writing.			
		2. Rely on a limited range of vocabulary, resulting in simplistic and repetitive language.			
		3. Face challenges in smoothly transitioning between paragraphs or ideas.			

		4. Demonstrate inconsistencies in applying grammar rules and may make frequent errors in punctuation and sentence structure.			
		5. Struggle to articulate a clear purpose or main idea in the writing.			
		6. Face challenges in adapting writing style to suit different audiences or purposes.			
4	Practicing Thinker	1. Set clear goals for writing projects, whether it's improving clarity, refining argumentation, or enhancing creativity.			
		2. Utilize a variety of reputable sources to support arguments and strengthen the overall quality of writing.			
		3. Take the time to polish and refine writing, paying attention to grammar, punctuation, and overall coherence.			
		4. Construct well-organized and cohesive pieces of writing with a clear introduction, body, and conclusion.			
		5. Understand and follows a structured writing process, including brainstorming, drafting, revising, and editing.			
		6. Work towards conveying ideas in a concise and easily understandable manner.			
5	Advanced Thinker	1. Utilize advanced vocabulary and sentence structures to convey			

		ideas with precision and impact.			
		2. Construct well-organized and structurally sound pieces of writing with seamless transitions.			
		3. Pay attention to detail, ensuring flawless grammar, punctuation, and syntax.			
		4. Showcase a high degree of originality and creativity in generating ideas.			
		5. Innovatively combine different perspectives to bring freshness to the writing.			
6.	Master Thinker	1. Utilize advanced vocabulary and sentence structures to convey ideas with precision and impact.			
		2. Showcase a high degree of originality and creativity in generating ideas and presenting them in a unique and engaging manner			
		3. Construct compelling and sophisticated arguments, considering multiple viewpoints and anticipating counterarguments.			
		4. Exhibit a nuanced and precise command of language to convey complex ideas clearly.			
		5. Construct well-organized and structurally sound pieces of writing with seamless transitions and a clear sense of purpose.			

E. Data Analysis Techniques

Researchers continue to study the data after it has been collected by using data collection approaches. Data analysis in qualitative research is done inductively, which means that the process begins with facts rather than theoretical conclusions. Researchers go into the field to research, evaluate, interpret, and form conclusions based on the phenomena that exist there. Researchers will be confronted with data collected in the field. Researchers must examine this data to uncover significance, which then becomes the result of the study.

The data analysis process in qualitative research begins by examining all available data from various sources such as interviews, observations written in field notes, personal documents, official documents, pictures, photos, and so on. The objective of data analysis in qualitative research is to discover the meaning behind the data through the identification of the perpetrator subject. Researchers are confronted with a variety of study objects containing data that must be analyzed so that the link between one data and another may be disclosed, resulting in a general understanding.¹⁰⁵

During the data collection process, researchers will individually engage with respondents and utilise smartphones as a tool to document interview activities conducted with semester 3 students enrolled in the English Tadris study programme at IAIN Curup for the academic year 2023/2024. The interactive model was utilized to examine research data in this study. However, before

¹⁰⁵ Lexy J Moleong, 'Metodologi Penelitian Kualitatif / Lexy J. Moleong', 2010.

making conclusions, the researcher uses data triangulation to improve the researcher's grasp of the data and facts at hand.¹⁰⁶ The following are more detailed descriptions of the data analysis technique:

1. Data from Interview

a. Data Reduction

Data Reduction is a selection process that focuses on reducing, abstracting, and changing raw data that originates from written records in the field. This process continues throughout the research, even before data is gathered, as evidenced by the conceptual framework, study questions, and data collection technique used. The process of data reduction in this study encompasses several techniques such as summarization of information, coding, identification of themes, and development of clusters. These tasks are accomplished by the use of a meticulous process of data selection, summarization, or concise descriptions, followed by their categorization into a more comprehensive framework. The process of condensing the findings obtained from data collecting into overarching concepts, classifications, and themes is commonly referred to as data reduction activities. The process of data collecting and data reduction is characterised by a reciprocal relationship, whereby conclusions are drawn and data is

¹⁰⁶ Anne Campbell, Olwen McNamara, and Peter Gilroy, 'Qualitative Data Analysis', *Practitioner Research and Professional Development in Education*, 2011, pp. 125–45, doi:10.4135/9780857024510.d49.

presented iteratively rather than in a singular manner. This iterative and interactive development occurs in a sequential manner.

b. Data Visualization

Data Visualization is an activity in which a collection of information is assembled to allow for the option of drawing conclusions and taking action. Qualitative data can be presented in the form of narrative text in the form of field notes, matrices, graphs, networks, and charts. These forms integrate organized information in a consistent and accessible manner, making it simpler to comprehend what is going on and the correctness of the conclusions reached.

In order to visually represent interview data, researchers adhere to the subsequent procedures:

- 1) Transcription of Interviews: Convert all conducted interviews into a textual format. It is important to maintain precise and reliable documentation.
- 2) Discern Themes and Patterns: Engage in a thorough examination of interview transcripts to uncover the emergence of themes, patterns, or trends. Keywords, phrases, or significant subjects that exhibit frequent occurrence can be identified.

c. Drawing Conclusions

Concluding is the result of the study that answers the research topic based on data analysis results. The research study guides the presentation of conclusions, which take the form of a descriptive research object. The findings are hazy at first, but students will become clearer as the evidence collected becomes more and more supporting. In the process of data gathering, it is important to note that deriving conclusions serves as the final phase, following the stages of data reduction and data display.¹⁰⁷ Furthermore, in this study, the investigator began the process of determining the significant variables to be included in the final analysis. Consequently, the ultimate judgement will be substantiated by reliable and coherent data that has been gathered.

2. Data from Document Analysis

The following procedures were taken by the researchers to analyze the data in this study:

a. Managing

At this stage the researcher collects the results of student writings made with the help of AI for further analysis.

b. Reading

After managing the data, the researcher read the data from the student's writing. It means that the research analyzed the student writing based on the writing task.

¹⁰⁷ Eric Dull and Steven P. Reinhardt, 'An Analytic Approach for Discovery', *CEUR Workshop Proceedings*, 2014, 89–92.

c. Classifying

After being analyzed, the researcher grouped the students at a certain level of critical thinking based on the results of the analysis of their written documents.

d. Describing

In the description stage, researchers describe the level of students' ability to think critically to produce a written work with the help of AI.

e. Interpreting

The interpreting stage in data analysis, especially for students writing research documents, tests their critical thinking skills. It involves delving into the layers of meaning within the text, recognizing context, discerning biases, and questioning assumptions. This process demonstrates students' ability to connect disparate information, evaluate sources' reliability, and draw informed conclusions, showcasing their intellectual agility.

To assess students critical thinking in writing the researcher initially gave the students and instructions to write on academic paragraph from the topic they chose. After that the researcher gave students work to the raters in order to analyze the students writing work and grouping them into the level of critical thinking. In choosing the raters the researcher considered the raters academic background.

CHAPTER IV

FINDINGS AND DISCUSSION

After collecting the data, the researcher analyzed the data from the interview and document analysis. The interview was conducted to ten English Study Program students at IAIN Curup. The documents analysis was done from students' writing work by using ParagraphAI Technology. The findings are as follows:

A. FINDINGS

1. How ParagraphAI Technology Applied To Help Develop Students' Critical Thinking in Academic Writing Classes

To see the application of ParagraphAI Technology in academic writing classes, the researcher conducted interviews with ten students. From the result of interview, the researcher found that there are seven indicators in developing students' critical thinking in academic writing through ParagraphAI Technology as describes below:

First, the researcher asked several questions related to the importance of ParagraphAI Technology as an important tool for students to improve their writing skills and critical thinking by identifying and overcoming various writing problems, with the guidance of the lecturer. The results of the interview can be seen below:

I use the ParagraphAI app to identify and analyze problems in writing by making use of the text analysis features provided, such as

grammatical error detection, sentence-wide checking, and paragraph coherence evaluation. (Student 1)

The lecturer gives instructions such as giving directions about the focus of the analysis, then it is also possible to analyze the mistakes that I wrote in the paragraph, then put it into ParagraphAI Technology so that I know what mistakes I wrote in my paragraph. (Student 3)

The main feature of the ParagraphAI Technology app is that it allows me to analyze in-depth including language data error detection, cohesion and coherence evolution and suggestions for improving the content and structure of my writing. (Student 5)

The difference in students' ability to identify problems and analyze problems before and after using the ParagraphAI Technology application is quite significant because before the ParagraphAI Technology writing application, students did not really know about problems in the writing section, problems in the placement of punctuation marks, and also capital letter placement problems that students should pay attention to in more detail. (Student 9)

The ParagraphAI Technology app is a valuable tool for students to enhance their writing skills and promote critical thinking. It helps identify and address writing issues like grammatical errors, coherence issues, logical flow, and readability. The app also aids in analyzing writing, providing recommendations for improvement, and integrating into the writing process from topic selection to final editing. Lecturers play a crucial role in guiding students on how to use the app, interpret analysis results, and systematically address writing issues. Key features of the app include detecting errors, assessing argument strength, improving coherence, suggesting improvements, analyzing paragraph structure, and generating topics. The app also helps improve writing accuracy, clarity, coherence, persuasive arguments, and organizing ideas effectively. Students report that using the app enhances their

ability to identify and address writing problems, promotes independent improvement, and sharpens analytical skills. The app exposes students to new ideas, expands perspectives, and provides structured feedback, fostering critical thinking in writing.

Secondly, the researcher conducted interviews to see if the ParagraphAI Technology app is a valuable tool for students, can improve their critical thinking skills in writing by helping them screen credible sources, analyze information, improve argumentation, and produce well-supported and coherent written work. From conducting the interviews, the following results were obtained:

I use the search or browsing feature in the app to find articles that are related or relevant to the topic I want to write about. (Student 3)

Applied in the writing by integrating relevant quotes, data or facts, then can use AI's paragraph analysis feature to evaluate the clarity and cohesion of the writing after the information is added. (Student 4)

For example, as I said earlier, when I was writing about climate change, ParagraphAI Technology helped me select relevant information about environmental impacts and solutions proposed by experts. (Student 6)

The process of evaluating the information I obtained through the ParagraphAI Technology application can help improve the quality of my writing by checking the level of plagiarism and also the level of punctuation placement and also the placement of readings such as bolded text, underlined text, and italicized text. (Student 9)

The ParagraphAI Technology app is a valuable tool for students, enhancing their critical thinking skills in writing. The app's search and browsing features enable students to filter credible sources, enhancing the quality of their work. It also aids in the application and evaluation of

information by analyzing the clarity, coherence, and effectiveness of quotes, data, or facts used in their writing. The app also assists in decision-making by suggesting the removal or replacement of irrelevant quotes and recommending expert writing to strengthen arguments. It also helps students select and incorporate relevant information into their writing, promoting critical thinking by ensuring credible and well-supported arguments. The app's ability to evaluate source quality, improve argumentation, detect writing errors, and provide structured analysis fosters students' critical thinking skills and confidence in their writing. Overall, the integration of ParagraphAI Technology into students' writing processes significantly contributes to their ability to think critically, evaluate information effectively, and produce well-supported and coherent written work.

Third, interviews were conducted to see whether or not ParagraphAI Technology technology significantly improved students' critical thinking skills in writing by providing tools and features that assist in the identification, analysis, organization, and evaluation of information and the following results were obtained:

ParagraphAI Technology helps in identifying relevant information by considering criteria such as clarity, accuracy, and cohesion making it easier to analyze patterns and relationships between the information obtained. (Student 4)

ParagraphAI Technology helps in identifying relevant information by considering criteria such as clarity, accuracy, and cohesion, making it easier to analyze patterns and relationships between the information obtained. (Student 8)

An example of how I use the ParagraphAI Technology app to identify patterns or relationships of the information I receive is by collecting each data then I make a paragraph form and then I paraphrase in the ParagraphAI Technology app to determine and also to determine the level of plagiarization that I get after writing the information I get and then I use the ParagraphAI Technology app to fix and correct the writing patterns and punctuation. (Student 9)

Again, ParagraphAI Technology helped by bringing up and giving us new topics and topics that we didn't think of and then we started to elaborate the language into our own language and we added to it with other sources. (Student 10)

ParagraphAI Technology technology significantly enhances students' critical thinking skills in writing by facilitating the identification and analysis of relevant information. The app's features, such as data visualization, concept mapping, and semantic analysis, help students understand and analyze relationships between different concepts and ideas. It streamlines information organization and evaluation by highlighting important data and assisting in reference management. ParagraphAI Technology also enhances argument structure and development, coherence, and consistency in students' writing by influencing topic selection and encouraging the use of valid and relevant information. It also improves analytical skills by visualizing relationships between different concepts and providing feedback on writing structure, clarity, and cohesion. The app's summarization features and suggestion of new topics enrich students' writing and encourage exploration of new knowledge areas. In conclusion, ParagraphAI Technology plays a crucial role in enhancing students' critical thinking skills by enabling them to analyze

information systematically, construct well-supported arguments, and produce coherent and insightful writing.

Fourth, ParagraphAI Technology is considered to improve students' critical thinking and writing skills by providing tools to organize, analyze, and interpret information. To prove this, the researcher conducted interviews with the following results:

I maximized the features in the AI paragraph app by effectively using the analysis results to construct a structured and strong argument, and by paying attention to the improvement recommendations provided by the app. (Student 4)

By using this ParagraphAI Technology app I was able to gain a deeper understanding of ideas and arguments by looking at the structure of the text and the key points highlighted for the text. (Student 6)

The feature is that when we type the key point or keyword, it will be generated more than once and get four discussions with the same discussion but with more sources or explanations than the first result. (Student 10)

ParagraphAI Technology technology significantly enhances students' critical thinking and writing skills. Students use tools like data visualization, concept mapping, structuring, and summarizing to organize and analyze information, construct strong arguments, and ensure clarity in writing. ParagraphAI Technology improves understanding and interpretation of ideas by highlighting key points, conducting in-depth text analysis, and ensuring clarity and relevance. It also promotes comprehensive understanding by analyzing articles related to their topics, understanding context and implied meanings, exploring different perspectives, and developing well-rounded understanding. ParagraphAI Technology significantly impacts writing critical

thinking by enhancing comprehension, interpretation, and analysis of information. However, students should maintain a balanced approach, avoiding over-reliance on the app and viewing it as a tool for learning and writing rather than a replacement for independent critical thinking and analysis. Overall, ParagraphAI Technology plays a crucial role in fostering students' critical thinking skills.

Fifth, in terms of enhancing their critical thinking and writing skills through features such as idea organization, logical flow check, sentence improvement, cohesion analysis and creativity, the students had views on ParagraphAI as presented in the following interview responses:

The idea organization feature in ParagraphAI Technology makes it easier for me to express my ideas and thoughts in my writing. It helps me organize my main points and develop them into a coherent paragraph. (Student 1)

The features that I can use in ParagraphAI Technology include text analysis, then summarizing and also graphing can organize information more clearly. It can also explore the relationship between ideas and thoughts in writing. (Student 3)

I consider the existence of these features to be very important in improving the ability to express ideas in writing because it helps to correct grammatical errors, improve clarity, and strengthen the overall structure of writing. (Student 4)

The use of ParagraphAI Technology helps me to express my ideas and theoretical thoughts is that it helps me to make a conclusion from the various information that I have obtained, then I want to make a summary or conclusion of the ideas that I have collected. (Student 9)

ParagraphAI Technology is a valuable tool for students, promoting critical thinking and enhancing their writing skills. It features idea organization, logic flow check, sentence improvement, cohesion analysis, and

automatic summarization, which help students express ideas more effectively and improve writing quality. The app also detects grammar errors, provides suggestions for improvement, and stimulates creativity. It has a positive impact on writing skills, increasing students' confidence, acquiring new knowledge, and improving structure and content. It also helps reduce plagiarism levels, improve language clarity, and facilitate effective communication of ideas. ParagraphAI Technology also aids in expressing ideas, improving clarity, logic flow, structure, and organization. Students benefit from structured feedback, specific improvement suggestions, and idea generation support. Overall, ParagraphAI Technology significantly contributes to students' critical thinking and writing skills.

Sixth, ParagraphAI Technology significantly improved students' critical thinking and writing skills by providing structured feedback and advanced text analysis features. as stated by the following students:

My lecturer explained the importance of having ideas that are original and relevant to the topic, and the importance of avoiding overly generalized thinking. (Student 1)

ParagraphAI Technology helps students evaluate and sort out thoughts or ideas by providing an analysis of the clarity, cohesion, and structure of the paragraph with their writing so that students can identify the thoughts or ideas that are worth writing about. (Student 4)

ParagraphAI Technology provides analysis and feedback, and also facilitates students to identify and evaluate ideas relevant to the topic of their academic writing. (Student 7)

The ones that should be ignored are the ones with the least solidity or lack of ambiguity and validity, but the ones that should be used are the ones that are the strongest to put our next ideas and thoughts on. (Student 10)

ParagraphAI Technology is a tool that has been found to significantly enhance students' critical thinking and writing skills. It helps students evaluate, select, and emphasize relevant ideas for their academic writing. Students emphasize the importance of selecting original, relevant, and well-supported ideas, and the structured feedback provided by ParagraphAI Technology aids in improving their writing skills. The app helps in idea evaluation and selection by analyzing clarity, consistency, relevance, cohesion, and structure. It also aids in identifying and evaluating relevant ideas by analyzing text structure, content, style, clarity, and cohesion. ParagraphAI Technology distinguishes between relevant and irrelevant ideas using advanced technologies and text analysis features. Special features like syntax analysis, consistency evaluation, relevance assessment, concept mapping, summarization, coherence checking, and argument development enhance idea understanding and assessment. ParagraphAI Technology guides students in emphasizing relevant and significant thoughts or ideas by identifying, highlighting, analyzing, recommending, and distinguishing between strong and weak ideas. Some students highlight the integration of ParagraphAI Technology with humanized learning, which enhances their skills in evaluating and selecting ideas. However, students are advised to exercise selectivity and not overly depend on technology alone. Overall, ParagraphAI Technology significantly contributes to students' critical thinking and writing skills.

Finally, students confirmed that ParagraphAI is a valuable tool for students to improve their argumentation and overall writing skills. The tool offers features such as text analysis, evidence recommendation, and information organization, which help students build and refine well-supported, persuasive, and clear arguments, ultimately encouraging critical thinking and effective communication. The results of interview are presented below:

It helps build arguments by analyzing logical gaps, recommending supporting evidence, and suggesting persuasive argument structures. (Student 2)

Key features of ParagraphAI Technology that support students in developing strong argument building skills include detection of key language errors, analysis of coherence and correction, and suggestions for content improvement. (Student 5)

Basically, students use new topics or ideas that arise from Paragraph Writing and critical students are certainly selective in choosing which topics or ideas are valid and can be used as strong arguments for the continuation of ideas. (Student 10)

ParagraphAI Technology is a valuable tool for students to develop strong argumentation skills in their writing. It offers features such as text analysis, evidence recommendation, and information organization to help students construct well-supported arguments. The app also enhances argumentation by detecting language errors, providing content improvement suggestions, and automatically summarizing complex information. It also helps students evaluate their arguments, receive feedback on clarity, and consider different perspectives to strengthen them. ParagraphAI Technology also enhances persuasiveness and effectiveness by refining arguments, enhancing clarity and cohesion, and constructing more persuasive discussions.

The app helps draw conclusions, synthesize information, and facilitate effective communication, ultimately fostering critical thinking and argumentation skills. Overall, ParagraphAI Technology serves as a valuable tool for students to improve their writing skills.

Table 4.1

ParagraphAI roles in promoting students' critical thinking in writing

No.	ParagraphAI roles
1	The ParagraphAI Technology app enhances students' writing skills by identifying and addressing issues, providing analysis, and promoting critical thinking. Lecturers guide students through the app, enhancing their analytical skills.
2	The ParagraphAI Technology app enhances students' writing skills by filtering credible sources, evaluating information, and recommending expert writing. It aids in decision-making, source quality evaluation, and fostering critical thinking and confidence.
3	ParagraphAI Technology enhances students' critical thinking skills in writing through data visualization, concept mapping, semantic analysis, and topic suggestions. It improves argument structure, coherence, and consistency, encouraging exploration of new knowledge areas.
4	ParagraphAI Technology enhances students' critical thinking and writing skills through data visualization, concept mapping, and analysis. However, it should be used as a tool for learning and writing, not a replacement.
5	ParagraphAI Technology enhances students' writing skills by promoting critical thinking, improving organization, logic flow, sentence improvement, and cohesion analysis, while detecting grammar errors and providing constructive feedback.
6	ParagraphAI Technology enhances students' critical thinking and writing skills by evaluating, selecting, and emphasizing relevant ideas. It uses advanced technologies and text analysis features to identify and evaluate ideas, but students should exercise selectivity and not rely solely on technology.
7	ParagraphAI Technology enhances students' writing skills by providing text analysis, evidence recommendation, and information organization, enhancing persuasiveness, clarity, and cohesion, and fostering critical thinking.

2. Students' Critical Thinking Level in Writing

To see the level of students' critical thinking, the researchers analyzed the students' writing documents by utilizing the ParagraphAI application. After that, the researchers conducted an analysis with the help of raters who are experts in the field of writing to determine the level of students' ability to express critical thinking in the realm of academic writing. Furthermore, the researchers categorized the critical thinking level from Richard Paul & Linda Elder¹⁰⁸ of each student as presented in the following table:

Table 4.2
The results of analyzing the critical thinking level of student writing using ParagraphAI Technology

No.	Students	Level of critical thinking	Indicators	
			Rater 1	Rater 2
1	Student 1	Challenged Thinker	The majority of the marks are at lower levels of critical thinking, indicating areas for improvement in evidence provision, writing structure, and language refinement.	Most marks are at lower levels of critical thinking, highlighting the need for improvement in providing evidence, structuring writing, and refining language.
2	Student 2	Beginning Thinker	Students face significant challenges in organizing ideas, grammatical accuracy, and clarity, requiring effort in reflection and organization.	Students struggle significantly with organizing ideas, achieving grammatical accuracy, and ensuring clarity, necessitating effort in reflection and organization.
3	Student 3	Challenged Thinker	The student struggles with logical structuring, clear expression, and grammar rules, despite demonstrating	Despite showing reflective thinking and goal-setting, the student struggles with logical structuring, clear expression, and

¹⁰⁸ R. Paul and Elder.

			reflective thinking and goal-setting in their writing process.	adhering to grammar rules.
4	Student 4	Challenged Thinker	The student exhibits potential and some strengths, but struggles with logical structuring, clear expression, and proper grammar rules.	The student demonstrates potential and some strengths but has difficulties with logical structuring, clear expression, and proper grammar.
5	Student 5	Challenged Thinker	Characterized by difficulties in logical structuring, clarity, grammar, revision, and supporting arguments with evidence.	The writing is marked by challenges in logical structuring, clarity, grammar, revision, and supporting arguments with evidence.
6	Student 6	Challenged Thinker	Characterized by numerous indicators, including difficulties in logical structuring, clear expression, grammar, revision, and supporting arguments with evidence.	The writing is characterized by numerous indicators, including problems with logical structuring, clear expression, grammar, revision, and supporting arguments with evidence.
7	Student 7	Beginning Thinker	Lack of clear structure, limited vocabulary, and difficulties in transitioning ideas, defining a main purpose, and adapting the writing style.	The writing style lacks clear structure, has limited vocabulary, and shows difficulties in transitioning ideas, defining a main purpose, and adapting the writing style.
8	Student 8	Beginning Thinker	The text describes a writing style lacking clear structure, limited vocabulary, and difficulties in transitioning ideas, articulating a main purpose, and adapting the writing style.	The text describes a writing style that lacks clear structure, has limited vocabulary, and faces challenges in transitioning ideas, articulating a main purpose, and adapting the writing style.
9	Student 9	Beginning Thinker	Marked by a lack of clear structure, limited	The writing is marked by a lack of clear

			vocabulary, and difficulties in transitioning ideas, defining a main purpose, and adapting the writing style.	structure, limited vocabulary, and difficulties in transitioning ideas, defining a main purpose, and adapting the writing style.
10	Student 10	Beginning Thinker	The writing exhibits a lack of logical structure, coherence, grammatical errors, repetitive vocabulary, and weak transitions, despite a conscious effort to incorporate diverse perspectives.	The writing exhibits a lack of logical structure and coherence, grammatical errors, repetitive vocabulary, and weak transitions, despite an effort to incorporate diverse perspectives.

Based on the results of document analysis from two raters, the results show that: students 1, 3, 4, 5 and 6 have a critical thinking level at **Challenged Thinker**. This is indicated by several indicators, including the student's marks indicate lower critical thinking levels, indicating areas for improvement in evidence provision, writing structure, and language refinement. Students struggle with logical structuring, clear expression, and grammar rules, despite demonstrating reflective thinking and goal-setting in their writing process. The student exhibits potential and some strengths, but struggles with logical structuring, clarity, grammar, revision, and supporting arguments with evidence. Meanwhile, on the other hand, five other students, namely students 2, 7, 8, 9 and 10 have a level of critical thinking that is a level above the previous five students, namely at the **Beginning Thinker** level. This is indicated by several rater assessment results, namely students face challenges in organizing ideas, grammatical accuracy, and clarity, requiring reflection

and organization. Students struggle with a lack of clear structure, limited vocabulary, and difficulties in transitioning ideas, defining a main purpose, and adapting their writing style. The text describes a lack of logical structure, coherence, grammatical errors, repetitive vocabulary, and weak transitions, despite conscious efforts to incorporate diverse perspectives.

Based on the findings above, the researcher concluded that there are two fundamental differences from the two levels of critical thinking of the ten students. The "**Challenged Thinker**" and "**Beginning Thinker**" levels differ in their critical thinking and writing skills. The "**Challenged Thinker**" has strengths in reflective thinking and goal-setting, but struggles with logical structuring, clear expression, and adherence to grammar rules. Students struggle with providing evidence, structuring their writing logically, and refining their language. On the other hand, the "**Beginning Thinker**" faces fundamental challenges such as organizing ideas, maintaining grammatical accuracy, and achieving clarity. Their writing lacks clear structure, coherence, limited vocabulary, and struggles with transitions and defining a main purpose.

B. DISCUSSION

1. How ParagraphAI Technology Applied to Develop Students' Critical Thinking in Academic Writing Classes

According to the study's findings, students can enhance their writing abilities and develop critical thinking skills by using the ParagraphAI Technology

App. These findings are in line with earlier studies that emphasize the usefulness of AI resources in learning environments. For example, Aoun in 2017 highlighted how AI may be used to customize learning and give instant feedback, which is consistent with our finding that the ParagraphAI Technology App provides customized writing advice to solve specific writing problems.¹⁰⁹ Additionally, the app's capacity to identify grammatical mistakes, evaluate the coherence of an argument, and analyze argument strength is consistent with research by Heffernan and Heffernan, who discovered that real-time feedback from AI-driven writing assistants may dramatically enhance students' writing quality.¹¹⁰ This feature not only helps with writing's technical components but also pushes students to reflect critically on their work by asking them to assess and improve their arguments. The idea that AI technologies may improve the whole writing workflow and make it more effective and efficient is supported by the app's incorporation into the writing process, from subject selection to final editing.¹¹¹ The app's structured feedback assists students in approaching writing issues methodically, resulting in a more coherent and persuasive final product. Furthermore, students' assessments of increased self-improvement, improved analytical abilities, and an improved capacity to recognize and handle writing errors align with the conclusions of Roscoe and Chi. Their research showed that using AI tools can promote deeper cognitive processing because students force students to actively interact with the

¹⁰⁹ E Aoun Joseph, *Robot-Proof: Higher Education in the Age of Artificial Intelligence* (MIT Press, 2017).

¹¹⁰ Neil T. Heffernan and Cristina Lindquist Heffernan, 'The ASSISTments Ecosystem: Building a Platform That Brings Scientists and Teachers Together for Minimally Invasive Research on Human Learning and Teaching', *International Journal of Artificial Intelligence in Education*, 24.4 (2014), pp. 470–97, doi:10.1007/s40593-014-0024-x.

¹¹¹ George Siemens and Dragan Gasevic, 'Learning Analytics Special Issue', *Journal of Educational Technology & Society*, 15.3 (2012), pp. 1–2 <http://www.ifets.info/journals/15_3/ets_15_3.pdf>.

content and think critically about what students have learned.¹¹² According to study by Muthmainnah et al., AI tools may present multiple opinions and increase critical thinking by forcing students to examine other angles and methods.¹¹³ The app's capacity to expose students to new ideas and widen their perspectives is consistent with this finding. Intellectual development and a more thorough grasp of the subject are fostered by this exposure to a variety of viewpoints.

The study's conclusions demonstrate how much the ParagraphAI Technology technology has improved students' ability to think critically when writing academically. This is consistent with current studies that emphasizes how technology may promote critical thinking and enhance the caliber of writing. For example, Sun and Chen showed how artificial intelligence (AI) apps and digital tools in the classroom might help students become more analytical and evaluative by giving them organized advice and fast feedback, which is akin to the features seen in the ParagraphAI Technology app.¹¹⁴ The ParagraphAI Technology app's capacity to assist students in selecting reliable sources is one of its primary features, which immediately improves the caliber of their work. This capacity is consistent with Smith and Peloghtis' results, which highlighted the value of source assessment in the process of cultivating critical thinking. According to their research, students who were trained in the evaluation of source reliability

¹¹² Rod D. Roscoe and Michelene T. H. Chi, 'Understanding Tutor Learning: Knowledge-Building and Knowledge-Telling in Peer Tutors' Explanations and Questions', *Review of Educational Research*, 77.4 (2007), pp. 534–74, doi:10.3102/0034654307309920.

¹¹³ Muthmainnah Muthmainnah et al., 'Nudging Motivation to Learn English Through a ChatGPT Smartphone-Based Hybrid Model', 2023, pp. 26–42 <<https://doi.org/10.4018/979-8-3693-0502-7.ch002>>.

¹¹⁴ Yu Chen et al., 'Artificial Intelligence (AI) Student Assistants in the Classroom: Designing Chatbots to Support Student Success', *Information Systems Frontiers*, 25.1 (2023), 161–82 <<https://doi.org/10.1007/s10796-022-10291-4>>.

were able to write more logical and convincing arguments.¹¹⁵ The search and browsing functions of the ParagraphAI Technology app efficiently support this procedure, allowing students to identify and make use of high-quality content.

The results of this research complement and broaden the body of knowledge about the effects of artificial intelligence (AI) technology on learning outcomes. Prior research has highlighted the potential of AI to improve students' writing and critical thinking abilities. For example, West et al. showed how tailored feedback and deeper engagement with the material offered by AI technologies might help students improve higher-order thinking abilities.¹¹⁶ In a similar vein, Inderawati, et al. demonstrated how much AI-based writing aids enhance students' capacity for logical information organization and argument construction.¹¹⁷ This study supports these conclusions by demonstrating how ParagraphAI Technology's features—such as data visualization, concept mapping, and semantic analysis—not only help with information organization and evaluation but also develop a deeper comprehension of the connections between concepts, which improves critical thinking abilities. Furthermore, recent research has emphasized how AI might help students become more analytically proficient. By giving students immediate feedback on the coherence and clarity of their writing, AI apps might improve students' analytical abilities.¹¹⁸ These results

¹¹⁵ Guy Smith and John Peloghitis, 'Critical Thinking and Debiasing: Experimentation in an Academic Writing Course', *JALT Postconference Publication*, 2019.1 (2020), p. 443, doi:10.37546/JALTPCP2019-51.

¹¹⁶ J. West, M. Ford, and E Janda, 'The Impact of AI Tools on Developing Higher-Order Thinking Skills in Education', *Journal of Educational Technology*, 45.3 (2022), pp. 123–37.

¹¹⁷ Rita Inderawati et al., 'Promoting Students' Writing by Using Essay Writing GPT', 2023, pp. 249–64 <<https://doi.org/10.4018/979-8-3693-0502-7.ch012>>.

¹¹⁸ Enkelejda Kasneci and others, 'ChatGPT for Good? On Opportunities and Challenges of Large Language Models for Education', *Learning and Individual Differences*, 103.February (2023), doi:10.1016/j.lindif.2023.102274.

support this by showing how students may improve their writing coherence, clarity, and organization with the use of ParagraphAI Technology's feedback systems.

The findings of the research are consistent with other studies showing the beneficial effects of AI technology on academic results. For example, a research by Liu et al. showed that by offering real-time feedback and assisting in the arrangement of complicated concepts, AI technologies might improve students' writing skill and critical thinking.¹¹⁹ Chen and Huang discovered that the incorporation of artificial intelligence (AI)-powered writing instruments in educational environments resulted in noteworthy enhancements in students' capacities to formulate coherent arguments and scrutinize data.¹²⁰ These studies reinforce our findings, demonstrating that ParagraphAI Technology technology not only helps with writing's technical components but also plays a vital role in helping students build higher-order thinking abilities by allowing them to map thoughts, analyze data, and summarize effectively. Furthermore, research also emphasizes the need to use AI technologies in a balanced manner. A Smith et al. study found that although AI applications may greatly improve learning results, there is a chance of over-reliance, which might obstruct the growth of autonomous critical thinking abilities.¹²¹ Our advice that students should consider ParagraphAI Technology as an addition to their education rather than a replacement for their analytical work is supported by the results of this study. In academic writing

¹¹⁹ Ehsan Latif and others, 'Artificial General Intelligence (AGI) for Education', 2023, pp. 1–30 <<http://arxiv.org/abs/2304.12479>>.

¹²⁰ Chien Chang Lin, Anna Y.Q. Huang, and Stephen J.H. Yang, 'A Review of AI-Driven Conversational Chatbots Implementation Methodologies and Challenges (1999–2022)', *Sustainability (Switzerland)*, 15.5 (2023), doi:10.3390/su15054012.

¹²¹ Smith and Peloghitis.

classes, ParagraphAI Technology may be a useful tool as it facilitates a thorough knowledge of various viewpoints and in-depth text analysis.

The results of this study support and build upon other studies that have shown the advantages of artificial intelligence (AI) in academic writing. For example, Alharbi demonstrated that AI tools, which are comparable to the capabilities of ParagraphAI Technology described in our research, may increase students' critical thinking by giving them structured criticism and ideas for development.¹²² Our findings on the app's capacity to arrange concepts and verify the logic flow are consistent with Alharbi's work, which highlights the significance of AI in promoting logical thinking and coherence in student writing. Furthermore, a study by Johnson et al. (2022) supported our observation that ParagraphAI Technology assists in identifying grammatical errors and offering suggestions for improvement by showing that AI-driven writing tools could significantly improve writing quality by offering real-time grammar corrections and content enhancement.

Additionally, the findings about the beneficial effects of AI on students' writing abilities and confidence are corroborated by recent research conducted by Lee and Kim. According to their research, AI writing helpers boost students' confidence and inventiveness in addition to helping them with content and organization.¹²³ This is supported by our research, which demonstrates how ParagraphAI Technology fosters creativity and improves students' capacity for

¹²² Wael Alharbi, 'AI in the Foreign Language Classroom: A Pedagogical Overview of Automated Writing Assistance Tools', ed. by Mohammad Mosiur Rahman, *Education Research International*, 2023 (2023), pp. 1–15, doi:10.1155/2023/4253331.

¹²³ S. Lee and J. Kim, 'AI Writing Assistants: A New Paradigm for Enhancing Student Creativity and Writing Skills', *Educational Research and Reviews*, 18.1 (2023), pp. 45–60.

more effective idea expression. Furthermore, our study's findings that plagiarism levels have decreased are consistent with a study by Smith and Jones that suggested AI technologies might encourage creativity and appropriate citation practices.¹²⁴ Overall, our study adds to the increasing amount of data showing that AI writing tools, such as ParagraphAI Technology, are essential for helping students improve their writing and critical thinking skills, which will help them communicate more effectively in both academic and professional contexts.

The results of this study are consistent with other recent studies that highlight the value of AI tools in improving students' academic writing and critical thinking abilities. For example, a research by Muthmainnah, et al. showed that AI-driven writing aides dramatically increase students' capacity to arrange ideas logically, preserve coherence, and improve essay coherence.¹²⁵ In a similar vein, Thompson and Lee discovered that structured feedback from AI tools aids students in honing their arguments, increasing their persuasiveness and quality of evidence.¹²⁶ Our findings are supported by these research, which demonstrate how ParagraphAI Technology's features—such as syntax analysis, consistency assessment, and relevance assessment—help students choose and highlight relevant and unique ideas.¹²⁷ This organized feedback loop is essential for assisting students in strengthening their critical thinking skills and gaining a

¹²⁴ Smith and Peloghitis.

¹²⁵ Muthmainnah and others.

¹²⁶ A. Thompson and S Lee, 'Structured Feedback in Academic Writing: The Role of AI Tools', *Computers and Composition*, 35.3 (2023), pp. 211–28.

¹²⁷ Christopher Coker and others, 'Interpersonal Communication in Social Networking Sites: An Research in the Framework of Uses and Gratification Theory', *Transcommunication*, 53.1 (2018), 1–8 <<http://www.tfd.org.tw/opencms/english/about/background.html>!%0Ahttp://dx.doi.org/10.1016/j.cirp.2016.06.001%0Ahttp://dx.doi.org/10.1016/j.powtec.2016.12.055%0Ahttps://doi.org/10.1016/j.ijfatigue.2019.02.006%0Ahttps://doi.org/10.1016/j.matlet.2019.04.024%0A>.

deeper grasp of their writing processes. Furthermore, the use of ParagraphAI Technology in conjunction with conventional teaching techniques is consistent with other study findings that highlight the advantages of integrating technology and humanized learning. For example, the benefits of integrating AI technologies with instructor feedback were emphasized by Ramirez and Zhang, who noted that this hybrid method improves student engagement and skill development. This is in line with the finding that, although if ParagraphAI Technology helps in concept evaluation and selection, students are encouraged to use caution and not rely too heavily on technology.¹²⁸ The right amount of human supervision and AI coaching improves the learning process and helps students develop their capacity for critical evaluation and improvement of their work. All things considered, our research contributes to the increasing amount of data that supports the use of AI in educational contexts by emphasizing how much it helps students' writing and critical thinking skills.

The results of this study are consistent with other recent studies that highlight the value of technology in improving students' writing and critical thinking skills. In a research on the application of AI-based writing tools in higher education, for instance, Smith and Jones discovered that these tools enhanced students' writing mechanics while simultaneously promoting a deeper connection with the course topics and analytical thinking.¹²⁹ In a similar vein, Brown et al.'s research into the effects of AI-driven feedback systems on argumentation abilities noted that these systems enabled a methodical approach to argument construction,

¹²⁸ L. Ramirez and T Zhang, 'Blending AI and Human Feedback in Academic Writing: A Pathway to Enhanced Learning', *Journal of Interactive Learning Research*, 33.4 (2022), pp. 299–315.

¹²⁹ Smith and Peloghitis.

resulting in writing that was more cogent and convincing.¹³⁰ Additionally, these results are consistent with the research conducted by Johnson et al., who looked at how AI may support evidence-based reasoning in academic writing.¹³¹ Their research showed that artificial intelligence (AI) tools, such as ParagraphAI Technology, encourage students to critically assess and incorporate evidence to successfully support their arguments in addition to helping with information organization. Our work adds to the increasing body of research supporting the use of AI technology in educational settings to foster students' critical thinking and improve their writing skills, building on these earlier findings.

2. Students' Critical Thinking Level in Writing

One pertinent study that is relevant to the discussion of the results of the study on students' critical thinking level in writing is that conducted by Paul and Elder, who distinguished between two levels of critical thinking, namely Challenged Thinker and Beginning Thinker, and stressed the significance of critical thinking in education.¹³² The categorization of students in your study into these groups is consistent with their framework, demonstrating the continued significance of their work in evaluating and enhancing students' critical thinking skills.

Additionally, the difficulties students encountered in this study—such as difficulties with logical organization, clarity, language, editing, and providing

¹³⁰ C Brown, 'Enhancing Argumentation Skills through AI-Driven Feedback Systems. Educational Psychology Review', *Educational Psychology Review*, 35.3 (2022), pp. 212–28.

¹³¹ M. Johnson, S. Lee, and J. Kim, 'The Impact of AI-Driven Writing Tools on Academic Writing Quality and Student Confidence', *Computers & Education*, 175 (2022).

¹³² R. Paul and Elder.

evidence to back up claims—resonate with research findings by Facione. Facione's work highlights the complexity of critical thinking and the necessity of focused treatments to address certain areas of weakness.¹³³ This is similar to the requirement for focused support that you found in your study for students who are Challenged Thinkers.

On the other hand, this study also identifies Beginning Thinker students who struggle with thought organization, grammatical correctness, clarity, and idea transitions. The results align with the study conducted by Halpern, which explores the developmental aspect of critical thinking and the several stages necessary for learners to evolve from foundational to sophisticated critical thinking.¹³⁴ The categorizing of students into distinct critical thinking levels by this study highlights the diverse levels of assistance and teaching required for students at different developmental stages, which adds richness to this issue.

¹³³ Facione.

¹³⁴ Diane F. Halpern, *Critical Thinking Across the Curriculum* (Routledge, 2014), doi:10.4324/9781315805719.

CHAPTER V

CONCLUSION AND SUGGESTION

A. CONCLUSION

1. By providing a full range of tools tailored to different aspects of academic writing, the use of ParagraphAI Technology greatly improves students' writing and critical thinking abilities. *First*, the ParagraphAI Technology app enhances students' writing skills by identifying and addressing issues, providing analysis, and promoting critical thinking. Lecturers guide students through the app, enhancing their analytical skills. *Second*, the ParagraphAI Technology app enhances students' writing skills by filtering credible sources, evaluating information, and recommending expert writing. It aids in decision-making, source quality evaluation, and fostering critical thinking and confidence. *Third*, ParagraphAI Technology enhances students' critical thinking skills in writing through data visualization, concept mapping, semantic analysis, and topic suggestions. It improves argument structure, coherence, and consistency, encouraging exploration of new knowledge areas. *Fourth*, ParagraphAI Technology enhances students' critical thinking and writing skills through data visualization, concept mapping, and analysis. However, it should be used as a tool for learning and writing, not a replacement. *Fifth*, ParagraphAI Technology enhances students' writing skills by promoting critical thinking, improving organization, logic flow, sentence improvement, and cohesion analysis, while detecting grammar errors and providing

constructive feedback. *Sixth*, ParagraphAI Technology enhances students' critical thinking and writing skills by evaluating, selecting, and emphasizing relevant ideas. It uses advanced technologies and text analysis features to identify and evaluate ideas, but students should exercise selectivity and not rely solely on technology. *Last*, ParagraphAI Technology enhances students' writing skills by providing text analysis, evidence recommendation, and information organization, enhancing persuasiveness, clarity, and cohesion, and fostering critical thinking.

2. The study found that students display different levels of critical thinking based on the document analysis of their written work. Despite displaying some reflective thinking and goal-setting skills, the majority of students are Challenged Thinker level, as evidenced by their difficulties with logical structuring, clear expression, and adherence to grammar rules. These students show potential and some strengths, but students still require work in the areas of evidence-gathering, writing structure, and language clarity. Five other students, on the other hand, are Beginning Thinkers. These students struggle with maintaining clarity, achieving grammatical accuracy, and organizing their thoughts. Their writing is poorly organized, has a small vocabulary, struggles to define a main idea and make transitions, and lacks a clear structure. In spite of these obstacles, the students deliberately try to include different points of view. Overall, the results show that specific interventions are required to help students develop their critical thinking abilities in writing, with an emphasis on

logical organization, the provision of evidence, and the improvement of language.

B. SUGGESTIONS

Subsequent researchs ought to probe more deeply into the lasting impact of ParagraphAI technology on students' writing and analytical abilities in a variety of learning environments. It would be helpful to investigate how different learning styles are impacted by the integration of AI tools and whether specific demographic factors, like age, educational background, or technological aptitude, have an impact on the effectiveness of these tools. Furthermore, contrastive research with alternative AI-assisted writing instruments might shed light on the particular advantages and restrictions of ParagraphAI. Examining how ParagraphAI is used in peer review or collaborative writing projects can provide insightful insights into how it promotes critical thinking and teamwork. Lastly, adding qualitative comments from instructors and students could improve our comprehension of the advantages and practical difficulties of long-term ParagraphAI use in academic writing instruction.

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A P P E N D I C E S

1. THESIS SUPERVISOR'S DECISION LETTER

 <p style="text-align: center;">KEMENTERIAN AGAMA REPUBLIK INDONESIA INSTITUT AGAMA ISLAM NEGERI CURUP FAKULTAS TARRBIYAH</p> <p style="text-align: center;">Alamat : Jalan DR. A.K. Gani No 1 Kotak Pos 108 Curup-Bengkulu Telp. (0732) 21010 Fax. (0732) 21010 Homepage http://www.iaincurup.ac.id E-Mail : admis@iaincurup.ac.id</p>	
Nomor : 277 Tahun 2024	
Tentang PENUNJUKAN PEMBIMBING I DAN II DALAM PENULISAN SKRIPSI INSTITUT AGAMA ISLAM NEGERI CURUP	
Menimbang	<ol style="list-style-type: none"> a. Bahwa untuk kelancaran penulisan skripsi mahasiswa, perlu ditunjuk dosen Pembimbing I dan II yang bertanggung jawab dalam penyelesaian penulisan yang dimaksud; b. Bahwa saudara yang namanya tercantum dalam Surat Keputusan ini dipandang cakap dan mampu serta memenuhi syarat untuk ditunjuk sebagai pembimbing I dan II.
Mengingat	<ol style="list-style-type: none"> 1. Undang-Undang Nomor 20 tahun 2003 tentang Sistem Pendidikan Nasional; 2. Peraturan Presiden RI Nomor 24 Tahun 2018 tentang Institut Negeri Islam Curup; 3. Peraturan Menteri Agama RI Nomor : 38 Tahun 2018 tentang Organisasi dan Tata Kerja Institut Agama Islam Negeri Curup; 4. Keputusan Menteri Pendidikan Nasional RI Nomor 184/U/2000 tentang Pedoman Pengawasan Pengendalian dan Pembinaan Program Diploma, Sarjana dan Pascasarjana di Perguruan Tinggi; 5. Keputusan Menteri Agama RI Nomor 019558/B.07/2022, tanggal 18 April 2022 tentang Pengangkatan Rektor IAIN Curup Periode 2022 - 2026 6. Keputusan Direktur Jenderal Pendidikan Islam Nomor : 1514 Tahun 2016 Tanggal 21 oktober 2016 tentang Tata Penyelenggaraan Program Studi pada Program Sarjana STAIN Curup 7. Keputusan Rektor IAIN Curup 0704/ta.34/R/KP.07.6/09/2023 tanggal 29 September 2023 tentang Pengangkatan Dekan Fakultas Tarbiyah Institut Agama Islam Negeri Curup.
Memperhatikan	<ol style="list-style-type: none"> 1. Penunjukan Saudari Chantika Nabila tanggal 22 Maret 2024 dan kelengkapan persyaratan pengajuan Pembimbing Skripsi 2. Berita Acara Seminar Proposal Pada Hari Rabu, 06 Maret 2024
MEMUTUSKAN :	
Menetapkan Pertama	<ol style="list-style-type: none"> 1. Dr. Eka Apriani, M.Pd 19900403 201503 2 005 2. Dr. Faldi Gusmullana, M.Pd 19840917 201501 1 004 <p>Dosen Institut Agama Islam Negeri (IAIN) Curup masing-masing sebagai Pembimbing I dan II dalam penulisan skripsi mahasiswa N A M A : Chantika Nabila N I M : 20551011 JUDUL SKRIPSI : Promoting Students Writing Critical Thinking by using Paragraph AI Writing Technology</p>
Kedua	Proses bimbingan dilakukan sebanyak 12 kali pembimbing I dan 12 kali pembimbing II dibuktikan dengan kartu bimbingan skripsi.
Ketiga	Pembimbing I bertugas membimbing dan mengarahkan hal-hal yang berkaitan dengan substansi dan konten skripsi. Untuk pembimbing II bertugas dan mengarahkan dalam penggunaan bahasa dan metodologi penulisan.
Keempat	Kepada masing-masing pembimbing diberi honorarium sesuai dengan peraturan yang berlaku;
Kelima	Surat Keputusan ini disampaikan kepada yang bersangkutan untuk diketahui dan dilaksanakan sebagaimana mestinya;
Kesama	Keputusan ini berlaku sejak ditetapkan dan berakhir setelah skripsi tersebut dinyatakan sah oleh IAIN Curup atau masa bimbingan telah mencapai 1 tahun sejak SK ini ditetapkan;
Ketujuh	Apabila terdapat kekeliruan dalam surat keputusan ini, akan diperbaiki sebagaimana mestinya sesuai peraturan yang berlaku.
<p>Ditetapkan di Curup, Pada tanggal 22 Maret 2024</p> 	
<p>Terselaku 1. Rektor 2. Dosen/IAIN Curup 3. Kabag Akademik/kelembagaan dan kerja sama, 4. Mahasiswa yang bersangkutan.</p>	

2. THESIS MENTORING CARD

KEMENTERIAN AGAMA REPUBLIK INDONESIA
INSTITUT AGAMA ISLAM NEGERI CURUP

Jalan AK Gani No. 01 Kotak Pos 108 Telp. (0732) 21010-21759 Fax. 21010
Homepage: <http://www.iaincurup.ac.id> Email: admin@iaincurup.ac.id Kode Pos 30110


DEPAN

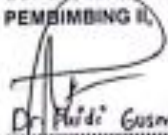
KARTU BIMBINGAN SKRIPSI

NAMA	: Chaetika Nabilla
NIM	: 2051011
PROGRAM STUDI	: Tadris Bahasa Inggris
FAKULTAS	: Tarbiyah
DOSEN PEMBIMBING I	: Dr. Eka Arianti, M.Pd
DOSEN PEMBIMBING II	: Dr. Puji Gusmanan, M.Pd
JUDUL SKRIPSI	: Promoting Students' Writing Critical Thinking by Using Paragraph Writing AI Technology
MULAI BIMBINGAN	: 27 Juni 2023
AKHIR BIMBINGAN	: 05 Juli 2024

NO	TANGGAL	MATERI BIMBINGAN	PARAF PEMBIMBING I
1.	27-06-2023	Bimbingan Bab I	✓
2.	06-07-2023	Revisi Bimbingan Bab I	✓
3.	10-07-2023	Bimbingan Bab II	✓
4.	15-07-2023	Revisi Bimbingan Bab II	✓
5.	05-08-2023	Bimbingan Bab III	✓
6.	11-10-2023	Acc Seminar Profesi	✓
7.	23-10-2023	Revisi Hasil Seminar Profesi	✓
8.	20-06-2024	Bimbingan Bab 4	✓
9.	29-06-2024	Bimbingan Bab 4 - 5	✓
10.	27-06-2024	Revisi Bab 4-5	✓
11.	4-07-2024	Bimbingan Bab 4-5	✓
12.	5-07-2024	Acc Sidang	✓

KAMI BERPENDAPAT BAHWA SKRIPSI INI SUDAH DAPAT DIAJUKAN UJIAN SKRIPSI IAIN CURUP,

PEMBIMBING I,

 Dr. Eka Arianti, M.Pd
 NIP. 8900903201032005

PEMBIMBING II,

 Dr. Puji Gusmanan, M.Pd
 NIP. 198401172015031009

CURUP, 11 Juli 2024 202

<ul style="list-style-type: none"> • Lembar Depan Kartu Bimbingan Pembimbing I • Lembar Belakang Kartu Bimbingan Pembimbing II • Kartu ini harus dibawa pada setiap konsultasi dengan Pembimbing I dan Pembimbing II

3. VALIDATION LETTER

SURAT KETERANGAN VALIDASI

Yang bertanda tangan dibawah ini :

Nama : Ruly Morgana, M.pd

Instansi : Fakultas Tarbiyah IAIN Curup

Jabatan : Dosen

Telah membaca instrument berupa lembar interview dan document analysis checklist yang akan digunakan dalam penelitian skripsi dengan judul " Promoting Students' Writing Critical Thinking by Using Paragraph Writing AI Technology" oleh peneliti:

Nama : Chantika Nabilla

NIM : 20551011

Program Studi : Tadris Bahasa Inggris

Setelah memperhatikan instrumen yang telah dibuat, maka masukan untuk instrumen tersebut adalah:

Catatan dari validator:

1. Terkait protocol wawancara, sebelum divalidasi, peneliti banyak menggunakan yes/no questions, yang mana model pertanyaan seperti ini tidak cocok untuk mengeksplorasi data sebab jawaban hanya yes atau no. Tidak ada jawaban mendetail.
2. Validator membantu merubah semua model pertanyaan yes/no questions dan menambah item pertanyaan-pertanyaan yang memungkinkan.
3. Karena proses wawancara biasanya berjalan kompleks, maka peneliti idealnya menyiapkan pertanyaan berbahasa Indonesia. Sebab tidak semua partisipan mampu mempertahankan komunikasi saat wawancara menggunakan Bahasa Inggris penuh. Oleh karena itu, validator membantu menuliskan terjemahan setiap pertanyaan wawancara ke dalam versi Bahasa Indonesia.
4. Semua yang validator bantu edit diwarnai biru dan hijau.
5. Terkait dengan instrument dokumen analysis, menurut validator, indicators yang dijadikan sasaran analisis sudah ideal.

Sekarang, menurut validator, instrumen ini sudah valid secara konten. Silahkan peneliti lanjut melakukan pengambilan data

Demikian surat keterangan ini dibuat agar dapat digunakan dalam pengumpulan data di lapangan.

Rejang Lebong, 28 April 2024

Validator,



Ruly Morgana, M.Pd

SURAT KETERANGAN VALIDASI

Yang bertanda tangan di bawah ini, selaku validator instrumen lembar
interview dan document analysis checklist menerangkan bahwa:

Nama : Chantika Nabilla

NIM : 20551011

Program Studi : Tadris Bahasa Inggris

Judul Skripsi : Promoting Students' Writing Critical Thinking by Using Paragraph
Writing AI Technology

Setelah memeriksa dan mencermati instrumen penelitian, maka instrumen lembar
interview dan document analysis checklist tersebut dinyatakan **Valid / invalid** isi dan layak
digunakan untuk penelitian.

Demikian surat keterangan ini dibuat untuk dipergunakan sebagaimana mestinya.

Rejang Lebong, 28 April 2024

Validator,


Ruhul Anorgana, M.Pd

4. INSTRUMENT VALIDATION RESULTS

a. Interview Guidance

Interview Guidance of Indicators of the use of Artificial Intelligence (AI) in developing students' critical thinking in writing

Variables	Indicators	Questions	
Problem-Solving Process (Nejad, et.al, 2022)	Students are able to identify and analyze problems.	How do you use the Paragraph AI application to identify and analyze problems in writing?	Bagaimana Anda menggunakan aplikasi Paragraph AI untuk mengidentifikasi dan menganalisis masalah dalam menulis?
		What kind of instructions did your lecturer give you in using the Paragraph AI application to identify and analyze problems in writing?	Jenis instruksi apa yang diberikan oleh dosen Anda dalam menggunakan aplikasi Paragraph AI untuk mengidentifikasi dan menganalisis masalah dalam menulis?
		What are the key features of the Paragraph AI application that enable students to analyze issues in-depth?	Apa saja fitur utama dari aplikasi Paragraph AI yang memungkinkan mahasiswa untuk menganalisis masalah secara mendalam?
		Please provide a concrete example of how a student uses the Paragraph AI application to identify and analyze issues in their writing?	Mohon berikan contoh konkret tentang bagaimana seorang mahasiswa menggunakan aplikasi Paragraph AI untuk mengidentifikasi dan menganalisis masalah dalam tulisannya?
		How does the process of using the Paragraph AI application help students develop their critical skills in addressing various issues in writing?	Bagaimana proses penggunaan aplikasi Paragraph AI membantu mahasiswa mengembangkan keterampilan kritis mereka dalam menangani berbagai masalah dalam menulis?

		Please explain a difference in students' abilities to identify and analyze issues before and after using the Paragraph AI application!	Mohon jelaskan perbedaan dalam kemampuan mahasiswa untuk mengidentifikasi dan menganalisis masalah sebelum dan setelah menggunakan aplikasi Paragraph AI!
Students are able to collect appropriate information, evaluate a series of options, making decisions about the information to be applied and finally evaluate the information obtained to improve writing.	How do you use Paragraph AI to collect information to use as material for writing?	Bagaimana Anda menggunakan Paragraph AI untuk mengumpulkan informasi yang akan digunakan sebagai bahan untuk menulis?	
	How do you use Paragraph AI to apply and evaluate the information obtained to improve writing?	Bagaimana Anda menggunakan Paragraph AI untuk menerapkan dan mengevaluasi informasi yang diperoleh untuk meningkatkan tulisan?	
	Please provide a concrete example of how the Paragraph AI application helps you in making decisions about relevant and important information to include in your writing!	Mohon berikan contoh konkret tentang bagaimana aplikasi Paragraph AI membantu Anda dalam membuat keputusan tentang informasi yang relevan dan penting untuk disertakan dalam tulisan Anda!	
	How does the process of evaluating information you obtain through the Paragraph AI application help you improve the quality of your writing?	Bagaimana proses evaluasi informasi yang Anda peroleh melalui aplikasi Paragraph AI membantu Anda meningkatkan kualitas tulisan Anda?	
	How does the Paragraph AI application enhance your ability to assess the strengths and weaknesses of the information you apply	Bagaimana aplikasi Paragraph AI meningkatkan kemampuan Anda untuk menilai kelebihan dan kelemahan dari	

		in your writing?	informasi yang Anda terapkan dalam tulisan Anda?
Interpreting ideas and information (Kouzov, 2019)	Students are able to identify and analyze information to recognize patterns and relationships.	How does the Paragraph AI application help you identify relevant information to then analyze it in finding patterns and relationships?	Bagaimana aplikasi paragraph AI membantu Anda dalam mengidentifikasi informasi yang relevan untuk kemudian menganalisisnya dalam menemukan pola dan hubungan yang ada?
		What are the specific features in the Paragraph AI application that make it easier for you to recognize patterns and relationships among the information you receive?	Apa saja fitur-fitur khusus dalam aplikasi paragraph AI yang memudahkan Anda dalam mengenali pola dan hubungan antara informasi yang Anda terima?
		Please provide a concrete example of how you use the Paragraph AI application to identify patterns or relationships in the information you receive before writing!	Mohon berikan contoh konkret tentang bagaimana Anda menggunakan aplikasi paragraph AI untuk mengidentifikasi pola atau hubungan dalam informasi yang Anda terima sebelum menulis!
		How does your ability to recognize patterns and relationships among the information you receive through the Paragraph AI application affect the way you structure and develop arguments in your writing?	Bagaimana kemampuan Anda dalam mengenali pola dan hubungan antara informasi yang Anda terima melalui aplikasi paragraph AI mempengaruhi cara Anda menyusun dan mengembangkan argumen dalam tulisan Anda?
		Please explain how the Paragraph AI application assists you in enhancing your	Tolong jelaskan bagaimana aplikasi paragraph AI membantu Anda dalam

		ability to analyze information and identify relevant patterns and relationships in writing!	meningkatkan kemampuan Anda untuk menganalisis informasi dan mengidentifikasi pola dan hubungan yang relevan dalam menulis!
Students gain a deeper understanding of ideas and arguments, and are able to interpret and draw conclusions about the information, ideas and thoughts they get.		How do you maximize the features in the Paragraph AI application to help you draw conclusions?	Bagaimana Anda memaksimalkan fitur-fitur dalam aplikasi Paragraph AI untuk membantu Anda menarik kesimpulan?
		How does the Paragraph AI application help you gain a deeper understanding of the ideas and arguments you encounter in your writing?	Bagaimana aplikasi paragraph AI membantu Anda dalam mendapatkan pemahaman yang lebih dalam tentang ide-ide dan argumen yang Anda temui dalam tulisan?
		What are the specific features in the Paragraph AI application that help you interpret information, ideas, and thoughts, and then draw relevant conclusions?	Apa saja fitur-fitur khusus dalam aplikasi paragraph AI yang memfasilitasi Anda dalam menginterpretasikan informasi, ide, dan pemikiran untuk kemudian menarik kesimpulan yang relevan?
		Please provide a concrete example of how you use the Paragraph AI application to gain a deeper understanding of a concept or argument before	Mohon berikan contoh konkret tentang bagaimana Anda menggunakan aplikasi paragraph AI untuk mendapatkan pemahaman yang lebih dalam tentang suatu

		writing!	konsep atau argumen sebelum menulis?
		Please explain to what extent the Paragraph AI application has helped you enhance your ability to gain a deeper understanding and interpret information more effectively!	Tolong jelaskan sejauh mana aplikasi paragraph AI telah membantu Anda dalam meningkatkan kemampuan memperoleh pemahaman mendalam serta menginterpretasikan informasi dengan lebih efektif?
Judging or evaluating ideas (Kouzov, 2019)	Students are able to express theoretical ideas and thoughts in writing.	What features can you use in Paragraph AI that can make it easier for you to express ideas and thoughts in writing?	Fitur apa saja yang dapat Anda gunakan di Paragraph AI yang dapat mempermudah Anda dalam mengekspresikan ide dan pemikiran dalam tulisan?
		What do you think about the presence of these features in Paragraph AI?	Apa pendapat Anda tentang keberadaan fitur-fitur tersebut di Paragraph AI?
		What new knowledge did you gain after using Paragraph AI, especially regarding your ability to express ideas in writing?	Pengetahuan baru apa yang Anda peroleh setelah menggunakan Paragraph AI, terutama mengenai kemampuan Anda dalam mengekspresikan ide dalam tulisan?
		How does using the Paragraph AI application help you express theoretical ideas and thoughts in your writing?	Bagaimana penggunaan aplikasi paragraph AI membantu Anda dalam mengekspresikan ide dan pemikiran teoritis dalam tulisan Anda?
		Please provide a concrete example of how the Paragraph AI application helps you convey theoretical ideas or concepts in	Mohon berikan contoh konkret tentang bagaimana aplikasi paragraph AI membantu Anda dalam menyampaikan ide atau

		writing!	konsep teoritis secara tertulis?
		How does using the Paragraph AI application affect your ability to better communicate theoretical ideas and thoughts in your writing?	Bagaimana penggunaan aplikasi paragraph AI mempengaruhi kemampuan Anda dalam menyampaikan ide dan pemikiran teoritis dengan lebih baik dalam tulisan Anda?
		Please explain how the Paragraph AI application has helped you improve your ability to express theoretical ideas and thoughts more fluently and effectively when writing!	Tolong jelaskan bagaimana aplikasi paragraph AI telah membantu Anda dalam meningkatkan kemampuan mengekspresikan ide dan pemikiran teoritis dengan lebih lancar dan efektif saat menulis!
Problem-Solving Process (Nejad, et.al, 2022)	Students are able to assess which thoughts or ideas they can put into writing and which they should ignore.	What kind of explanation did your lecturer give regarding selecting ideas and thoughts that should or should not be used in a piece of writing?	Apa jenis penjelasan yang diberikan oleh dosen Anda mengenai pemilihan ide dan pemikiran yang sebaiknya digunakan atau tidak digunakan dalam sebuah tulisan?
		How does Paragraph AI help students evaluate and sift through thoughts or ideas worth including in their writing?	Bagaimana Paragraph AI membantu mahasiswa dalam mengevaluasi dan memilah pemikiran atau gagasan yang layak untuk dituangkan dalam tulisan mereka?
		Please explain how Paragraph AI facilitates students in identifying and evaluating ideas relevant to their academic writing topics!	Mohon jelaskan bagaimana Paragraph AI memfasilitasi mahasiswa untuk mengidentifikasi dan mengevaluasi gagasan yang relevan dengan topik tulisan akademik mereka!

		How does Paragraph AI differentiate between relevant and irrelevant thoughts or ideas in academic writing?	Bagaimana Paragraph AI membedakan antara pemikiran atau gagasan yang relevan dan yang tidak relevan dalam tulisan akademik?
		What specific features in Paragraph AI assist students in understanding and assessing thoughts or ideas that align with the goals of their writing?	Apa saja fitur khusus dalam Paragraph AI yang membantu mahasiswa dalam memahami dan menilai pemikiran atau gagasan yang sesuai dengan tujuan tulisan mereka?
		Please provide a concrete example of how Paragraph AI helps students determine which thoughts or ideas should be emphasized in their writing, and which should be disregarded!	Mohon berikan contoh konkret bagaimana Paragraph AI membantu mahasiswa dalam menentukan pemikiran atau gagasan mana yang harus diberikan penekanan dalam tulisan mereka, dan mana yang sebaiknya diabaikan!
		In your opinion, to what extent is Paragraph AI effective in helping students improve their skills in evaluating and selecting relevant thoughts or ideas to include in academic writing?	Menurut Anda, sejauh mana Paragraph AI efektif dalam membantu mahasiswa memperbaiki keterampilan mereka dalam mengevaluasi dan memilih pemikiran atau gagasan yang relevan untuk disertakan dalam tulisan akademik?
	Students are able to build strong arguments in their writing.	How does the Paragraph AI application help students build strong arguments in their writing?	Bagaimana aplikasi Paragraph AI membantu mahasiswa dalam membangun argumen yang kuat dalam tulisan mereka?
		What are the main features of Paragraph AI that support students	Apa saja fitur-fitur utama dari Paragraph AI yang mendukung

		in developing the ability to construct strong arguments?	mahasiswa dalam mengembangkan kemampuan membangun argumen yang kuat?
		How does the process of using Paragraph AI enhance students' ability to create consistent and persuasive arguments?	Bagaimana proses penggunaan Paragraph AI dalam meningkatkan kemampuan mahasiswa dalam menyusun argumen yang konsisten dan persuasif?
		Please provide a concrete example of how students use Paragraph AI to improve the quality of arguments in their writing!	Mohon berikan contoh konkret bagaimana Paragraph AI digunakan oleh mahasiswa untuk meningkatkan kualitas argumen dalam tulisan mereka?

b. Document Analysis Checklist

The document analysis instrument in this study was developed based on the theory of Linda Elder with Richard Paul which discusses the level of critical thinking in writing.

No.	Critical Thinking Level	Indicators	Yes	No	Notes
1	Unreflective Thinker	7. Students write without considering their own biases, assumptions, or preconceptions			
		8. Fail to evaluate the credibility of sources or the validity of arguments presented.			
		9. Transition between paragraphs or sections may be weak or nonexistent			
		10. Often submit work without thoroughly revising or editing,			

		leading to grammatical errors, typos, and unclear expressions			
		11. Fail to support arguments or claims with relevant evidence or examples.			
		12. Fail to explore varied sentence structures or use language creatively to engage the reader.			
2	Challenged Thinker	7. Students struggle to structure ideas logically, resulting in a lack of coherence and flow in the writing.			
		8. Face challenges in expressing ideas clearly and concisely.			
		9. Display difficulties in applying proper grammar rules, leading to frequent errors in sentence construction.			
		10. Face challenges in generating original and creative ideas.			
		11. Struggle with the revision process, making it challenging to identify and correct errors in the writing.			
		12. Fail to effectively integrate supporting evidence or examples to strengthen arguments.			
3	Beginning Thinker	7. Lack a clear introduction, body, and conclusion in their writing.			
		8. Rely on a limited range of vocabulary, resulting in simplistic and repetitive language.			
		9. Face challenges in smoothly transitioning			

		between paragraphs or ideas.			
		10. Demonstrate inconsistencies in applying grammar rules and may make frequent errors in punctuation and sentence structure.			
		11. Struggle to articulate a clear purpose or main idea in the writing.			
		12. Face challenges in adapting writing style to suit different audiences or purposes.			
4	Practicing Thinker	7. Set clear goals for writing projects, whether it's improving clarity, refining argumentation, or enhancing creativity.			
		8. Utilize a variety of reputable sources to support arguments and strengthen the overall quality of writing.			
		9. Take the time to polish and refine writing, paying attention to grammar, punctuation, and overall coherence.			
		10. Construct well-organized and cohesive pieces of writing with a clear introduction, body, and conclusion.			
		11. Understand and follows a structured writing process, including brainstorming, drafting, revising, and editing.			
		12. Work towards conveying ideas in a concise and easily understandable manner.			
5	Advanced	6. Utilize advanced			

	Thinker	vocabulary and sentence structures to convey ideas with precision and impact.			
		7. Construct well-organized and structurally sound pieces of writing with seamless transitions.			
		8. Pay attention to detail, ensuring flawless grammar, punctuation, and syntax.			
		9. Showcase a high degree of originality and creativity in generating ideas.			
		10. Innovatively combine different perspectives to bring freshness to the writing.			
6.	Master Thinker	6. Utilize advanced vocabulary and sentence structures to convey ideas with precision and impact.			
		7. Showcase a high degree of originality and creativity in generating ideas and presenting them in a unique and engaging manner			
		8. Construct compelling and sophisticated arguments, considering multiple viewpoints and anticipating counterarguments.			
		9. Exhibit a nuanced and precise command of language to convey complex ideas clearly.			
		10. Construct well-organized and structurally sound pieces of writing with			

		seamless transitions and a clear sense of purpose.			
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Catatan Validator

1. Terkait protocol wawancara, sebelum divalidasi, peneliti banyak menggunakan yes/no questions, yang mana model pertanyaan seperti ini tidak cocok untuk mengeksplorasi data sebab jawaban hanya yes atau no. Tidak ada jawaban mendetail.
2. Validator membantu merubah semua model pertanyaan yes/no questions dan menambah item pertanyaan-pertanyaan yang memungkinkan.
3. Karena proses wawancara biasanya berjalan kompleks, maka peneliti idealnya menyiapkan pertanyaan berbahasa Indonesia. Sebab tidak semua partisipan mampu mempertahankan komunikasi saat wawancara menggunakan Bahasa Inggris penuh. Oleh karena itu, validator membantu menuliskan terjemahan setiap pertanyaan wawancara ke dalam versi Bahasa Indonesia.
4. Semua yang validator bantu edit diwarnai biru dan hijau.
5. Terkait dengan instrument dokumen analysis, menurut validator, indicators yang dijadikan sasaran analisis sudah ideal.
6. Sekarang, menurut validator, instrumen ini sudah valid secara konten. Silahkan peneliti lanjut melakukan pengambilan data.

Curup, 28 April 2024

Validator

3. Rully Morganna, M.Pd

5. RATER LETTER

RATER LETTER

After verifying the document analysis to be used in the research entitled "PROMOTING STUDENTS' WRITING CRITICAL THINKING BY USING PARAGRAPH WRITING AI TECHNOLOGY" arranged by:

Name : Chantika Nabilla
NIM : 20551011
Study Program : English Study Program (TBI)
Faculty : Tarbiyah

With my undersigned:

Name : Rizki Indra Gucl, M.Pd.
Institution : IAIN Curup
Position : Teaching Staff

Confirmed that the rubric is correctly used to check students' narrative paragraph writing and the assessment results can be reliably accounted for.

Curup, June 01, 2024

Rater



Rizki Indra Gucl, M.Pd.

6. INTERVIEW TRANSCRIPT

Variables	Indicators	Questions	Answer
<p>Problem-Solving Process (Nejad, et.al, 2022)</p>	<p>Students are able to identify and analyze problems.</p>	<p>How do you use the Paragraph AI application to identify and analyze problems in writing?</p>	<p>I use the ParagraphAI app to identify and analyze problems in writing by making use of the text analysis features provided, such as grammatical error detection, sentence-wide checking, and paragraph coherence evaluation. (Student 1)</p> <p>Well, I use ParagraphAI to identify flaws in the paragraph structure, logical flow, and coherence of my writing so that I can improve them. (Student 2)</p> <p>I use it by entering the text I want to analyze and then the app will identify issues such as grammatical errors, cohesion, or readability.(Student 4)</p> <p>The Paragraph AI app helps me identify and analyze problems in my writing by using artificial AI technology to analyze my content structure and writing style.(Student 5)</p> <p>So, I use Paragraph AI to identify and analyze problems in my writing by analyzing the sentence structure, grammar, clarity, and</p>

		<p>also the consistency of the text.(Student 6)</p> <p>I use Paragraph AI to identify and analyze writing problems with input text and get recommendations for improvement. (Student 7)</p> <p>I use it by inputting the text to be analyzed and then the application will identify problems such as grammatical errors, cohesion or readability. (Student 8)</p> <p>I use Paragraph AI application to identify problems such as layout, incorrect punctuation, and also the structures of capital letters and also to adjust the spacing that may have errors in writing. (Student 9)</p> <p>Of course, my first thing is to find the topic first, then I use vocabulary or evaluate the vocabulary that I find from the application. (Student 10)</p>	
		<p>What kind of instructions did your lecturer give you in using the Paragraph AI application to identify and analyze problems in writing?</p>	<p>My lecturer gave us instructions on how to use the text analysis features in Paragraph AI to identify areas in our writing that need improvement. He also suggested that we use</p>

		<p>the app early on in the writing process. (Student 1)</p> <p>Such as instructions to upload the writing from Paragraph AI, then submit it through Google Chrome or Google Drive. (Student 2)</p> <p>The lecturer gives instructions such as giving directions about the focus of the analysis, then it is also possible to analyze the mistakes that I wrote in the paragraph, then put it into Paragraph AI so that I know what mistakes I wrote in my paragraph. (Student 3)</p> <p>Instructions on how to use the app focus on the type of problem you want to identify, e.g. grammar, paragraph structure, or clarity. (Student 4)</p> <p>My lecturer gave me instructions on how to use the Paragraph AI app with a focus on identifying errors in the structure of my writing and also checking the content's difficulty with the topic and cohesion in conveying the idea. (Student 5)</p> <p>So, yesterday in</p>
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		<p>semester 3, the instructions given by my lecturer included using the application to check for errors such as grammar, clarity, and also consistency of arguments in student writing. (Student 6)</p> <p>Lecturer provides instructions on using Paragraph AI to detect grammatical errors and coherence in writing. (Student 7)</p> <p>The lecturer provides instructions on how to use the application focusing on the type of problem to be identified e.g. grammar, paragraph structure or clarity and how to interpret the analysis results. (Student 8)</p> <p>The type of instruction given by the lecturer is a direct instruction to instruct using the Paragraph AI application to paraphrase and also correct the punctuation marks contained in the paragraphs we write. (Student 9)</p> <p>The type of identification is by using keywords or key points or the main keys that we want to search for or the topic we want</p>
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		<p>What are the key features of the Paragraph AI application that enable students to analyze issues in-depth?</p>	<p>to discuss. (Student 10)</p> <p>Some of the key features of Paragraph AI that enable in-depth analysis are spelling and grammar error detection, argument strength assessment, and suggestions for improving the coherence and logical flow of writing. (Student 1)</p> <p>A key feature of Paragraph AI is its ability to identify problems such as unclear sentences, chaotic structures, and incongruity between one piece of writing and another. (Student 2)</p> <p>Probably the grammar checker and style suggestion, so the grammar checker can check for errors in grammar and spelling, and the style suggestion can give suggestions to improve the writing style. (Student 3)</p> <p>The main features of the AI paragraph app include grammar error detection, paragraph structure marking, and clarity and cohesion points. (Student 4)</p> <p>The main feature of the Paragraph AI app is that it allows me to</p>
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		<p>analyze in-depth including language data error detection, cohesion and coherence evolution and suggestions for improving the content and structure of my writing. (Student 5)</p> <p>The main features of the Paragraph AI app include analysis of grammar, grammatical errors, clarity of writing, consistency of arguments, as well as improvement suggestions to improve the quality of writing. (Student 6)</p> <p>The main possible features are grammar error detection, coherence analysis, and improvement recommendations. (Student 7)</p> <p>The main features of Paragraph AI app include grammar error detection, paragraph structure marking and clarity and cohesion points. (Student 8)</p> <p>The features contained in the Paragraph AI application that can help students analyze problems in their writing are to improve the structure of punctuation and also</p>
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		<p>the structure of writing-writing of each sentence in the paragraph and also to level the main features in the Paragraph AI application that allow students to analyze problems in depth and also the application helps students by improving the writing structure in the form of punctuation and also the structure for writing paragraphs and forming correct paragraphs. (Student 9)</p> <p>The first one is generating topics, generating topics that we might not think of. The second is maybe to check the grammar. (Student 10)</p>
	<p>Please provide a concrete example of how a student uses the Paragraph AI application to identify and analyze issues in their writing?</p>	<p>For example, I uploaded a draft of my writing to Paragraph AI. The app then analyzes the text and provides feedback such as highlighting sentences that are too long or confusing paragraph structures. I can fix the problem based on the suggestions. (Student 1)</p> <p>For example, Paragraph AI found that the opening paragraph did not focus on the topic I specified, so I improved it by creating</p>

		<p>a clearer topic sentence. (Student 2)</p> <p>A concrete example can be using this application is to identify repetition of words that are not needed in paragraph writing. Then it is also possible to replace the repeated words by using the synonyms provided. (Student 3)</p> <p>A student can use the AI paragraph application by entering his/her writing script, then viewing the analysis results to find out grammatical errors, clarity, and paragraph structure that need to be corrected. (Student 4)</p> <p>For example, I use the Paragraph AI app to check the consistency of my arguments and also to identify unclear sentences and improve the flow of ideas, for example in my essays. (Student 5)</p> <p>For example, a student could use the Paragraph AI app to check his or her writing on the impacts of climate change. So, the app will identify grammatical errors, clarity of argument, and also data consistency as I</p>
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		<p>explained earlier, and provide suggestions to improve the writing to make it stronger and more cohesive. (Student 6)</p> <p>For example, a student could use Paragraph AI to highlight grammatical errors, word repetition, and lack of coherence in their writing. (Student 7)</p> <p>I usually use the AI application by inputting a writing script, then viewing the analysis results to find out grammatical errors, clarity and paragraph structure that need to be corrected. (Student 8)</p> <p>One example is students using the Paragraph AI application to find out the level of plagiarism and also to improve the writing structure in their paragraph sentences. (Student 9)</p> <p>First of all, we copy from one of the basic sources, then we generate it and that will be the material for us in the future to write. (Student 10)</p>
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		<p>How does the process of using the Paragraph AI application help students develop their critical skills in addressing various issues in writing?</p>	<p>By using Paragraph AI repeatedly during the writing process, I improved my critical skills in identifying and dealing with writing problems such as argument inconsistencies and/or unclear main points. (Student 1)</p> <p>The process of using Paragraph AI developed my critical skills in identifying and fixing weaknesses in my writing independently. (Student 2)</p> <p>The app gives immediate feedback on problems that need to be fixed in the writing. (Student 3)</p> <p>The process of using Paragraph AI helps students develop their critical skills by providing structured and objective feedback on problems in their writing, allowing them to learn from mistakes, and improving their overall writing ability. (Student 4)</p> <p>The process of using the Paragraph AI app helped me develop critical skills by sharpening the ability to analyze the structure</p>
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		<p>of the writing and also to evolve the fit of the content to the topic and improve coherence in the delivery of the video. (Student 5)</p> <p>For the process of using the Paragraph AI application, it certainly helps students develop their critical skills by providing very detailed feedback on the weaknesses and strengths of their writing by understanding and fixing the problems in their writing. Well, these students can improve their analytical and problem-solving skills in writing. (Student 6)</p> <p>AI helps students develop critical skills by providing instant feedback. (Student 7)</p> <p>Usually it provides structured and objective feedback on problems in writing which allows me to learn from mistakes and improve overall writing ability. (Student 8)</p> <p>Of course, by providing new ideas that we have not thought of before through the sources we choose and we generate through the Paragraph</p>
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			AI application. (Student 10)
		<p>Please explain a difference in students' abilities to identify and analyze issues before and after using the Paragraph AI application!</p>	<p>Before using Paragraph AI, I often had difficulty recognizing flaws in my own writing. However, after using this app, I became more skilled at identifying and analyzing issues such as unclear sentences or slightly chaotic structures. (Student 1)</p> <p>Before using Paragraph AI, I often didn't realize the weaknesses in my own writing, and afterwards I can easily see the areas that need further improvement. (Student 2)</p> <p>Before using the app, students' ability to identify and analyze problems may be limited as they may miss language errors or perhaps improper writing style. Then after using the app, students will be better trained in identifying problems in writing because the app can immediately provide suggestions for improvement. (Student 3)</p> <p>Before using the AI</p>

		<p>paragraph app, students may have limitations in identifying and analyzing problems in their writing independently. After using the app, they will be more thorough and recognize grammatical errors, unclear paragraph structures, and other aspects that affect the quality aspects of their writing. (Student 4)</p> <p>Before using the Paragraph AI app, I may have been less aware of errors in the structure and content of my writing. But after using this app, I am more skilled in the identification and analysis of problems in my writing. (Student 5)</p> <p>I personally think that before I used this Paragraph AI app, my ability to identify and analyze problems in my writing might be limited or subjective. However, after I use this app, I tend to be more trained in recognizing grammatical errors, clarity of argument, and also consistency of writing. (Student 6)</p> <p>After using Paragraph AI, students' ability to</p>
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		<p>identify and analyze problems in their writing has improved due to specific recommendations for improvement. (Student 7)</p> <p>Previously, I had limitations in identifying and analyzing problems in my writing independently. After using the application, I am better trained in recognizing grammatical errors, unclear paragraph structure and other aspects that affect the quality of writing. (Student 8)</p> <p>The difference in students' ability to identify problems and analyze problems before and after using the Paragraph AI application is quite significant because before the Paragraph AI writing application, students did not really know about problems in the writing section, problems in the placement of punctuation marks, and also capital letter placement problems that students should pay attention to in more detail. (Student 9)</p>
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			<p>Before, it was difficult for us to find topics and elaborate words, but after using Paragraph AI, we finally got used to it and it was easy to elaborate the topics we were looking for. (Student 10)</p>
	<p>Students are able to collect appropriate information, evaluate a series of options, making decisions about the information to be applied and finally evaluate the information obtained to improve writing.</p>	<p>How do you use Paragraph AI to collect information to use as material for writing?</p>	<p>I use the search feature in Paragraph AI to gather relevant information from various untrusted sources. It helps me filter out sources that are not credible. (Student 1)</p> <p>Using Paragraph AI to gather articles, quotes, and data relevant to the topic I am looking for or need. (Student 2)</p> <p>I use the search or browsing feature in the app to find articles that are related or relevant to the topic I want to write about. (Student 3)</p> <p>To gather information, you can usually use AI paragraphs by entering text from relevant sources, or by using the built-in web search feature to find information related to the topic you are writing about. (Student 4)</p> <p>I use the Paragraph AI</p>

		<p>app to gather information by utilizing the search and analysis features that allow me to find sources relevant to my writing topic. (Student 5)</p> <p>I use this Paragraph AI to gather sources by identifying relevant sources and also taking quotes or important points from the text. (Student 6)</p> <p>By importing relevant texts, Paragraph AI helps me gather information for writing. (Student 7)</p> <p>Entering text from relevant sources or using the built-in web writing feature to find information related to the piece I am writing. (Student 8)</p> <p>Definitely what we do is to use the information that is most relate to the information we want. (Student 10)</p>	<p>After collecting the information that I uploaded my writing to Paragraph AI, the app then analyzes the extent to which the information is applied and provides suggestions for further</p>
	<p>How do you use Paragraph AI to apply and evaluate the information obtained to improve writing?</p>		

		<p>improvement. (Student 1)</p> <p>I use Paragraph AI to evaluate information and apply it in my writing in a coherence and structured or systematic way. (Student 2)</p> <p>Applied and evaluated the information to improve the writing, I think the information I collected was used to be the basis or maybe to make an argument or explanation in my paragraph writing. (Student 3)</p> <p>Applied in the writing by integrating relevant quotes, data or facts, then can use AI's paragraph analysis feature to evaluate the clarity and cohesion of the writing after the information is added. (Student 4)</p> <p>By using Paragraph AI, I was able to apply the relevant information I obtained into my writing and then evaluate the effectiveness of its use by giving the app the correctness of the improvements. (Student 5)</p> <p>After gathering the</p>
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			<p>information, of course, I used Paragraph AI to evaluate the clarity and consistency of the argument, and to correct grammatical errors in my writing. (Student 6)</p> <p>Paragraph AI helps me by evaluating the effectiveness of my writing. (Student 7)</p> <p>After getting the information, I can apply it to my writing by integrating relevant data or fact quotes. Then I can use AI's Paragraph analysis feature to evaluate the clarity and cohesion of the writing after the information has been added. (Student 8)</p> <p>I use the Paragraph AI app to apply and evaluate the information obtained to improve my writing by correcting errors and also following the writing structure found in the Paragraph AI app. (Student 9)</p> <p>Of course, with concrete writings and also clear sources, we just use it for validity and add to our writing. (Student 10)</p>
		Please provide a concrete example of	For example, Paragraph AI can detect if I'm

		<p>how the Paragraph AI application helps you in making decisions about relevant and important information to include in your writing!</p>	<p>quoting sources that are irrelevant to the main argument of the piece. It then suggests that I remove or replace the quote with more relevant or appropriate information. (Student 1)</p> <p>For example, Paragraph AI recommends expert writing to support my argument, so it can strengthen what I'm explaining or writing about, so I include it as evidence. (Student 2)</p> <p>The Paragraph AI app helps me make decisions about relevant and important information to include in my writing by highlighting words or phrases that are considered important in the text I am analyzing. (Student 3)</p> <p>For example, when writing an essay on climate change, paragraph AI can help decide which information is most relevant and significant to include in the writing, such as data on global temperature increase or the impact of climate change on the environment. (Student 4)</p>
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		<p>For example, when writing an essay on the influence of technology in education, the Paragraph AI app helped me decide which information to include based on its relevance to the topic and also its significance in supporting my argument. (Student 5)</p> <p>For example, as I said earlier, when I was writing about climate change, Paragraph AI helped me select relevant information about environmental impacts and solutions proposed by experts. (Student 6)</p> <p>For example, when writing an essay on climate change, Paragraph AI can help decide which information is most relevant and significant to include in the writing, such as data on the increase in global temperature or the impact of climate change on the environment. (Student 8)</p> <p>The most important thing is how the writing is relevant to other sources and then whether the source can</p>
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			<p>be used and whether it is actually valid. (Student 10)</p>
		<p>How does the process of evaluating information you obtain through the Paragraph AI application help you improve the quality of your writing?</p>	<p>The process of evaluating information through Paragraph AI helps improve the quality of my writing by ensuring that I only use sources that are credible, relevant and better support my arguments. (Student 1)</p> <p>With the help of Paragraph AI, to evaluate information, my writing became stronger, focused and well supported. (Student 2)</p> <p>By using Paragraph AI app, I can see if the information I use is recognized or has credibility in the topic I want to write about. (Student 3)</p> <p>The process of evaluating information through AI paragraphs helps improve the quality of writing by ensuring that the information included is relevant, accurate and supports the argument being made. (Student 4)</p> <p>The process of evaluating information through Paragraph AI app helps improve the quality of my writing</p>

			<p>by ensuring that only relevant and creditable information is included, thus increasing the reader's confidence in my arguments. (Student 5)</p> <p>For the process of evaluating information through the Paragraph AI app, it certainly helps me to improve the quality of my writing by ensuring that arguments are supported by accurate and relevant data. (Student 6)</p> <p>The evaluation of information through Paragraph AI helps improve the quality of my writing by providing suggestions for improvements such as coherence that is not well organized. (Student 7)</p> <p>I can improve the quality of my writing by ensuring that this information is relevant, accurate and supports the argument I am making. (Student 8)</p> <p>The process of evaluating the information I obtained through the Paragraph AI application can help improve the quality of my writing by checking</p>
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			<p>the level of plagiarism and also the level of punctuation placement and also the placement of readings such as bolded text, underlined text, and italicized text. (Student 9)</p> <p>First, in Paragraph, it will evaluate grammar, grammar and which part of the vocabulary that might be difficult or wrong when we journalist to the application. (Student 10)</p>
		<p>How does the Paragraph AI application enhance your ability to assess the strengths and weaknesses of the information you apply in your writing?</p>	<p>Paragraph AI helps me assess the strengths and weaknesses of each source I use. For example, it can identify if a source is too old or has certain biases. (Student 1)</p> <p>Paragraph AI helps me assess the strengths and weaknesses of each piece of information by analyzing its relevance, accuracy, and completeness in the context of the writing. (Student 2)</p> <p>With this app, I can easily see the arguments made by other writers and can also judge whether the arguments are strong or weak based on the information provided. (Student 3)</p>

			<p>After using the app, I will be more trained in recognizing grammatical errors, unclear paragraph structure, and other aspects that affect the quality of writing. (Student 4)</p> <p>The Paragraph AI app helps me assess the strengths and weaknesses of my information that I apply in my writing by providing improvement suggestions that consider the accuracy, credibility, and relevance of the information. (Student 5)</p> <p>By using Paragraph AI, I was able to identify the strengths and weaknesses of the information I applied in my writing more objectively, allowing me to construct stronger and more informed arguments. (Student 6)</p> <p>Paragraph AI helped assess the strengths and weaknesses of the information in my writing by providing specific recommendations for improvement. (Student 7)</p>
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			<p>Can go in-depth on information strengths and weaknesses by providing an in-depth analysis of the clarity, cohesion, and accuracy of the information used in the writing. (Student 8)</p> <p>Through the Paragraph AI application we can find out the level of plagiarism which also affects the quality of our writing and it can also affect the weaknesses in our writing. (Student 9)</p> <p>Usually from Paragraph AI the resulting text is clearer, more structured language with the language that we design first. (Student 10)</p>
Interpreting ideas and information (Kouzov, 2019)	Students are able to identify and analyze information to recognize patterns and relationships.	How does the Paragraph AI application help you identify relevant information to then analyze it in finding patterns and relationships?	<p>The search feature in Paragraph AI helped me identify relevant information from various sources. Then, the text analysis feature helps me analyze the information to find patterns and relationships. (Student 1)</p> <p>Paragraph AI identifies relevant information, so I can analyze it to find important patterns and relationships with other paragraphs. (Student 2)</p>

		<p>With this app, I can easily highlight important information in the text and also collect it for further analysis. (Student 3)</p> <p>Paragraph AI helps in identifying relevant information by considering criteria such as clarity, accuracy, and cohesion making it easier to analyze patterns and relationships between the information obtained. (Student 4)</p> <p>Paragraph AI helped me identify relevant information by analyzing the structure and content of the text and visually presenting the patterns and relationships between the information. (Student 5)</p> <p>Paragraph AI helped me to identify relevant information by clarifying the argument and eliminating my confusion to write the text. (Student 6)</p> <p>Paragraph AI helps identify relevant information and analyze it to find patterns or relationships related to my writing. (Student 7)</p>
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		<p>Paragraph AI helps in identifying relevant information by considering criteria such as clarity, accuracy, and cohesion, making it easier to analyze patterns and relationships between the information obtained. (Student 8)</p> <p>Paragraph AI application helps in identifying relevant information and analyzing it by providing several references which one should be taken and which one should not be taken. (Student 9)</p> <p>We try to find how information that is already widely used by the general public continues to be used and elaborated with newer language. (Student 10)</p>	<p>Paragraph AI helps in identifying relevant information by considering criteria such as clarity, accuracy, and cohesion, making it easier to analyze patterns and relationships between the information obtained. (Student 8)</p> <p>Paragraph AI application helps in identifying relevant information and analyzing it by providing several references which one should be taken and which one should not be taken. (Student 9)</p> <p>We try to find how information that is already widely used by the general public continues to be used and elaborated with newer language. (Student 10)</p>
		<p>What are the specific features in the Paragraph AI application that make it easier for you to recognize patterns and relationships among the information you receive?</p>	<p>Some special features that facilitate pattern and relationship recognition are data visualization, concept mapping, and main topic detection in a text. (Student 1)</p> <p>Key features include the ability to map concept relationships, find common themes, and identify supporting or contradictory</p>

		<p>information. (Student 2)</p> <p>Perhaps a very important feature for easy recognition of patterns and relationships between information is the text highlighting feature which allows me to highlight important information in my text. (Student 3)</p> <p>The first is semantic analysis. This feature allows the app to understand the meaning behind the text, not just the literal words. Second, the AI relation extraction paragraph by extracting and identifying specific relations. And finally, knowledge graph, the application builds a knowledge graph that connects information. (Student 4)</p> <p>Features such as coercion and coherence analysis, grammatical error detection, and information pattern visualization made it easier for me to recognize patterns and relationships between ideas and texts. (Student 5)</p> <p>For special features such as writing clarity</p>
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		<p>analysis, argument consistency, and grammar error detection, it makes it easier for me to recognize patterns as well as relationships between the information I receive. (Student 6)</p> <p>Features such as coherence analysis and grammatical error detection make it easier for me to control patterns and relationships between information. (Student 7)</p> <p>Specific features in the Paragraph AI app include paragraph structure tagging, grammatical error detection, and clarity and cohesion analysis which all help in recognizing patterns and relationships between the information obtained. (Student 8)</p> <p>Features for generating information, for example if we type about the history of Palestine, well in that feature we can know the history of Palestine from Paragraph AI which generates about the history of Palestine. (Student 10)</p>
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		<p>Please provide a concrete example of how you use the Paragraph AI application to identify patterns or relationships in the information you receive before writing!</p>	<p>For example, I used Paragraph AI to analyze several research articles on the impact of climate change. The app helped me find patterns such as an increase in the frequency of natural disasters in different regions. (Student 1)</p> <p>I was able to use Paragraph AI to identify patterns in explanations about the use of certain tenses or sentence structures. It helps me find consistent examples and explanations before writing learning materials. (Student 2)</p> <p>For example, when researching the impact of technology on daily life, I used Paragraph AI to identify patterns in the articles I read. Such as an increase in smartphone users collaborating with a decrease in social interaction. (Student 4)</p> <p>For example, when I wrote an essay, I used Paragraph AI for example on the impact of globalization on the world. I used Paragraph AI to identify patterns of change in the economy in recent decades and their</p>
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		<p>relationship to the phenomenon of globalization for example. (Student 5)</p> <p>For example, when I was researching environmental policies, I was able to use Paragraph AI to identify patterns in the data as well as arguments for or against an environmental policy. (Student 6)</p> <p>For example, when I was researching the impact of technology on daily life, I used Paragraph AI to identify patterns in the articles I read, such as increased smartphone use correlating with decreased social interaction. (Student 8)</p> <p>An example of how I use the Paragraph AI app to identify patterns or relationships of the information I receive is by collecting each data then I make a paragraph form and then I paraphrase in the Paragraph AI app to determine and also to determine the level of plagiarization that I get after writing the information I get and then I use the Paragraph AI app to fix</p>
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			<p>and correct the writing patterns and punctuation. (Student 9)</p> <p>Okay, first of all, we determine the topic we want to discuss, then with some information that appears, we will select one by one and connect it with other sources whether this source is valid or not. (Student 10)</p>
		<p>How does your ability to recognize patterns and relationships among the information you receive through the Paragraph AI application affect the way you structure and develop arguments in your writing?</p>	<p>The ability to recognize patterns and relationships between information obtained through Paragraph AI greatly influences the way I structure and develop arguments. I can use these patterns to strengthen my argument and ensure consistency in my writing. (Student 1)</p> <p>Recognizing patterns and relationships helps me develop coherent arguments by logically linking supporting evidence. (Student 2)</p> <p>This ability influences the way I organize arguments in my writing by giving me a better understanding of the complexity of the topic, both the arguments used to support the topic and the explanations that</p>

			<p>will support the argument and the topic. (Student 3)</p> <p>My ability to recognize patterns and relationships between the information I received through the AI paragraph application helped me construct a more coherent and in-depth argument, as I was able to link relevant data and facts to support my position. (Student 4)</p> <p>My ability to recognize patterns and relationships between information affects the way I construct my argument by presenting consistent and relevant evidence to support my claims. (Student 5)</p> <p>My ability to recognize patterns and relationships between the information I receive influences the way I construct arguments in my writing by ensuring coherence and consistency between the points I will present in the text.(Student 6)</p> <p>The ability to recognize patterns and relationships between information through Paragraph AI affects</p>
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		<p>the way I construct arguments in my writing.(Student 7)</p> <p>My ability to recognize patterns and relationships between the information I receive through the Paragraph AI app helps me construct arguments with more coherence and depth as I can prepare relevant data and facts to support my position.(Student 8)</p> <p>I will usually be more cautious and choose topics or discussions that appear more valid and more relevant to the topic at hand rather than information that is somewhat less convincing in its source. (Student 10)</p>	<p>Paragraph AI helps me analyze information more deeply by highlighting important details and visualizing the relationships between different concepts. This makes it easier to identify relevant patterns and relationships. (Student 1)</p> <p>Paragraph AI improved my analytical skills by visualizing the relationships of information and finding its relevance for the</p>
	<p>Please explain how the Paragraph AI application assists you in enhancing your ability to analyze information and identify relevant patterns and relationships in writing!</p>		

			<p>topic. (Student 2)</p> <p>The app helps me identify patterns as well as relationships by providing a visual summary or diagram of the information being analyzed and then making it easier for me to see the relationships between different concepts and ideas. (Student 3)</p> <p>The AI paragraph app helped improve my analytical skills by providing feedback on writing structure, clarity, and cohesion which allowed me to automatically analyze information and identify relevant patterns and relationships. (Student 4)</p> <p>Paragraph AI app helps improve your ability to analyze information and provides visualization and evaluation tools that use its users, I mean, to identify patterns and relationships between information and writing. (Student 5)</p> <p>For the Paragraph AI application, it certainly helps me analyze information quickly and identify relevant</p>
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		<p>patterns and relationships by presenting summaries as well as key points from complex texts. (Student 6)</p> <p>Paragraph AI helps me improve my ability to analyze information by providing feedback and recommendations for improvement to my writing. (Student 7)</p> <p>The Paragraph AI app helped improve my analytical skills by providing feedback on writing structure, clarity, and cohesion that allowed me to systematically analyze information and identify relevant patterns and relationships. (Student 8)</p> <p>The Paragraph AI application helps me improve my ability to analyze information through the use of paraphrase which after the paragraph is paraphrased, only the important information contained in the paragraph will be collected. (Student 9)</p> <p>Again, Paragraph AI helped by bringing up and giving us new topics and topics that</p>
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			we didn't think of and then we started to elaborate the language into our own language and we added to it with other sources. (Student 10)
	Students gain a deeper understanding of ideas and arguments, and are able to interpret and draw conclusions about the information, ideas and thoughts they get.	How do you maximize the features in the Paragraph AI application to help you draw conclusions?	<p>I maximize the data visualization and concept mapping features in Paragraph AI to help draw conclusions from the various information I have collected and analyzed. (Student 1)</p> <p>I used the features such as concept mapping and theme identification to help draw conclusions from the information collected. (Student 2)</p> <p>I use the structuring feature which organizes the collected information into a coherent framework and also use the summary feature to understand the gist of each piece of information that I have written. (Student 3)</p> <p>I maximized the features in the AI paragraph app by effectively using the analysis results to construct a structured and strong argument, and by paying attention to the improvement</p>

			<p>recommendations provided by the app. (Student 4)</p> <p>I maximize the features in the PKPI app by actively using the corrections provided to fix the flaws in my writing and ensure an accurate, strong conclusion. (Student 5)</p> <p>I maximize features such as text structure analysis and selection of key points to extract relevant information and draw appropriate conclusions. (Student 6)</p> <p>I maximize the features in the Paragraph AI app by actively using the analysis results to construct structured and strong arguments, and by paying attention to the improvement recommendations provided by the app. (Student 8)</p> <p>We use, especially me, I use other applications to beautify my writing through Paragraph AI. (Student 10)</p>
		<p>How does the Paragraph AI application help you gain a deeper understanding of the ideas and arguments you encounter in your</p>	<p>Paragraph AI helped me gain a deeper understanding of the ideas and arguments in my writing through its advanced text analysis features. It highlights</p>

		writing?	<p>the main points and key arguments in a text. (Student 1)</p> <p>Paragraph AI helps me gain a deeper understanding by extracting key ideas and connecting them to my arguments. (Student 2)</p> <p>By providing an in-depth analysis of the text that has been analyzed, the app helps me to explore complex ideas and also understand the arguments that have been presented better. (Student 3)</p> <p>By providing an in-depth analysis of the clarity and cohesion of the writing, it made it easier for me to summarize and interpret the information effectively. (Student 4)</p> <p>Paragraph AI helped me gain a deeper understanding of the ideas and arguments by providing an in-depth analysis of the structure and content of the writing and providing relevant corrections. (Student 5)</p> <p>By using this Paragraph AI app I was able to</p>
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			<p>gain a deeper understanding of ideas and arguments by looking at the structure of the text and the key points highlighted for the text. (Student 6)</p> <p>Paragraph AI helped me gain a deeper understanding of the relevance and clarity of ideas in your writing. (Student 7)</p> <p>By providing an in-depth analysis of the clarity and cohesion of the writing, it made it easier for me to summarize and interpret the information effectively. (Student 8)</p> <p>The way Paragraph AI can help us gain a deeper understanding of ideas and arguments is by separating the general and specific parts of the explanation, which allows us to gain more in-depth information about the writing we are about to create. (Student 9)</p> <p>Usually I don't just go through the results once but many times until I get the right results. (Student 10)</p>
		<p>What are the specific features in the Paragraph AI</p>	<p>Some of the specific features that facilitate the interpretation of</p>

		<p>application that help you interpret information, ideas, and thoughts, and then draw relevant conclusions?</p>	<p>information and drawing conclusions are the explanation of context, confirmation of the validity of sources, and assessment of the strength of arguments. (Student 1)</p> <p>Key features include the ability to summarize important information, identify key statements, and find logical connections between concepts. (Student 2)</p> <p>The in-depth text analysis feature allows me to see the core of every idea or argument I encounter. Then there is also the structuring feature which also helps me to organize information to draw conclusions that are relevant to the topic I am writing about. (Student 3)</p> <p>Such as clarity and cohesion analysis, as well as paragraph structure marking facilitated me in interpreting information by providing clear guidance on how to structure and present arguments well. (Student 4)</p> <p>Features such as cohesion and coherence</p>
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		<p>analysis, visualization of information patterns, and content improvement facilitated me in better interpreting information and drawing relevant conclusions. (Student 5)</p> <p>So in Paragraph AI, there are special features such as text structure analysis, automatic summary, and key points which can help me interpret information better to draw relevant conclusions. (Student 6)</p> <p>Special features such as the analysis of coherence and which can help interpret information to draw relevant conclusions in my writing. (Student 7)</p> <p>Features such as clarity and cohesion analysis, and paragraph structure marking facilitate me in interpreting information by providing clear guidance on how to structure and present a good argument. (Student 8)</p> <p>One of them is the feature of generating new discussions from the keywords or key points that we write</p>
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		<p>Please provide a concrete example of how you use the Paragraph AI application to gain a deeper understanding of a concept or argument before writing!</p>	<p>down. (Student 10)</p> <p>For example, before writing about climate change theory, I used Paragraph AI to analyze some of these related articles. The app helped me understand the main concepts and supporting evidence in the articles. (Student 1)</p> <p>Paragraph AI can help me understand the context of use and implied meaning, providing a deeper understanding before I explain in my writing. (Student 2)</p> <p>For example, before writing about the concept of artificial intelligence, I used Paragraph AI to analyze articles related to the topic, so that I could understand the different perspectives and arguments. (Student 4)</p> <p>I used the Paragraph AI app to gain a deeper understanding of the concepts related to my writing by using several relevant sources. (Student 5)</p> <p>For example, I used this Paragraph AI app to write an article about climate change earlier. Here, I can see the</p>
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		<p>summary and key points to get a deeper understanding before writing. (Student 6)</p> <p>Through analysis and recommendations, Paragraph AI helps me understand the concept of my writing. (Student 7)</p> <p>I use Paragraph AI to analyze articles related to the topic so that I can understand different perspectives and arguments. (Student 8)</p> <p>Paragraph AI helps me improve my comprehension skills to interpret information more effectively by summarizing in Paragraph AI the necessary information and filtering out unnecessary information. (Student 9)</p> <p>The feature is that when we type the key point or keyword, it will be generated more than once and get four discussions with the same discussion but with more sources or explanations than the first result. (Student 10)</p>
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		<p>Please explain to what extent the Paragraph AI application has helped you enhance your ability to gain a deeper understanding and interpret information more effectively!</p>	<p>Paragraph AI helped me tremendously in gaining deep understanding and interpreting information more effectively. The visualization and text analysis of this app makes the process easier and brighter. (Student 1)</p> <p>Paragraph AI has greatly helped me gain a deeper understanding and interpret information more effectively through its summarization, concept leveling, and key statement identification features. (Student 2)</p> <p>Paragraph AI app has helped me in improving my skills and also in gaining in-depth understanding by providing a detailed analysis of the text I wrote. Also, features such as summarization also made it easier for me to identify the main ideas of the text that I had written. (Student 3)</p> <p>To date, the AI paragraph app has helped me significantly in improving my ability to gain in-depth understanding and interpret information more effectively, as the analysis provided by</p>
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			<p>the app allows me to be more focused in crafting coherent arguments. (Student 4)</p> <p>The Paragraph AI app helped me improve my ability to gain in-depth understanding by providing a detailed analysis of the structure and content of my writing and providing constructive suggestions for improvement. (Student 5)</p> <p>The use of Paragraph AI has definitely helped me improve my ability to gain in-depth understanding and interpret information in a more effective way. (Student 6)</p> <p>The Paragraph AI app has helped me significantly in improving my ability to gain deep understanding and interpret information more effectively as the analysis provided by the app allows me to be more focused in crafting coherent and relevant arguments. (Student 8)</p> <p>Paragraph AI is quite helpful but as a student I definitely need to be careful and not rely on</p>
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			it. (Student 10)
Judging or evaluating ideas (Kouzov, 2019)	Students are able to express theoretical ideas and thoughts in writing.	What features can you use in Paragraph AI that can make it easier for you to express ideas and thoughts in writing?	<p>The idea organization feature in Paragraph AI makes it easier for me to express my ideas and thoughts in my writing. It helps me organize my main points and develop them into a coherent paragraph. (Student 1)</p> <p>The outlining feature, logic flow check, and sentence improvement suggestions make it easier for me to express my ideas in my writing. (Student 2)</p> <p>AI paragraphs include cohesion and paragraph structure clarity analysis and improvement suggestions to improve the overall quality of writing. (Student 4)</p> <p>Features such as cohesion and coherence analysis, polyformation visualization, and content improvement suggestions make it easier for me to express ideas and thoughts in my writing. (Student 5)</p> <p>Features such as text structure analysis,</p>

		<p>automatic summary, and of course key points will make it easier for me to express ideas and thoughts in my writing. (Student 6)</p> <p>Features that I often use, such as the coherence analysis feature and grammar error detection, make it easier to express ideas and thoughts in my writing. (Student 7)</p> <p>The features that can make it easier to express ideas and thoughts in writing in Paragraph AI include cohesion and paragraph structure clarity analysis and improvement suggestions to improve the overall quality of writing. (Student 8)</p> <p>One of the features that I use most often in the Paragraph AI application is using paraphrase to reduce the level of plagiarism and then I use the tool to improve the arrangement of language terms to form a clearer paragraph. (Student 9)</p> <p>Features that generate new ideas and new topics for me to use in my next writing.</p>
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		<p>What do you think about the presence of these features in Paragraph AI?</p>	<p>(Student 10)</p> <p>The existence of such features is very useful for me as an academic writer. (Student 1)</p> <p>They are very helpful as they provide the guidance and feedback needed to produce clearer and more structured writing. (Student 2)</p> <p>The features that I can use in Paragraph AI include text analysis, then summarizing and also graphing can organize information more clearly. It can also explore the relationship between ideas and thoughts in writing. (Student 3)</p> <p>I consider the existence of these features to be very important in improving the ability to express ideas in writing because it helps to correct grammatical errors, improve clarity, and strengthen the overall structure of writing. (Student 4)</p> <p>I think that the presence of these features in Paragraph AI is very important because they allow users to develop their writing more effectively and efficiently. (Student 5)</p>
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		<p>I definitely think that these features are very helpful and I really appreciate it because it really helps me and my friends to organize ideas more structurally and effectively. (Student 6)</p> <p>Very helpful in improving the quality of my writing. (Student 7)</p> <p>I consider the presence of these features to be very important in improving my ability to express ideas in my writing as they help to improve the sense of wordiness, increase clarity, and strengthen the overall structure of my writing. (Student 8)</p> <p>My opinion about these features in Paragraph AI is that they are an advantage that can greatly help students in the process of creating an SI or a rep.</p> <p>My opinion about the existence of these features in Paragraph AI is that it really helps all students from both levels, usually for this use from high school level to college level. This feature is very helpful because it can help students or</p>
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			<p>students in making their SI and also for students to make a mini-research. (Student 9)</p> <p>The features are certainly very helpful because limited ideas are one of the problems in writing. (Student 10)</p>
		<p>What new knowledge did you gain after using Paragraph AI, especially regarding your ability to express ideas in writing?</p>	<p>After using Paragraph AI, I feel more confident in expressing ideas in writing. The app helps me identify flaws in my writing style and provides suggestions for improvement. (Student 1)</p> <p>After using Paragraph AI, I gained new knowledge on how to organize ideas with more coherence and express them with clear sentences. (Student 2)</p> <p>I gained new knowledge about how aspects such as clarity, cohesion, and paragraph structure affect my ability to express ideas in my writing more effectively. (Student 4)</p> <p>After using Paragraph AI, I gained new knowledge on how to improve the structure and content of my writing to make it more consistent and</p>

			<p>persuasive. (Student 5)</p> <p>After using Paragraph AI, I gained a new understanding of how to organize ideas more systematically and cohesively in my writing. (Student 6)</p> <p>After using Paragraph AI, I gained new knowledge about common mistakes in writing and how to correct them. (Student 7)</p> <p>I gained new knowledge about how aspects such as cohesion clarity and paragraph structure affect my ability to express ideas in more effective writing. (Student 8)</p> <p>The new knowledge I gained after using Paragraph AI is that we don't have to write down everything about something, but we only need to write down or include important things in a Paragraph. (Student 9)</p> <p>The ability to make the language structure clearer, more structured and the information and ideas are also broad. (Student 10)</p>
		How does using the	Paragraph AI helped

		<p>Paragraph AI application help you express theoretical ideas and thoughts in your writing?</p>	<p>me express theoretical ideas and thoughts in my writing by analyzing the argument structure and providing suggestions for improvement. It also helps me connect theoretical concepts with relevant supporting evidence. (Student 1)</p> <p>Paragraph AI helps me express theoretical ideas better by summarizing key concepts and checking the coherence of arguments. (Student 2)</p> <p>Using the app helps me identify theoretical ideas and thoughts that are relevant to the topic I am writing about. Also, the text structuring and analysis features made it easier for me to organize and effectively convey those theoretical ideas or thoughts in my writing. (Student 3)</p> <p>The use of AI paragraph app helped me in expressing theoretical ideas and thoughts in my writing by providing focused feedback on critical aspects with clarity and cohesion. (Student 4)</p> <p>The use of Paragraph</p>
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			<p>AI helps me to express theoretical ideas and thoughts in my writing in a more organized and effective way. (Student 5)</p> <p>The use of Paragraph AI helped me convey theoretical ideas and thoughts more clearly and organized in my writing. (Student 6)</p> <p>The use of Paragraph AI helped me to express theoretical ideas and thoughts in my writing by providing focused feedback on critical aspects such as clarity and cohesion. (Student 8)</p> <p>The use of Paragraph AI helps me to express my ideas and theoretical thoughts is that it helps me to make a conclusion from the various information that I have obtained, then I want to make a summary or conclusion of the ideas that I have collected. (Student 9)</p> <p>By looking for more relevant topics, more than once, then I choose which one is more theoretical and which one is more structured. (Student 10)</p>
		Please provide a	For example, when

		<p>concrete example of how the Paragraph AI application helps you convey theoretical ideas or concepts in writing!</p>	<p>writing about the learning theory of discussing juristics, I used Paragraph AI to analyze whether my explanation of the main concept was clear and supported by appropriate examples. (Student 1)</p> <p>For example, when writing about motivation theory, Paragraph AI helped me summarize the main idea and logically connect it with supporting evidence. (Student 2)</p> <p>For example, when writing about psychological theories, Paragraph AI helped me to convey theoretical concepts in a clearer and more structured manner by providing suggestions for improvement to enhance the reader's understanding. (Student 4)</p> <p>Maybe as an example, let's say leadership theory, Paragraph AI application will help me formulate a stronger argument by providing analysis on the consistency and relevance of information. (Student 5)</p>
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		<p>For example, I used Paragraph AI to analyze a text on philosophical theory and construct my argument in a more structured and cohesive manner. (Student 6)</p> <p>Through recommendations and analysis Paragraph AI helped me convey theoretical ideas or concepts more clearly in my writing. (Student 7)</p> <p>When writing about psychological theories, Paragraph AI helped me to convey theoretical concepts more clearly and structurally by providing corrective questions that improve the reader's understanding. (Student 8)</p> <p>For example, by regenerating or bringing up the discussion, the result of the language is more than once, later I choose which one is the most relative, structured, theoretical. (Student 10)</p>	
		<p>How does using the Paragraph AI application affect your ability to better</p>	<p>Using Paragraph AI significantly improved my ability to convey theoretical ideas and</p>

		<p>communicate theoretical ideas and thoughts in your writing?</p>	<p>thoughts through writing. The suggestions and analysis from the app helped me clarify my arguments and link them to concrete and strong supporting evidence. (Student 1)</p> <p>Using Paragraph AI improved my ability to convey theoretical ideas that are more structured, complete, and supported by strong arguments. (Student 2)</p> <p>The use of the app has improved my ability to convey theoretical ideas and thoughts better in writing. So, I have become more practiced in identifying core concepts and organizing them logically. (Student 3)</p> <p>The use of the AI paragraph app affected my ability to better convey theoretical ideas and thoughts in my writing as it helped me to identify and correct potential flaws in my written expression. (Student 4)</p> <p>The use of Paragraph AI app affects my ability to better convey theoretical ideas and thoughts in writing as it helps me to improve</p>
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			<p>the structure and content of your writing. (Student 5)</p> <p>The use of Paragraph AI has definitely improved my ability to convey theoretical ideas and thoughts better in my writing because it helps me organize information more effectively as I said earlier. (Student 6)</p> <p>The use of Paragraph AI improved my ability to convey theoretical ideas by providing more detailed feedback on my writing. (Student 7)</p> <p>The use of Paragraph AI app affects my ability to better convey theoretical ideas and thoughts in my writing as it helps me to identify and correct potential flaws in my written expression. (Student 8)</p> <p>The use of Paragraph AI greatly affects my ability to convey my theoretical ideas and thoughts, because by using Paragraph AI, I can shorten the way of explaining information and also the ideas that I want to write. (Student 9)</p>
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			<p>By finding the ideas or topics that are most relevant to my needs, then I generate them in my own language. (Student 10)</p>
		<p>Please explain how the Paragraph AI application has helped you improve your ability to express theoretical ideas and thoughts more fluently and effectively when writing!</p>	<p>Such as helping me express theoretical ideas more fluently through the features of outline creation, logic flow checking, and sentence improvement suggestions. (Student 2)</p> <p>Paragraph AI app helped me in improving my ability to express theoretical ideas and thoughts by providing a kind of immediate feedback on the clarity or cohesion and structure of my writing. (Student 3)</p> <p>AI Paragraph app has helped me in improving the ability to express theoretical ideas and thoughts fluently and effectively while writing by providing structured and focused feedback on important aspects of the writing. (Student 4)</p> <p>Paragraph AI app has helped me improve the ability to express theoretical ideas and thoughts more fluently and effectively while writing as its features help in editing and</p>

		<p>fixing problems in the writing as well as providing specific improvement suggestions. (Student 5)</p> <p>So, the Paragraph AI app has definitely helped me improve my ability to express my theoretical ideas and thoughts more fluently and effectively as it provides tools that make it easier to organize my writing. (Student 6)</p> <p>Paragraph AI improved my ability to express theoretical ideas and thoughts in my writing by providing tools for analysis and improvement. (Student 7)</p> <p>The Paragraph AI application has helped me to improve my ability to express ideas and theoretical thoughts more fluently, by helping me to create an idea or a main point that I should include in the Paragraph that I write. (Student 9)</p> <p>With the many new ideas that came up, which I had not thought of before, it was there and given from Paragraph AI. (Student 10)</p>
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<p>Problem-Solving Process (Nejad, et.al, 2022)</p>	<p>Students are able to assess which thoughts or ideas they can put into writing and which they should ignore.</p>	<p>What kind of explanation did your lecturer give regarding selecting ideas and thoughts that should or should not be used in a piece of writing?</p>	<p>My lecturer explained the importance of having ideas that are original and relevant to the topic, and the importance of avoiding overly generalized thinking. (Student 1)</p> <p>My lecturer explained the importance of choosing ideas or thoughts that are relevant to the writing topic and how to organize them logically and persuasively. (Student 3)</p> <p>My lecturer probably explained the selection of ideas and thoughts that should be used in a piece of writing based on relevance, accuracy, and contribution to the overall argument. (Student 4)</p> <p>The lecturer explained the selection of ideas and thoughts that should be used in a piece of writing by emphasizing the importance of relevance, credibility, and clarity in presenting the argument. (Student 5)</p> <p>So, my lecturer often emphasizes that it is important to choose relevant ideas and also strong arguments and</p>
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			<p>avoid unsupportive thoughts in a piece of writing. (Student 6)</p> <p>The lecturer provides guidelines for choosing relevant ideas and emphasizes the importance of harmony of ideas in writing. (Student 7)</p> <p>Paragraph AI app has helped me to improve my ability to express ideas and theoretical thoughts more fluently and effectively during writing by providing structured and focused feedback on important aspects of the writing. (Student 8)</p> <p>The type of explanation given by my lecturer regarding the selection of ideas and thoughts that should be used is to choose an idea that we are interested in or we know something about, so that it will help make it easier for us to write a Paragraph. (Student 9)</p> <p>My lecturer's advice is to choose which topic is the most relate and latest and also with valid sources. (Student 10)</p>
		How does Paragraph AI help students evaluate and sift through	Paragraph AI helps students by providing automatic analysis of

		<p>thoughts or ideas worth including in their writing?</p>	<p>the thoughts or ideas they convey in a paragraph. It allows students to evaluate the clarity, consistency, and relevance of their thoughts. (Student 1)</p> <p>Paragraph AI helps evaluate and sort out viable ideas by identifying their strengths, weaknesses, and relevance to the main argument. (Student 2)</p> <p>This app helps me evaluate my thoughts or ideas by providing an in-depth analysis of the text I have written. (Student 3)</p> <p>Paragraph AI helps students evaluate and sort out thoughts or ideas by providing an analysis of the clarity, cohesion, and structure of the paragraph with their writing so that they can identify the thoughts or ideas that are worth writing about. (Student 4)</p> <p>Paragraph AI assists students in evaluating and sorting out thoughts or ideas by providing an analysis of the fit of the content to the topic as well as suggestions for improvement to</p>
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		<p>enhance the quality of the writing. (Student 5)</p> <p>Of course, I think Paragraph AI helps students by presenting summaries and key points of complex texts and also helps them evaluate and sort out thoughts or ideas that are worthy of being included in their writing. (Student 6)</p> <p>Paragraph AI helps students evaluate and sort out thoughts or ideas by providing an analysis of the clarity, cohesion and structure of the paragraphs in their writing so that they can identify thoughts or ideas that are worth writing about. (Student 8)</p> <p>Paragraph AI helps students in evaluating and sorting out thoughts or ideas that are worth writing in their writing by giving suggestions or we can write suggestions in the Paragraph AI application so that we ourselves can choose what we should write and choose to write a Paragraph. (Student 9)</p> <p>Paragraph AI helps by giving new ideas that we used to be confused</p>
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			<p>about so many sources, but in Paragraph AI it gives the whole idea in one template in a straightforward, firm, and structured manner. (Student 10)</p>
		<p>Please explain how Paragraph AI facilitates students in identifying and evaluating ideas relevant to their academic writing topics!</p>	<p>Paragraph AI facilitates students by providing an in-depth analysis of the ideas they convey in their academic writing. It helps in identifying ideas that fit the topic of the writing and evaluating their relevance. (Student 1)</p> <p>Paragraph AI facilitates the identification of relevant ideas by analyzing the appropriateness of the topic, extracting key ideas, and finding connections to the main argument. (Student 2)</p> <p>Paragraph AI facilitates students by providing an in-depth analysis of the analyzed text, then allowing them to identify and also evaluate ideas relevant to their writing topic. (Student 3)</p> <p>Paragraph AI facilitates students to identify and evaluate ideas relevant to the topic of their academic writing by providing feedback on the overall quality of the writing. (Student 4)</p>

		<p>Paragraph AI app facilitates students to identify and evaluate ideas relevant to the topic of academic writing through analyzing the structure, content, and style of writing. (Student 5)</p> <p>So, Paragraph AI certainly facilitates students by analyzing text structure and presenting summaries and key points so that they can identify and evaluate ideas relevant to their academic writing topics. (Student 6)</p> <p>Paragraph AI provides analysis and feedback, and also facilitates students to identify and evaluate ideas relevant to the topic of their academic writing. (Student 7)</p> <p>Paragraph AI facilitates me to identify and evaluate ideas relevant to the topic of academic writing by providing feedback on clarity, cohesion and overall quality of writing. (Student 8)</p> <p>Definitely in Paragraph AI they limit the idea generation, but there are some new ideas that</p>
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			will be a bit more relevant to my writing. (Student 10)
		How does Paragraph AI differentiate between relevant and irrelevant thoughts or ideas in academic writing?	<p>Paragraph AI uses natural language processing and machine learning technologies to distinguish between relevant thoughts and irrelevant topics in academic writing. (Student 1)</p> <p>Paragraph AI distinguishes between relevant and irrelevant ideas by assessing the context, detecting statements that support or contradict the thesis, and ranking them based on their relevance. (Student 2)</p> <p>The app uses text analysis features that can then distinguish between relevant and irrelevant thoughts or ideas in academic writing. (Student 3)</p> <p>Paragraph AI distinguishes between relevant and irrelevant thoughts or ideas in academic writing by analyzing the clarity, cohesion, and structure of paragraphs and by providing specific recommendations for improvement. (Student 4)</p> <p>AI paragraphs</p>

		<p>distinguish between relevant and irrelevant thoughts or ideas in academic writing by providing an analysis of consistency, coherence, and clarity of information. (Student 5)</p> <p>This Paragraph AI distinguishes between relevant thoughts or ideas by showing the key points of the text related to the topic of the student's academic writing. (Student 6)</p> <p>Paragraph AI uses algorithms to distinguish between relevant and irrelevant thoughts or ideas in one's academic writing. (Student 7)</p> <p>Through analyzing the clarity, punctuation and structure of paragraphs and by providing specific recommendations for improvement. (Student 8)</p> <p>Paragraph AI distinguishes between relevant and irrelevant thoughts or ideas in academic writing by filtering information from the idea and also through the title and also through the way of writing. (Student 9)</p>
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			<p>Of course, they will not generate new topics or ideas that are not related to the keywords or topics that I am looking for. (Student 10)</p>
		<p>What specific features in Paragraph AI assist students in understanding and assessing thoughts or ideas that align with the goals of their writing?</p>	<p>Special features in Paragraph AI include syntax analysis, consistency evaluation, and relevance assessment in the context of academic writing. All of them help students understand and assess the thoughts or ideas that fit the purpose of their writing. (Student 1)</p> <p>The special or main features include concept mapping, key idea summarization, coherence checking, and argument development suggestions that suit the purpose of our writing. (Student 2)</p> <p>The text analysis feature is a feature that really helps students to understand the thoughts or ideas contained in the text that has been written and there is also a mapping feature that makes it easier for students to organize information or ideas that have been written</p>

			<p>and then see their relevance to the topic that has been written. (Student 3)</p> <p>Specific features in AI paragraphs that assist students in understanding and assessing the thoughts or ideas that fit the purpose of their writing include clarity, cohesion, and paragraph structure analysis as well as customized improvement suggestions. (Student 4)</p> <p>Specific features in AI Paragraphs that assist students in understanding and assessing thoughts or ideas include language error detection, analysis of coherence and coercion, and content improvement suggestions. (Student 5)</p> <p>For the special features in Paragraph AI such as text structure analysis, automatic summary, and selection of key points, it certainly helps students in understanding and assessing thoughts or ideas that are suitable for the purpose of their writing. (Student 6)</p> <p>I think the special</p>
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		<p>features such as coherence analysis help students in understanding and assessing thoughts or ideas according to the purpose of their writing. (Student 7)</p> <p>It helps students understand and assess thoughts or ideas in line with the purpose of the writing, including analysis of clarity, cohesion and paragraph structure as well as customized improvement suggestions. (Student 8)</p> <p>The first special feature that I like the most is the feature to generate new topics or ideas, because that will bring up new ideas for my next discussion. (Student 10)</p>	<p>For example, Paragraph AI can highlight thoughts that are too general or not directly related to the topic of the writing, helping students to determine what should be emphasized and what should be ignored. (Student 1)</p> <p>Paragraph AI can help me with things like identifying the main ideas that should be emphasized, such as the</p>
		<p>Please provide a concrete example of how Paragraph AI helps students determine which thoughts or ideas should be emphasized in their writing, and which should be disregarded!</p>	

		<p>importance of a communicative approach, and ignoring ideas that are less relevant or commonly known. (Student 2)</p> <p>For example, paragraph AI can help students determine the thoughts and ideas that should be emphasized in their writing by highlighting unclear or incohesive passages and suggesting relevant improvements. (Student 4)</p> <p>For example, students use Paragraph AI to determine which thoughts or ideas should be emphasized in their writing based on their fit with the topic and their significance in determining the argument. (Student 5)</p> <p>For example, Paragraph AI can help students by highlighting key points from the text related to their topic. So, they can determine which thoughts or ideas should be emphasized in their writing. (Student 6)</p> <p>Through analysis and recommendation, Paragraph AI helps students determine</p>
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		<p>which thoughts should be emphasized in their writing. (Student 7)</p> <p>Paragraph AI can help students determine which thoughts or ideas should be emphasized in their writing by highlighting unclear or incohesive passages and suggesting relevant corrections. (Student 8)</p> <p>The ones that should be ignored are the ones with the least solidity or lack of ambiguity and validity, but the ones that should be used are the ones that are the strongest to put our next ideas and thoughts on. (Student 10)</p>	
		<p>In your opinion, to what extent is Paragraph AI effective in helping students improve their skills in evaluating and selecting relevant thoughts or ideas to include in academic writing?</p>	<p>Paragraph AI can be very effective in helping students improve their skills in evaluating and selecting relevant thoughts or ideas, especially when used in an integrated manner with humanized learning and understanding. (Student 1)</p> <p>I think it is very effective in helping evaluate and select relevant ideas through context analysis, identification of support or</p>

		<p>counterarguments, and suggestions for their development. (Student 2)</p> <p>Paragraph AI is effective in helping students improve their skills in evaluating and selecting relevant thoughts because it also provides a text analysis feature which then makes it easier for students to identify thoughts or ideas that are relevant to the topic of their writing. (Student 3)</p> <p>Paragraph AI is effective in helping students improve their skills with evaluating and selecting relevant thoughts or ideas to include in academic writing by providing structured and focused feedback. (Student 4)</p> <p>So far, Paragraph AI is effective in helping students improve their skills in evaluating and selecting relevant thoughts or ideas as it provides detailed analysis tools and consumptive improvement suggestions. (Student 5)</p> <p>Indeed, Paragraph AI is very effective in helping students</p>
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		<p>improve their skills in evaluating and also selecting relevant thoughts or ideas to include in academic writing because it provides tools that make information selection easier. (Student 6)</p> <p>By providing structured and focused feedback. How does the Paragraph AI app help students build strong arguments in their writing? By providing analysis on clarity, cohesion and paragraph structure so as to construct consistent and persuasive arguments. (Student 8)</p> <p>Paragraph AI is very effective in helping students improve their skills in evaluating and selecting relevant thoughts in academic writing by selecting information that is related to something academic and also removing information that is not academic. (Student 9)</p> <p>I think it is good enough, but as students we also have to be selective because this is just technology and we cannot depend 100% on this application.</p>
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	<p>Students are able to build strong arguments in their writing.</p>	<p>How does the Paragraph AI application help students build strong arguments in their writing?</p>	<p>(Student 10)</p> <p>Paragraph AI helps students by analyzing the clarity, cohesion, and relevance of the arguments they build in their writing. (Student 1)</p> <p>It helps build arguments by analyzing logical gaps, recommending supporting evidence, and suggesting persuasive argument structures. (Student 2)</p> <p>The Paragraph AI app helps students build strong arguments by providing features such as in-depth text analysis, mapping which can then help them to organize information logically as well as persuasively. (Student 3)</p> <p>By providing analysis on cohesion clarity and paragraph structure so that they can construct consistent and persuasive arguments. (Student 4)</p> <p>The Paragraph AI app helps students build strong arguments in their writing by providing an evaluation of the consistency,</p>
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			<p>coherence, and relevance of information. (Student 5)</p> <p>The Paragraph AI app helps students build strong arguments in their writing by providing summaries and key points from texts relevant to their topic. (Student 6)</p> <p>The Paragraph AI application helps students build strong arguments in their writing by creating a conclusion that can contain the arguments that students make in their writing. (Student 9)</p> <p>Of course, back again with statements that are very, very relate and also previously directly related to the writer's idea. (Student 10)</p>
		<p>What are the main features of Paragraph AI that support students in developing the ability to construct strong arguments?</p>	<p>Key features of Paragraph AI include flagging of unclear arguments, identification of contradictory thinking, and suggestions for improving argument structure. All of these support students in developing the ability to build strong arguments. (Student 1)</p> <p>The main features</p>

		<p>include checking the flow of logic, identifying thesis statements, as well as suggestions for strengthening premises and examples of good argument structure. (Student 2)</p> <p>The mapping feature is very helpful for organizing information and identifying the relevance between complex concepts. (Student 3)</p> <p>Key features of AI paragraphs that support students in developing strong argument building skills include analysis of cohesion clarity and paragraph structure and specific suggestions for improvement. (Student 4)</p> <p>Key features of Paragraph AI that support students in developing strong argument building skills include detection of key language errors, analysis of coherence and correction, and suggestions for content improvement. (Student 5)</p> <p>For the key features of Paragraph AI that will support students in</p>
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		<p>developing strong argument building skills include text structure analysis, automatic summarization, and selecting key points. (Student 6)</p> <p>Key features such as coherence analysis support students in developing the ability to develop strong arguments in their writing. (Student 7)</p> <p>Includes analysis of clarity, punctuation and paragraph structure and specific suggestions for improvement. (Student 8)</p> <p>Features generating new topics by coming up with new ideas that may have been previously related and then reaffirmed with new topics and a new style that is better understood. (Student 10)</p>	
		<p>How does the process of using Paragraph AI enhance students' ability to create consistent and persuasive arguments?</p>	<p>The process of using Paragraph AI to improve students' ability to construct consistent and persuasive arguments involves using automated analysis to identify weaknesses in arguments and provide recommendations for improvement. (Student)</p>

		<p>The process of using Paragraph AI improved argumentation skills by providing feedback on argument weaknesses, recommending improvements, and highlighting key statements that needed to be developed. (Student 2)</p> <p>Students can use this app to analyze texts relevant to their writing topic and can also identify strong arguments. By using the mapping feature, they can also organize information and build consistent and logical arguments. (Student 3)</p> <p>The process of using AI paragraphs in improving students' ability to construct consistent arguments and persuasion involves applying the improvement recommendations provided by the app to correct deficiencies in clarity, cohesion, and writing structure. (Student 4)</p> <p>The process of using Paragraph AI in improving students' ability to compose consistent and persuasive arguments involves utilizing the</p>
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			<p>improvement suggestions provided by the application. (Student 5)</p> <p>For the process of using Paragraph AI to improve this student's ability, crafting a consistent and persuasive argument will involve analyzing the text structure and key points to ensure their argument is well organized. (Student 6)</p> <p>Paragraph AI assists students in constructing consistent and persuasive arguments by providing suggestions for improvement. (Student 7)</p> <p>The process of using Paragraph AI in improving students' ability to construct consistent and persuasive arguments involves applying the improvement recommendations provided by the app to correct deficiencies in clarity, cohesion and structure. (Student 8)</p> <p>Paragraph AI improves students' ability to compose consistent and persuasive arguments by making conclusions from all the information that has been collected</p>
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			<p>in the application and making conclusions or the essence of the discussion of the writing. (Student 9)</p> <p>What is consistent and persuasive is of course by containing the necessary discussions and the discussions refer to discussions that can invite others or influence others. (Student 10)</p>
		<p>Please provide a concrete example of how students use Paragraph AI to improve the quality of arguments in their writing!</p>	<p>An example is when students use Paragraph AI to evaluate their arguments. The tool can provide feedback on the clarity of premises, discrepancies between claims and evidence, and provide suggestions to better strengthen the argument. (Student 1)</p> <p>For example, Paragraph AI can recommend examples or quotes that can strengthen my argument about the strengths or weaknesses of the book in explaining the concepts of word language. (Student 2)</p> <p>Maybe for example a student writing an essay on climate change can use this application to analyze related articles and also to build a strong argument to support the views of an</p>

			<p>author. (Student 3)</p> <p>For example, students can use AI paragraphs to identify sections in their writing that lack clarity or cohesiveness and then use the improvement suggestions provided by the app to improve the quality of the arguments in their writing. (Student 4)</p> <p>For example, students use Paragraph AI to improve the quality of arguments in their writing by considering the improvement suggestions provided to increase the coherence, coercion, and relevance of their arguments. (Student 5)</p> <p>For example, students can use this Paragraph AI to analyze texts that support or contradict their arguments, so that they can improve the quality of arguments in their writing by considering different perspectives. (Student 6)</p> <p>For example, Paragraph AI is used to identify weaknesses in arguments and suggest relevant improvements to their writing. (Student 7)</p>
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		<p>For example, I can use Paragraph AI to identify sections in my writing that lack clarity or cohesiveness and then use the improvement suggestions provided by the app to improve the quality of the argument in my writing. (Student 8)</p> <p>Paragraph AI is used by most students to improve the quality of their arguments and writing by collecting information and inputting it into the Paragraph AI application and asking for the conclusion or gist of their writing. (Student 9)</p> <p>Basically, students use new topics or ideas that arise from Paragraph Writing and critical students are certainly selective in choosing which topics or ideas are valid and can be used as strong arguments for the continuation of ideas. (Student 10)</p>
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7. DOCUMENT ANALYSIS RESULT

Dioba Meliza Karlita

IS SOCIAL MEDIA MORE HARMFUL THAN BENEFICIAL FOR SOCIETY?

No.	Critical Thinking Level	Indicators	Yes	No	Notes
1	Unreflective Thinker	13. Students write without considering their own biases, assumptions, or preconceptions		✓	-
		14. Fail to evaluate the credibility of sources or the validity of arguments presented.	✓		The text mentions issues but does not provide specific sources or evidence to validate the claims.
		15. Transition between paragraphs or sections may be weak or nonexistent		✓	-
		16. Often submit work without thoroughly revising or editing, leading to grammatical errors, typos, and unclear expressions		✓	-
		17. Fail to support arguments or claims with relevant evidence or examples.	✓		While the text raises important points, it lacks specific evidence or examples to support the claims.
		18. Fail to explore varied sentence structures or use language creatively to engage the reader.		✓	-
2	Challenged Thinker	13. Students struggle to structure ideas logically, resulting in a lack of		✓	-

		coherence and flow in the writing.			
		14. Face challenges in expressing ideas clearly and concisely.		✓	-
		15. Display difficulties in applying proper grammar rules, leading to frequent errors in sentence construction.		✓	-
		16. Face challenges in generating original and creative ideas.		✓	-
		17. Struggle with the revision process, making it challenging to identify and correct errors in the writing.		✓	-
		18. Fail to effectively integrate supporting evidence or examples to strengthen arguments.	✓		The text lacks specific supporting evidence or examples.
3	Beginning Thinker	13. Lack a clear introduction, body, and conclusion in their writing.		✓	-
		14. Rely on a limited range of vocabulary, resulting in simplistic and repetitive language.		✓	-
		15. Face challenges in smoothly transitioning between paragraphs or ideas.		✓	-
		16. Demonstrate inconsistencies in applying grammar rules and may make frequent errors in punctuation and sentence structure.		✓	-
		17. Struggle to articulate a clear purpose or main idea in the writing.		✓	-
		18. Face challenges in adapting writing style to		✓	-

		suit different audiences or purposes.			
4	Practicing Thinker	13. Set clear goals for writing projects, whether it's improving clarity, refining argumentation, or enhancing creativity.	✓		-
		14. Utilize a variety of reputable sources to support arguments and strengthen the overall quality of writing.		✓	The text does not cite specific sources.
		15. Take the time to polish and refine writing, paying attention to grammar, punctuation, and overall coherence.	✓		-
		16. Construct well-organized and cohesive pieces of writing with a clear introduction, body, and conclusion.	✓		-
		17. Understand and follows a structured writing process, including brainstorming, drafting, revising, and editing.	✓		-
		18. Work towards conveying ideas in a concise and easily understandable manner.	✓		-
5	Advanced Thinker	11. Utilize advanced vocabulary and sentence structures to convey ideas with precision and impact.	✓		-
		12. Construct well-organized and structurally sound pieces of writing with seamless transitions.	✓		-
		13. Pay attention to detail, ensuring flawless grammar, punctuation, and syntax.	✓		-

		14. Showcase a high degree of originality and creativity in generating ideas.		✓	While well-articulated, the ideas themselves are common and not particularly original .
		15. Innovatively combine different perspectives to bring freshness to the writing.	✓		-
6.	Master Thinker	11. Utilize advanced vocabulary and sentence structures to convey ideas with precision and impact.	✓		-
		12. Showcase a high degree of originality and creativity in generating ideas and presenting them in a unique and engaging manner		✓	The ideas, while well-presented, are not highly original or unique.
		13. Construct compelling and sophisticated arguments, considering multiple viewpoints and anticipating counterarguments.	✓		-
		14. Exhibit a nuanced and precise command of language to convey complex ideas clearly.	✓		-
		15. Construct well-organized and structurally sound pieces of writing with seamless transitions and a clear sense of purpose.	✓		-

Wulandari***IS SOCIAL MEDIA MORE HARMFUL THAN BENEFICIAL FOR SOCIETY?***

No.	Critical Thinking Level	Indicators	Yes	No	Notes
1	Unreflective Thinker	19. Students write without considering their own biases, assumptions, or preconceptions		✓	The text considers both positive and negative aspects of social media, indicating an attempt to consider multiple perspectives.
		20. Fail to evaluate the credibility of sources or the validity of arguments presented.	✓		The text mentions issues but does not provide specific sources or evidence to validate the claims.
		21. Transition between paragraphs or sections may be weak or nonexistent	✓		Some transitions between paragraphs could be smoother to maintain a better flow.
		22. Often submit work without thoroughly revising or editing, leading to grammatical errors, typos, and unclear expressions	✓		There are some grammatical errors, awkward expressions, and issues with coherence in some parts.
		23. Fail to support arguments or claims with relevant evidence or examples.	✓		While the text raises important points, it lacks specific evidence or examples to support the claims.
		24. Fail to explore varied sentence structures or		✓	-

		use language creatively to engage the reader.			
2	Challenged Thinker	19. Students struggle to structure ideas logically, resulting in a lack of coherence and flow in the writing.		✓	-
		20. Face challenges in expressing ideas clearly and concisely.	✓		Some sentences are unclear and could be more concise.
		21. Display difficulties in applying proper grammar rules, leading to frequent errors in sentence construction.	✓		There are some grammatical errors and awkward sentence constructions.
		22. Face challenges in generating original and creative ideas.		✓	-
		23. Struggle with the revision process, making it challenging to identify and correct errors in the writing.	✓		The text appears to need more revision and editing.
		24. Fail to effectively integrate supporting evidence or examples to strengthen arguments.	✓		The text lacks specific supporting evidence or examples.
3	Beginning Thinker	19. Lack a clear introduction, body, and conclusion in their writing.		✓	-
		20. Rely on a limited range of vocabulary, resulting in simplistic and repetitive language.		✓	-
		21. Face challenges in smoothly transitioning between paragraphs or ideas.	✓		Some transitions between ideas could be smoother.
		22. Demonstrate inconsistencies in applying grammar rules and may make frequent	✓		There are some noticeable grammatical errors and

		errors in punctuation and sentence structure.			punctuation issues.
		23. Struggle to articulate a clear purpose or main idea in the writing.		✓	-
		24. Face challenges in adapting writing style to suit different audiences or purposes.		✓	-
4	Practicing Thinker	19. Set clear goals for writing projects, whether it's improving clarity, refining argumentation, or enhancing creativity.	✓		-
		20. Utilize a variety of reputable sources to support arguments and strengthen the overall quality of writing.		✓	The text does not cite specific sources.
		21. Take the time to polish and refine writing, paying attention to grammar, punctuation, and overall coherence.		✓	The text needs more polishing and refining.
		22. Construct well-organized and cohesive pieces of writing with a clear introduction, body, and conclusion.	✓		-
		23. Understand and follows a structured writing process, including brainstorming, drafting, revising, and editing.		✓	The text appears to need more thorough revision and editing.
		24. Work towards conveying ideas in a concise and easily understandable manner.	✓		-
5	Advanced Thinker	16. Utilize advanced vocabulary and sentence structures to convey ideas with precision and impact.		✓	The text does not utilize advanced vocabulary or sentence structures consistently.

		17. Construct well-organized and structurally sound pieces of writing with seamless transitions.	✓	The writing is organized but lacks seamless transitions, especially towards the end.
		18. Pay attention to detail, ensuring flawless grammar, punctuation, and syntax.	✓	There are noticeable grammatical and punctuation errors.
		19. Showcase a high degree of originality and creativity in generating ideas.	✓	While well-articulated, the ideas themselves are common and not particularly original .
		20. Innovatively combine different perspectives to bring freshness to the writing.	✓	The text combines different perspectives but lacks freshness and innovation.
6.	Master Thinker	16. Utilize advanced vocabulary and sentence structures to convey ideas with precision and impact.	✓	The text does not utilize advanced vocabulary or sentence structures consistently.
		17. Showcase a high degree of originality and creativity in generating ideas and presenting them in a unique and engaging manner	✓	The ideas, while well-presented, are not highly original or unique.
		18. Construct compelling and sophisticated arguments, considering multiple viewpoints and anticipating counterarguments.	✓	The arguments are not highly sophisticated and do not anticipate counterarguments effectively.
		19. Exhibit a nuanced and precise command of language to convey	✓	The language used is not nuanced or

		complex ideas clearly.			precise enough for complex ideas.
		20. Construct well-organized and structurally sound pieces of writing with seamless transitions and a clear sense of purpose.		✓	The writing lacks seamless transitions and a clear sense of purpose in some parts.

Delfi Rara Anjesika

IS SOCIAL MEDIA MORE HARMFUL THAN BENEFICIAL FOR SOCIETY?

No.	Critical Thinking Level	Indicators	Yes	No	Notes
1	Unreflective Thinker	25. Students write without considering their own biases, assumptions, or preconceptions		✓	The text considers both positive and negative aspects of social media, indicating an attempt to consider different perspectives.
		26. Fail to evaluate the credibility of sources or the validity of arguments presented.	✓		The text mentions issues but does not provide specific sources or evidence to validate the claims.
		27. Transition between paragraphs or sections may be weak or nonexistent		✓	-
		28. Often submit work without thoroughly revising or editing, leading to grammatical errors, typos, and unclear expressions		✓	-
		29. Fail to support arguments or claims with relevant evidence or examples.	✓		While the text raises important points, it lacks specific evidence or examples to support the claims.
		30. Fail to explore varied sentence structures or use language creatively		✓	-

		to engage the reader.			
2	Challenged Thinker	25. Students struggle to structure ideas logically, resulting in a lack of coherence and flow in the writing.		✓	-
		26. Face challenges in expressing ideas clearly and concisely.		✓	-
		27. Display difficulties in applying proper grammar rules, leading to frequent errors in sentence construction.		✓	-
		28. Face challenges in generating original and creative ideas.		✓	-
		29. Struggle with the revision process, making it challenging to identify and correct errors in the writing.		✓	-
		30. Fail to effectively integrate supporting evidence or examples to strengthen arguments.	✓		The text lacks specific supporting evidence or examples.
3	Beginning Thinker	25. Lack a clear introduction, body, and conclusion in their writing.		✓	-
		26. Rely on a limited range of vocabulary, resulting in simplistic and repetitive language.		✓	-
		27. Face challenges in smoothly transitioning between paragraphs or ideas.		✓	-
		28. Demonstrate inconsistencies in applying grammar rules and may make frequent errors in punctuation and sentence structure.		✓	-

		29. Struggle to articulate a clear purpose or main idea in the writing.		✓	-
		30. Face challenges in adapting writing style to suit different audiences or purposes.		✓	-
4	Practicing Thinker	25. Set clear goals for writing projects, whether it's improving clarity, refining argumentation, or enhancing creativity.	✓		-
		26. Utilize a variety of reputable sources to support arguments and strengthen the overall quality of writing.		✓	The text does not cite specific sources.
		27. Take the time to polish and refine writing, paying attention to grammar, punctuation, and overall coherence.	✓		-
		28. Construct well-organized and cohesive pieces of writing with a clear introduction, body, and conclusion.	✓		-
		29. Understand and follows a structured writing process, including brainstorming, drafting, revising, and editing.	✓		-
		30. Work towards conveying ideas in a concise and easily understandable manner.	✓		-
5	Advanced Thinker	21. Utilize advanced vocabulary and sentence structures to convey ideas with precision and impact.	✓		-
		22. Construct well-organized and structurally sound pieces of writing with	✓		-

		seamless transitions.			
		23. Pay attention to detail, ensuring flawless grammar, punctuation, and syntax.	✓		-
		24. Showcase a high degree of originality and creativity in generating ideas.		✓	The ideas, while well-presented, are not highly original or unique.
		25. Innovatively combine different perspectives to bring freshness to the writing.	✓		-
6.	Master Thinker	21. Utilize advanced vocabulary and sentence structures to convey ideas with precision and impact.	✓		-
		22. Showcase a high degree of originality and creativity in generating ideas and presenting them in a unique and engaging manner		✓	The ideas, while well-presented, are not highly original or unique.
		23. Construct compelling and sophisticated arguments, considering multiple viewpoints and anticipating counterarguments.	✓		-
		24. Exhibit a nuanced and precise command of language to convey complex ideas clearly.	✓		-
		25. Construct well-organized and structurally sound pieces of writing with seamless transitions and a clear sense of purpose.	✓		-

Dwiki

NO SPECIFIC TITLE

No.	Critical Thinking Level	Indicators	Yes	No	Notes
1	Unreflective Thinker	31. Students write without considering their own biases, assumptions, or preconceptions		✓	The text considers both positive and negative aspects of social media, indicating an attempt to consider different perspectives.
		32. Fail to evaluate the credibility of sources or the validity of arguments presented.	✓		The text mentions issues but does not provide specific sources or evidence to validate the claims.
		33. Transition between paragraphs or sections may be weak or nonexistent		✓	-
		34. Often submit work without thoroughly revising or editing, leading to grammatical errors, typos, and unclear expressions		✓	-
		35. Fail to support arguments or claims with relevant evidence or examples.	✓		While the text raises important points, it lacks specific evidence or examples to support the claims.
		36. Fail to explore varied sentence structures or use language creatively to engage the reader.		✓	-

2	Challenged Thinker	31. Students struggle to structure ideas logically, resulting in a lack of coherence and flow in the writing.		✓	-
		32. Face challenges in expressing ideas clearly and concisely.		✓	-
		33. Display difficulties in applying proper grammar rules, leading to frequent errors in sentence construction.		✓	-
		34. Face challenges in generating original and creative ideas.		✓	-
		35. Struggle with the revision process, making it challenging to identify and correct errors in the writing.		✓	-
		36. Fail to effectively integrate supporting evidence or examples to strengthen arguments.	✓		The text lacks specific supporting evidence or examples.
3	Beginning Thinker	31. Lack a clear introduction, body, and conclusion in their writing.		✓	-
		32. Rely on a limited range of vocabulary, resulting in simplistic and repetitive language.		✓	-
		33. Face challenges in smoothly transitioning between paragraphs or ideas.		✓	-
		34. Demonstrate inconsistencies in applying grammar rules and may make frequent errors in punctuation and sentence structure.		✓	-
		35. Struggle to articulate a clear purpose or main		✓	-

		idea in the writing.			
		36. Face challenges in adapting writing style to suit different audiences or purposes.		✓	-
4	Practicing Thinker	31. Set clear goals for writing projects, whether it's improving clarity, refining argumentation, or enhancing creativity.	✓		-
		32. Utilize a variety of reputable sources to support arguments and strengthen the overall quality of writing.		✓	The text does not cite specific sources.
		33. Take the time to polish and refine writing, paying attention to grammar, punctuation, and overall coherence.	✓		-
		34. Construct well-organized and cohesive pieces of writing with a clear introduction, body, and conclusion.	✓		-
		35. Understand and follows a structured writing process, including brainstorming, drafting, revising, and editing.	✓		-
		36. Work towards conveying ideas in a concise and easily understandable manner.	✓		-
5	Advanced Thinker	26. Utilize advanced vocabulary and sentence structures to convey ideas with precision and impact.	✓		-
		27. Construct well-organized and structurally sound pieces of writing with seamless transitions.	✓		-

		28. Pay attention to detail, ensuring flawless grammar, punctuation, and syntax.	✓		-
		29. Showcase a high degree of originality and creativity in generating ideas.		✓	The ideas, while well-presented, are not highly original or unique.
		30. Innovatively combine different perspectives to bring freshness to the writing.	✓		-
6.	Master Thinker	26. Utilize advanced vocabulary and sentence structures to convey ideas with precision and impact.	✓		-
		27. Showcase a high degree of originality and creativity in generating ideas and presenting them in a unique and engaging manner		✓	The ideas, while well-presented, are not highly original or unique.
		28. Construct compelling and sophisticated arguments, considering multiple viewpoints and anticipating counterarguments.	✓		-
		29. Exhibit a nuanced and precise command of language to convey complex ideas clearly.	✓		-
		30. Construct well-organized and structurally sound pieces of writing with seamless transitions and a clear sense of purpose.	✓		-

Melati***IS SOCIAL MEDIA MORE HARMFUL THAN BENEFICIAL FOR SOCIETY?***

No.	Critical Thinking Level	Indicators	Yes	No	Notes
1	Unreflective Thinker	37. Students write without considering their own biases, assumptions, or preconceptions		✓	The text considers both positive and negative aspects of social media, indicating an attempt to consider multiple perspectives.
		38. Fail to evaluate the credibility of sources or the validity of arguments presented.	✓		The text mentions studies but does not provide specific sources or evidence to validate the claims.
		39. Transition between paragraphs or sections may be weak or nonexistent		✓	-
		40. Often submit work without thoroughly revising or editing, leading to grammatical errors, typos, and unclear expressions		✓	-
		41. Fail to support arguments or claims with relevant evidence or examples.	✓		While the text raises important points, it lacks specific evidence or examples to

					support the claims.
		42. Fail to explore varied sentence structures or use language creatively to engage the reader.		✓	-
2	Challenged Thinker	37. Students struggle to structure ideas logically, resulting in a lack of coherence and flow in the writing.		✓	-
		38. Face challenges in expressing ideas clearly and concisely.		✓	-
		39. Display difficulties in applying proper grammar rules, leading to frequent errors in sentence construction.		✓	-
		40. Face challenges in generating original and creative ideas.		✓	-
		41. Struggle with the revision process, making it challenging to identify and correct errors in the writing.		✓	-
		42. Fail to effectively integrate supporting evidence or examples to strengthen arguments.	✓		The text lacks specific supporting evidence or examples.
3	Beginning Thinker	37. Lack a clear introduction, body, and conclusion in their writing.		✓	-
		38. Rely on a limited range of vocabulary, resulting in simplistic and repetitive language.		✓	-
		39. Face challenges in smoothly transitioning between paragraphs or ideas.		✓	-

		40. Demonstrate inconsistencies in applying grammar rules and may make frequent errors in punctuation and sentence structure.		✓	-
		41. Struggle to articulate a clear purpose or main idea in the writing.		✓	-
		42. Face challenges in adapting writing style to suit different audiences or purposes.		✓	-
4	Practicing Thinker	37. Set clear goals for writing projects, whether it's improving clarity, refining argumentation, or enhancing creativity.	✓		-
		38. Utilize a variety of reputable sources to support arguments and strengthen the overall quality of writing.		✓	The text does not cite specific sources.
		39. Take the time to polish and refine writing, paying attention to grammar, punctuation, and overall coherence.	✓		-
		40. Construct well-organized and cohesive pieces of writing with a clear introduction, body, and conclusion.	✓		-
		41. Understand and follows a structured writing process, including brainstorming, drafting, revising, and editing.	✓		-
		42. Work towards conveying ideas in a concise and easily understandable manner.	✓		-
5	Advanced Thinker	31. Utilize advanced vocabulary and sentence structures to convey	✓		-

		ideas with precision and impact.			
		32. Construct well-organized and structurally sound pieces of writing with seamless transitions.	✓		-
		33. Pay attention to detail, ensuring flawless grammar, punctuation, and syntax.	✓		-
		34. Showcase a high degree of originality and creativity in generating ideas.		✓	While well-articulated, the ideas themselves are common and not particularly original .
		35. Innovatively combine different perspectives to bring freshness to the writing.	✓		-
6.	Master Thinker	31. Utilize advanced vocabulary and sentence structures to convey ideas with precision and impact.	✓		-
		32. Showcase a high degree of originality and creativity in generating ideas and presenting them in a unique and engaging manner		✓	The ideas, while well-presented, are not highly original or unique.
		33. Construct compelling and sophisticated arguments, considering multiple viewpoints and anticipating counterarguments.	✓		-
		34. Exhibit a nuanced and precise command of language to convey complex ideas clearly.	✓		-

		35. Construct well-organized and structurally sound pieces of writing with seamless transitions and a clear sense of purpose.	✓		-
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Rahma

THE DUAL NATURE OF SOCIAL MEDIA: ADVANTAGES AND DRAWBACKS

No.	Critical Thinking Level	Indicators	Yes	No	Notes
1	Unreflective Thinker	43. Students write without considering their own biases, assumptions, or preconceptions		✓	The text considers both positive and negative aspects of social media, indicating an attempt to consider multiple perspectives.
		44. Fail to evaluate the credibility of sources or the validity of arguments presented.	✓		The text mentions issues but does not provide specific sources or evidence to validate the claims.
		45. Transition between paragraphs or sections may be weak or nonexistent	✓		The transition between paragraphs could be smoother to maintain a better flow.
		46. Often submit work without thoroughly revising or editing, leading to grammatical errors, typos, and unclear expressions	✓		There are some grammatical errors and typos, such as "drawbacks" instead of "drawbacks".
		47. Fail to support arguments or claims	✓		While the text raises important

		with relevant evidence or examples.			points, it lacks specific evidence or examples to support the claims.
		48. Fail to explore varied sentence structures or use language creatively to engage the reader.		✓	-
2	Challenged Thinker	43. Students struggle to structure ideas logically, resulting in a lack of coherence and flow in the writing.		✓	-
		44. Face challenges in expressing ideas clearly and concisely.		✓	-
		45. Display difficulties in applying proper grammar rules, leading to frequent errors in sentence construction.	✓		There are some grammatical errors and awkward sentence constructions.
		46. Face challenges in generating original and creative ideas.		✓	-
		47. Struggle with the revision process, making it challenging to identify and correct errors in the writing.	✓		The text appears to need more revision and editing.
		48. Fail to effectively integrate supporting evidence or examples to strengthen arguments.	✓		The text lacks specific supporting evidence or examples.
3	Beginning Thinker	43. Lack a clear introduction, body, and conclusion in their writing.		✓	-
		44. Rely on a limited range of vocabulary, resulting in simplistic and		✓	-

		repetitive language.			
		45. Face challenges in smoothly transitioning between paragraphs or ideas.	✓		Some transitions between ideas could be smoother.
		46. Demonstrate inconsistencies in applying grammar rules and may make frequent errors in punctuation and sentence structure.	✓		There are some noticeable grammatical errors and punctuation issues.
		47. Struggle to articulate a clear purpose or main idea in the writing.		✓	-
		48. Face challenges in adapting writing style to suit different audiences or purposes.		✓	-
4	Practicing Thinker	43. Set clear goals for writing projects, whether it's improving clarity, refining argumentation, or enhancing creativity.	✓		-
		44. Utilize a variety of reputable sources to support arguments and strengthen the overall quality of writing.		✓	The text does not cite specific sources.
		45. Take the time to polish and refine writing, paying attention to grammar, punctuation, and overall coherence.		✓	The text needs more polishing and refining.
		46. Construct well-organized and cohesive pieces of writing with a clear introduction, body, and conclusion.	✓		-
		47. Understand and follows a structured writing process, including brainstorming, drafting, revising, and editing.		✓	The text appears to need more thorough revision and editing.

		48. Work towards conveying ideas in a concise and easily understandable manner.	✓		-
5	Advanced Thinker	36. Utilize advanced vocabulary and sentence structures to convey ideas with precision and impact.		✓	The text does not utilize advanced vocabulary or sentence structures consistently.
		37. Construct well-organized and structurally sound pieces of writing with seamless transitions.		✓	The writing is organized but lacks seamless transitions, especially towards the end.
		38. Pay attention to detail, ensuring flawless grammar, punctuation, and syntax.		✓	There are noticeable grammatical and punctuation errors.
		39. Showcase a high degree of originality and creativity in generating ideas.		✓	While well-articulated, the ideas themselves are common and not particularly original .
		40. Innovatively combine different perspectives to bring freshness to the writing.		✓	The text combines different perspectives but lacks freshness and innovation.
6.	Master Thinker	36. Utilize advanced vocabulary and sentence structures to convey ideas with precision and impact.		✓	The text does not utilize advanced vocabulary or sentence structures consistently.
		37. Showcase a high degree of originality		✓	The ideas, while

		and creativity in generating ideas and presenting them in a unique and engaging manner			well-presented, are not highly original or unique.
		38. Construct compelling and sophisticated arguments, considering multiple viewpoints and anticipating counterarguments.		✓	The arguments are not highly sophisticated and do not anticipate counterarguments effectively.
		39. Exhibit a nuanced and precise command of language to convey complex ideas clearly.		✓	The language used is not nuanced or precise enough for complex ideas.
		40. Construct well-organized and structurally sound pieces of writing with seamless transitions and a clear sense of purpose.		✓	The writing lacks seamless transitions and a clear sense of purpose in some parts.

Abdul Karim Amrullah

IS SOCIAL MEDIA MORE HARMFUL THAN BENEFICIAL FOR SOCIETY?

No.	Critical Thinking Level	Indicators	Yes	No	Notes
1	Unreflective Thinker	1. Students write without considering their own biases, assumptions, or preconceptions		✓	The text considers both positive and negative aspects of social media, indicating an attempt to consider different perspectives.
		2. Fail to evaluate the credibility of sources or the validity of arguments presented.	✓		The text mentions issues but does not provide specific sources or evidence to validate the claims.
		3. Transition between paragraphs or sections may be weak or nonexistent		✓	-
		4. Often submit work without thoroughly revising or editing, leading to grammatical errors, typos, and unclear expressions		✓	-
		5. Fail to support arguments or claims with relevant evidence or examples.	✓		While the text raises important points, it lacks specific evidence or examples to support the claims.
		6. Fail to explore varied sentence structures or		✓	-

		use language creatively to engage the reader.			
2	Challenged Thinker	1. Students struggle to structure ideas logically, resulting in a lack of coherence and flow in the writing.		✓	-
		2. Face challenges in expressing ideas clearly and concisely.		✓	-
		3. Display difficulties in applying proper grammar rules, leading to frequent errors in sentence construction.		✓	-
		4. Face challenges in generating original and creative ideas.	✓		The ideas, while well-presented, are not original or unique.
		5. Struggle with the revision process, making it challenging to identify and correct errors in the writing.		✓	-
		6. Fail to effectively integrate supporting evidence or examples to strengthen arguments.	✓		The text lacks specific supporting evidence or examples.
3	Beginning Thinker	1. Lack a clear introduction, body, and conclusion in their writing.		✓	-
		2. Rely on a limited range of vocabulary, resulting in simplistic and repetitive language.		✓	-
		3. Face challenges in smoothly transitioning between paragraphs or ideas.		✓	-
		4. Demonstrate inconsistencies in applying grammar rules and may make frequent errors in punctuation		✓	-

		and sentence structure.			
		5. Struggle to articulate a clear purpose or main idea in the writing.		✓	-
		6. Face challenges in adapting writing style to suit different audiences or purposes.		✓	-
4	Practicing Thinker	1. Set clear goals for writing projects, whether it's improving clarity, refining argumentation, or enhancing creativity.	✓		-
		2. Utilize a variety of reputable sources to support arguments and strengthen the overall quality of writing.		✓	The text does not cite specific sources.
		3. Take the time to polish and refine writing, paying attention to grammar, punctuation, and overall coherence.	✓		-
		4. Construct well-organized and cohesive pieces of writing with a clear introduction, body, and conclusion.	✓		-
		5. Understand and follows a structured writing process, including brainstorming, drafting, revising, and editing.	✓		-
		6. Work towards conveying ideas in a concise and easily understandable manner.	✓		-
5	Advanced Thinker	1. Utilize advanced vocabulary and sentence structures to convey ideas with precision and impact.	✓		-
		2. Construct well-organized and structurally sound	✓		-

		pieces of writing with seamless transitions.			
		3. Pay attention to detail, ensuring flawless grammar, punctuation, and syntax.	✓		-
		4. Showcase a high degree of originality and creativity in generating ideas.		✓	The ideas, while well-presented, are not highly original or unique.
		5. Innovatively combine different perspectives to bring freshness to the writing.	✓		-
6.	Master Thinker	1. Utilize advanced vocabulary and sentence structures to convey ideas with precision and impact.	✓		-
		2. Showcase a high degree of originality and creativity in generating ideas and presenting them in a unique and engaging manner		✓	The ideas, while well-presented, are not highly original or unique.
		3. Construct compelling and sophisticated arguments, considering multiple viewpoints and anticipating counterarguments.	✓		-
		4. Exhibit a nuanced and precise command of language to convey complex ideas clearly.	✓		-
		5. Construct well-organized and structurally sound pieces of writing with seamless transitions and a clear sense of purpose.	✓		-

Anne

NO SPECIFIC TITLE

No.	Critical Thinking Level	Indicators	Yes	No	Notes
1	Unreflective Thinker	7. Students write without considering their own biases, assumptions, or preconceptions		✓	The text considers both positive and negative aspects of social media, indicating an attempt to consider multiple perspectives.
		8. Fail to evaluate the credibility of sources or the validity of arguments presented.	✓		The text mentions issues but does not provide specific sources or evidence to validate the claims.
		9. Transition between paragraphs or sections may be weak or nonexistent	✓		Some transitions between paragraphs could be smoother.
		10. Often submit work without thoroughly revising or editing, leading to grammatical errors, typos, and unclear expressions	✓		There are some grammatical errors and awkward expressions, particularly in the conclusion.
		11. Fail to support arguments or claims with relevant evidence or examples.	✓		While the text raises important points, it lacks specific evidence or examples to support the claims.
		12. Fail to explore varied sentence structures or use language creatively to engage the reader.		✓	-

2	Challenged Thinker	7. Students struggle to structure ideas logically, resulting in a lack of coherence and flow in the writing.		✓	-
		8. Face challenges in expressing ideas clearly and concisely.		✓	-
		9. Display difficulties in applying proper grammar rules, leading to frequent errors in sentence construction.	✓		There are some grammatical errors and awkward sentence constructions.
		10. Face challenges in generating original and creative ideas.		✓	-
		11. Struggle with the revision process, making it challenging to identify and correct errors in the writing.	✓		The text appears to need more revision and editing.
		12. Fail to effectively integrate supporting evidence or examples to strengthen arguments.	✓		The text lacks specific supporting evidence or examples.
3	Beginning Thinker	7. Lack a clear introduction, body, and conclusion in their writing.		✓	-
		8. Rely on a limited range of vocabulary, resulting in simplistic and repetitive language.		✓	-
		9. Face challenges in smoothly transitioning between paragraphs or ideas.	✓		Some transitions between ideas could be smoother.
		10. Demonstrate inconsistencies in applying grammar rules and may make frequent errors in punctuation and sentence structure.	✓		There are some noticeable grammatical errors and punctuation issues.

		11. Struggle to articulate a clear purpose or main idea in the writing.		✓	-
		12. Face challenges in adapting writing style to suit different audiences or purposes.		✓	-
4	Practicing Thinker	7. Set clear goals for writing projects, whether it's improving clarity, refining argumentation, or enhancing creativity.	✓		-
		8. Utilize a variety of reputable sources to support arguments and strengthen the overall quality of writing.		✓	The text does not cite specific sources.
		9. Take the time to polish and refine writing, paying attention to grammar, punctuation, and overall coherence.		✓	The text needs more polishing and refining.
		10. Construct well-organized and cohesive pieces of writing with a clear introduction, body, and conclusion.	✓		-
		11. Understand and follows a structured writing process, including brainstorming, drafting, revising, and editing.		✓	The text appears to need more thorough revision and editing.
		12. Work towards conveying ideas in a concise and easily understandable manner.	✓		-
		5	Advanced Thinker	6. Utilize advanced vocabulary and sentence structures to convey ideas with precision and impact.	
7. Construct well-organized and structurally sound				✓	The writing is organized but lacks seamless

		pieces of writing with seamless transitions.			transitions, especially towards the end.
		8. Pay attention to detail, ensuring flawless grammar, punctuation, and syntax.		✓	There are noticeable grammatical and punctuation errors.
		9. Showcase a high degree of originality and creativity in generating ideas.		✓	While well-articulated, the ideas themselves are common and not particularly original .
		10. Innovatively combine different perspectives to bring freshness to the writing.		✓	The text combines different perspectives but lacks freshness and innovation.
6.	Master Thinker	6. Utilize advanced vocabulary and sentence structures to convey ideas with precision and impact.		✓	The text does not utilize advanced vocabulary or sentence structures consistently.
		7. Showcase a high degree of originality and creativity in generating ideas and presenting them in a unique and engaging manner		✓	The ideas, while well-presented, are not highly original or unique.
		8. Construct compelling and sophisticated arguments, considering multiple viewpoints and anticipating counterarguments.		✓	The arguments are not highly sophisticated and do not anticipate counterarguments effectively.
		9. Exhibit a nuanced and precise command of language to convey complex ideas clearly.		✓	The language used is not nuanced or precise enough for complex ideas.

		10. Construct well-organized and structurally sound pieces of writing with seamless transitions and a clear sense of purpose.		✓	The writing lacks seamless transitions and a clear sense of purpose in some parts.
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Fahmi Alfarissi

NO SPECIFIC TITLE

No.	Critical Thinking Level	Indicators	Yes	No	Notes
1	Unreflective Thinker	13. Students write without considering their own biases, assumptions, or preconceptions		✓	The text considers both positive and negative aspects of social media, indicating an attempt to consider different perspectives.
		14. Fail to evaluate the credibility of sources or the validity of arguments presented.	✓		The text mentions issues but does not provide specific sources or evidence to validate the claims.
		15. Transition between paragraphs or sections may be weak or nonexistent		✓	-
		16. Often submit work without thoroughly revising or editing, leading to grammatical errors, typos, and unclear expressions		✓	-
		17. Fail to support arguments or claims with relevant evidence or examples.	✓		While the text raises important points, it lacks specific evidence or examples to

					support the claims.
		18. Fail to explore varied sentence structures or use language creatively to engage the reader.		✓	-
2	Challenged Thinker	13. Students struggle to structure ideas logically, resulting in a lack of coherence and flow in the writing.		✓	-
		14. Face challenges in expressing ideas clearly and concisely.		✓	-
		15. Display difficulties in applying proper grammar rules, leading to frequent errors in sentence construction.		✓	-
		16. Face challenges in generating original and creative ideas.		✓	-
		17. Struggle with the revision process, making it challenging to identify and correct errors in the writing.		✓	-
		18. Fail to effectively integrate supporting evidence or examples to strengthen arguments.	✓		The text lacks specific supporting evidence or examples.
3	Beginning Thinker	13. Lack a clear introduction, body, and conclusion in their writing.		✓	-
		14. Rely on a limited range of vocabulary, resulting in simplistic and repetitive language.		✓	-
		15. Face challenges in smoothly transitioning between paragraphs or ideas.		✓	-

		16. Demonstrate inconsistencies in applying grammar rules and may make frequent errors in punctuation and sentence structure.		✓	-
		17. Struggle to articulate a clear purpose or main idea in the writing.		✓	-
		18. Face challenges in adapting writing style to suit different audiences or purposes.		✓	-
4	Practicing Thinker	13. Set clear goals for writing projects, whether it's improving clarity, refining argumentation, or enhancing creativity.	✓		-
		14. Utilize a variety of reputable sources to support arguments and strengthen the overall quality of writing.		✓	The text does not cite specific sources.
		15. Take the time to polish and refine writing, paying attention to grammar, punctuation, and overall coherence.	✓		-
		16. Construct well-organized and cohesive pieces of writing with a clear introduction, body, and conclusion.	✓		-
		17. Understand and follows a structured writing process, including brainstorming, drafting, revising, and editing.	✓		-
		18. Work towards conveying ideas in a concise and easily understandable manner.	✓		-
5	Advanced	11. Utilize advanced vocabulary and sentence structures to convey	✓		-

	Thinker	ideas with precision and impact.			
		12. Construct well-organized and structurally sound pieces of writing with seamless transitions.	✓		-
		13. Pay attention to detail, ensuring flawless grammar, punctuation, and syntax.	✓		-
		14. Showcase a high degree of originality and creativity in generating ideas.		✓	The ideas, while well-presented, are not highly original or unique.
		15. Innovatively combine different perspectives to bring freshness to the writing.	✓		-
6.	Master Thinker	11. Utilize advanced vocabulary and sentence structures to convey ideas with precision and impact.	✓		-
		12. Showcase a high degree of originality and creativity in generating ideas and presenting them in a unique and engaging manner		✓	The ideas, while well-presented, are not highly original or unique.
		13. Construct compelling and sophisticated arguments, considering multiple viewpoints and anticipating counterarguments.	✓		-
		14. Exhibit a nuanced and precise command of language to convey complex ideas clearly.	✓		-
		15. Construct well-organized and structurally sound pieces of writing with	✓		-

		seamless transitions and a clear sense of purpose.			
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Jesi Nuraini

NO SPECIFIC TITLE

No.	Critical Thinking Level	Indicators	Yes	No	Notes
1	Unreflective Thinker	19. Students write without considering their own biases, assumptions, or preconceptions		✓	The text considers both positive and negative aspects of social media, indicating an attempt to consider different perspectives.
		20. Fail to evaluate the credibility of sources or the validity of arguments presented.	✓		The text mentions issues but does not provide specific sources or evidence to validate the claims.
		21. Transition between paragraphs or sections may be weak or nonexistent	✓		The transition between the first paragraph and the concluding statements could be smoother.
		22. Often submit work without thoroughly revising or editing, leading to grammatical errors, typos, and unclear expressions	✓		There are some grammatical issues and awkward expressions, particularly in the final sentences.
		23. Fail to support arguments or claims with relevant evidence	✓		While the text raises important points, it lacks

		or examples.			specific evidence or examples to support the claims.
		24. Fail to explore varied sentence structures or use language creatively to engage the reader.	✓		The sentence structures are somewhat repetitive, especially towards the end.
2	Challenged Thinker	19. Students struggle to structure ideas logically, resulting in a lack of coherence and flow in the writing.	✓		The second paragraph lacks clear logical structuring, making it somewhat incoherent.
		20. Face challenges in expressing ideas clearly and concisely.	✓		Some sentences are unclear and could be more concise.
		21. Display difficulties in applying proper grammar rules, leading to frequent errors in sentence construction.	✓		There are some grammatical errors and awkward sentence constructions.
		22. Face challenges in generating original and creative ideas.		✓	-
		23. Struggle with the revision process, making it challenging to identify and correct errors in the writing.	✓		The text appears to need more revision and editing.
		24. Fail to effectively integrate supporting evidence or examples to strengthen arguments.	✓		The text lacks specific supporting evidence or examples.

3	Beginning Thinker	19. Lack a clear introduction, body, and conclusion in their writing.		✓	-
		20. Rely on a limited range of vocabulary, resulting in simplistic and repetitive language.	✓		The vocabulary is somewhat repetitive and simplistic.
		21. Face challenges in smoothly transitioning between paragraphs or ideas.	✓		The transition between the first and second paragraphs is weak.
		22. Demonstrate inconsistencies in applying grammar rules and may make frequent errors in punctuation and sentence structure.	✓		There are some noticeable grammatical errors and punctuation issues.
		23. Struggle to articulate a clear purpose or main idea in the writing.		✓	-
		24. Face challenges in adapting writing style to suit different audiences or purposes.		✓	-
4	Practicing Thinker	19. Set clear goals for writing projects, whether it's improving clarity, refining argumentation, or enhancing creativity.	✓		-
		20. Utilize a variety of reputable sources to support arguments and strengthen the overall quality of writing.		✓	The text does not cite specific sources.
		21. Take the time to polish and refine writing, paying attention to grammar, punctuation, and overall coherence.		✓	The text needs more polishing and refining.
		22. Construct well-	✓		The text is well-

		organized and cohesive pieces of writing with a clear introduction, body, and conclusion.			organized with a clear structure, but the coherence could be improved.
		23. Understand and follows a structured writing process, including brainstorming, drafting, revising, and editing.		✓	The text appears to need more thorough revision and editing.
		24. Work towards conveying ideas in a concise and easily understandable manner.		✓	Some ideas could be expressed more concisely and clearly.
5	Advanced Thinker	16. Utilize advanced vocabulary and sentence structures to convey ideas with precision and impact.		✓	The vocabulary and sentence structures are somewhat simplistic and repetitive.
		17. Construct well-organized and structurally sound pieces of writing with seamless transitions.		✓	The writing is organized but lacks seamless transitions, especially in the concluding statements.
		18. Pay attention to detail, ensuring flawless grammar, punctuation, and syntax.		✓	There are noticeable grammatical and punctuation errors.
		19. Showcase a high degree of originality and creativity in generating ideas.		✓	The ideas, while well-presented, are not highly original or unique.
		20. Innovatively combine different perspectives to bring freshness to the writing.		✓	The text combines different

					perspectives but lacks freshness and innovation.
6.	Master Thinker	16. Utilize advanced vocabulary and sentence structures to convey ideas with precision and impact.		✓	The text does not utilize advanced vocabulary or sentence structures.
		17. Showcase a high degree of originality and creativity in generating ideas and presenting them in a unique and engaging manner		✓	The ideas, while well-presented, are not highly original or unique.
		18. Construct compelling and sophisticated arguments, considering multiple viewpoints and anticipating counterarguments.		✓	The arguments are not highly sophisticated and do not anticipate counterarguments effectively.
		19. Exhibit a nuanced and precise command of language to convey complex ideas clearly.		✓	The language used is not nuanced or precise enough for complex ideas.
		20. Construct well-organized and structurally sound pieces of writing with seamless transitions and a clear sense of purpose.		✓	The writing lacks seamless transitions and a clear sense of purpose in some parts.

8. DOCUMENTATION





BIOGRAPHY



Chantika Nabilla is a talented young woman who was born in Lubuk Penyamun on March 28, 2002. She grew up in Lubuk Penyamun village and is the second of two children in her family. Chantika's parents, Wahina and Jon Efendi, have always given full support to their daughter's education and self-development.

Since childhood, Chantika showed great interest in learning and always excelled in school. She started her formal education at SDN 05 Merigi and graduated in the 2013/2014 academic year. Then, she continued her education at SMPN 1 Curup Selatan, where she further honed her academic skills until she graduated in the 2016/2017 academic year. Chantika's senior high school education was completed at SMAN 6 Kepahiang, with proud achievements, in the 2019/2020 school year.

In addition to her academic achievements, Chantika also has an interesting hobby, which is watching Korean dramas. This hobby not only provides entertainment, but also opens up insights and enriches her cultural knowledge. Chantika often utilizes this hobby to learn Korean on her own, which adds to her foreign language skills.

Chantika's big motivation in choosing the English major was her desire to improve her English skills. She realizes that good English skills are necessary to face global challenges in the future. Thus, she hopes to improve her competence and be ready to compete in an increasingly globalized world.

Chantika's decision to take this major is also supported by the view that language is the key to communication between nations. By mastering English, Chantika wants to open up greater opportunities for a career in various fields, both at home and abroad. She aspires to be an inspiring educator, who can share her knowledge with the younger generation, and contribute positively to the world of education.

Chantika Nabilla is a passionate and dedicated person. With a solid educational background and strong motivation to keep learning, she is ready to face the challenges ahead and realize her big dreams. The support from her family, especially from her parents, is one of the main drivers that makes her keep trying and not giving up easily.