Students' Perspectives on A Computer-Based Graphic Organizer with Embedded Self-Regulated Learning Strategies on the Argumentative Writing in Higher Education

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ABSTRACT

This study aimed to explore students' perspectives on the use of a computer-based graphic organizer with embedded self-regulated learning strategies for argumentative writing in higher education. The researchers conducted a qualitative study with blended ethnographic design to gather data on students' experiences and opinions regarding the use of this technology in their writing process. The participants were recruited using convenient sampling technique and there were 9 EFL students participated in this study. The findings indicated that the majority of students found the computer-based graphic organizer to be helpful in organizing their ideas, monitoring their progress, and regulating their learning strategies while writing argumentative essays in higher education. The students' positive perspectives on the use of this technology highlight its potential as an effective tool for enhancing argumentative writing skills in higher education. Furthermore, this study contributes to the growing body of research on the integration of technology and self-regulated learning strategies in writing instruction. The results of this study support the use of a computer-based graphic organizer with embedded self-regulated learning strategies as a valuable tool in higher education for improving students' argumentative writing skills.

Keywords: Computer-Based Graphic Organizer, Self-Regulated Learning Strategies, Argumentative Writing, Higher Education

Introduction

Argumentative writing skills are of great significance in higher education as they foster critical thinking, effective communication, and the ability to construct persuasive arguments (Evmenova et al., 2015; Unzueta & Barbetta, 2012). Developing strong argumentative writing

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skills requires students to engage in a variety of processes, including organizing their ideas, analysing evidence, and constructing coherent arguments (Evmenova et al., 2016; Mochizuki et al., 2019). However, many students struggle with these tasks and may benefit from the implementation of effective instructional strategies and tools that support their self-regulated learning during the writing process(Evmenova et al., 2020; Peltier et al., 2021; Schindler et al., 2017; Unzueta & Barbetta, 2012).The use of technology, specifically computer-based graphic organizers with embedded self-regulated learning strategies, has the potential to enhance students' argumentative writing skills in higher education by providing them with a structured framework for organizing their thoughts and guiding their writing process (Barstow et al., 2017; Brady et al., 2022). Computer-based graphic organizers are digital tools that allow students to visually organize their ideas and concepts (Brady et al., 2022). These organizers can provide a clear structure for students to organize their arguments and supporting evidence, making it easier for them to construct a coherent and persuasive essay (Evmenova et al., 2020). In addition, embedding self-regulated learning strategies within these graphic organizers can further support students in developing higher-level cognitive skills, such as goal setting, self-monitoring, and self-reflection (Evmenova et al., 2015). By combining technology and self-regulated learning strategies, students can become more active and independent learners in the writing process. They can take ownership of their learning, set specific goals for their writing, monitor their progress, and reflect on their strategies and improvements (Lai & Zheng, 2018). This innovative approach not only facilitates the development of argumentative writing skills but also promotes self-regulated learning, which is crucial for students to become successful writers in higher education.

Argumentative writing skills are considered crucial in higher education, as they help students to develop critical thinking, put thoughts across in an effective manner, and argue. Students are often confronted with such tasks and hence need innovative instructional strategies that can effectively support them. Technological enhancement through computer-based graphic organizers embedded within self-regulated learning strategies has proven to be a very promising intervention. These organize thoughts in a systematic framework for approach so as to foster higher-level cognitive skills in setting goals, self-monitoring, and self-reflection during the very writing process itself. It is relevant to understand how students perceive these tools and approach them in order to effectively implement their use. By considering how such attitudes, beliefs, and experiences reflect the product of instruction, educators are able to identify particular challenges in how they can best maximize the potential of technology-enhanced learning. Consequently, this study shall discover how students perceive computer-based graphic organizers and how this perception affects their argumentative writing skills.

Research on the use of computer-based graphic organizers with embedded self-regulated learning strategies in argumentative writing has shown promising results (An et al., 2021; Brady et al., 2022; Evmenova et al., 2016). Students who utilized these tools reported increased engagement, improved organization of ideas, and enhanced critical thinking skills. Moreover, their written essays demonstrated higher levels of coherence and persuasiveness. The integration of computer-based graphic organizers with embedded self-regulated learning strategies in argumentative writing instruction has the potential to significantly improve students' argumentation competence and overall writing skills (Brady et al., 2022; Evmenova et al., 2020). It has been found that there have been positive findings regarding the use of computer-based graphic organizers and self-regulated learning strategies in argumentative writing. However, there are still gaps in research that need to be addressed. Most studies have focused on quantitative measures of student outcomes, such as essay scores and organization of ideas. However, limited research has explored the qualitative aspects of student experiences

and perspectives when using these tools. Understanding how students perceive and interact with computer-based graphic organizers and self-regulated learning strategies can provide valuable insights into the effectiveness of these tools in supporting argumentative writing. A qualitative blended ethnographic approach is beneficial in gaining in-depth insights into students' experiences and perceptions of using computer-based graphic organizers with embedded self-regulated learning strategies in argumentative writing. This approach combines elements of traditional ethnography, such as participant observation and interviews, with digital tools that allow for online data collection and analysis. Using a qualitative blended ethnographic approach allows researchers to immerse themselves in the natural context of the classroom and observe students' interactions with computer-based graphic organizers.

Theoretical framework

Students' perceptions are crucial for the successful adoption and usage of educational technologies. Their beliefs, attitudes, and experiences might be influential in engaging them, motivating them, and hence in achieving good learning outcomes. We combined two of the most popular utilization of technology theories: Technology and Acceptance Model - TAM (Davis, 1989) and Task-Technology Fit-TTF (Goodhue & Thompson, 1995) considering CBGOs with embedded SRL strategies.

TAM and TTF are two major models in the information systems domain that focus on different aspects of information technology adoption. For example, while the focus of TAM is on the individual beliefs toward technology acceptance under the lens of perceived usefulness and perceived ease of use, TTF focuses on the user acceptance of the information systems by considering the fit between the task and technology characteristics. Thus, the approach of TAM and TTF toward understanding technology adoption although different is not contradictory, and acts in a complementary fashion.

Literature review

Self-regulated learning theories suggest that learners actively engage in the learning process by setting goals, planning their actions, monitoring their progress, and making adjustments as needed (Zimmerman, 1990, 2013). These theories emphasize the importance of metacognition, self-reflection, and self-control in promoting deep learning and academic success. In the context of writing instruction, self-regulated learning strategies can empower students to take ownership of their learning and develop essential skills in planning, organizing, and revising their writing (García-Sánchez & Fidalgo-Redondo, 2006). Using computer-based graphic organizers (CBGO) in combination with self-regulated learning strategies can provide students with effective tools for scaffolding their argumentative writing process (Evmenova et al., 2015). CBGOs can visually organize and structure their ideas, helping them plan their argument, identify supporting evidence, and create cohesive arguments.

Apart from assisting in the arrangement of ideas, the CBGO employed in the present study integrated multiple self-regulated learning techniques. Planning, motivation to learn, and metacognitive techniques serve as the guiding principles of self-regulated learning (Ellis & Zimmerman, 2001). While some students may effortlessly apply these SRL or metacognitive strategies to their learning, struggling learners may find this challenging. The strategies and techniques that writers employ to improve their abilities, stay on task, and produce better work are referred to as self-regulation of writing (Zimmerman & Risemberg, 1997). The implementation of SRL strategies is part of a cycle that starts with the planning stage and goes through the execution and self-reflection stages. Students use strategies including goal-setting

for their writing, strategic planning, and building self-belief about their task-completion and outcome expectations throughout the forethought phase. During the performance phase, learners employ strategies and track their task completion, while in the self-reflection phase, they assess and respond to their own work. Goal-setting, self-instruction, self-monitoring, and self-evaluation are thus examples of SRL strategies (Zimmerman, 1990, 2013). According to García-Sánchez & Fidalgo-Redondo (2006), students who use SRL methods are more motivated to study and achieve better academically than those who do not. Improved self-control enables students to keep an eye on their thoughts in order to meet academic objectives. In particular, SRL techniques can enhance each student's executive functioning, which could have a favorable effect on their writing skills (Rajabi, S. 2014).

In a higher education context, incorporating self-regulated learning strategies in argumentative writing can be highly beneficial for students (Harris et al., 2006). Studies have shown that when students employ self-regulated learning strategies in argumentative writing, they are better able to organize their ideas, stay focused on the topic, and produce higher quality arguments (Evmenova et al., 2015; Peltier et al., 2021; Zheng, 2016). Furthermore, self-regulated learning strategies in argumentative writing can contribute to improved critical thinking skills and an increased ability to effectively communicate ideas and persuade others (Winters et al., 2008). By actively engaging in the forethought phase of self-regulated learning, students can set clear goals, plan their arguments, and gather relevant evidence to support their claims. During the performance phase, students can implement strategies such as self-monitoring and self-reflection to ensure that their arguments are logical, coherent, and persuasive. The evaluation phase allows students to reflect on the effectiveness of their arguments and identify areas for improvement in future writing tasks.

Regardless of the students' abilities, argumentative writing can be particularly challenging for all students, especially in higher education. First of all, writing instruction usually does not highlight this form of writing, and students usually struggle to include relevant evidence to support their claims in written arguments (Bell & Linn, 2000; Reed et al., 2017). While primary instructors should start teaching argumentative writing in the early grades, they usually concentrate more on reading comprehension and the textual components of narrative texts. They rarely employ techniques to help with informational text reading and/or argumentative writing (Clark & Neal, 2018; Duke, 2000). Second, to write thoroughly investigated written feedback in response to prompts or text, one must have a solid comprehension of informational text structures. Actually, on half of the texts in the standardized tests, students must provide written responses to questions based on prompts or informational readings. These responses can even be brief essays. As grade levels rise, this number rises to 75% in the eighth grade, indicating a substantial increase in the kind of literature utilized in standardized tests (Jeong & Frye, 2020; Moss, 2005). To overcome these challenges, it is crucial for teachers to explicitly teach the structure and features of argumentative writing. By providing students with clear instruction and guided practice in argumentative writing, teachers can help students develop the necessary skills to effectively communicate their ideas, analyse different perspectives, and construct well-supported arguments.

Technology can help with many aspects of writing, such as structure and mechanics, regardless of the skills and needs of students. CBGOs, or computer-based graphic organizers, are digital versions of paper-based graphic organizers that assist students in arranging their ideas visually before writing. A small number of studies (Boykin et al., 2019; Evmenova et al., 2020; Hughes et al., 2019a, 2019b; Ponce et al., 2013; Unzueta & Barbetta, 2012) examined at how CBGOs affect different writing genres, such as narrative and persuasive essays. The majority of participants demonstrate an increase in word count and improved writing quality when utilizing

CBGOs as a pre-writing assistance. A meta-analysis on the usage of computer-based graphic organizers (Ciullo & Reutebuch, 2013) supported these findings by pointing to CBGOs as a viable strategy for assisting all writers when writing across the curriculum. In the context of argumentative writing, CBGOs facilitate the creation of concept maps and make connections between ideas and supporting data while writing in the social studies and science subjects. It has been discovered that CBGOs work well for students with and without disabilities (e.g., Ponce et al., 2013; Sturm & Rankin-Erickson, 2002). CBGOs are a useful technique for raising writing quality by instructing students, particularly those who struggle, on how to plan and arrange their ideas. According to recent studies (Boykin et al., 2019; Evmenova et al., 2020), middle school students who used a CBGO with embedded self-regulated learning (SRL) strategies to produce a persuasive essay had positive writing outcomes.

Research questions

This research is intended to fill this gap and provide a more comprehensive understanding of how students perceive and engage with computer-based graphic organizers and self-regulated learning strategies in argumentative writing instruction. This understanding can inform instructional practices and further enhance the integration of these tools into the writing curriculum. By giving voice to students' perspectives and experiences, this research can shed light on the potential benefits and challenges of using computer-based graphic organizers and self-regulated learning strategies in argumentative writing instruction. Therefore, this research is guided by the research question "what are students' perspectives of computer-based graphic organizer with embedded self-regulated learning strategies on the argumentative writing in higher education?"

Methodology

Research Design

This study employed a qualitative research method with a blended ethnographic design (Kozinets, 2010). This method and design were chosen to capture the complex nature of students' experiences and perceptions regarding the use of computer-based graphic organizers and self-regulated learning strategies in writing. This allowed researchers to explore and probe potential qualitative data which had been left-out by previous investigations.

Participants

This study used convenient sampling technique (Kothari, 2004). Researchers invited the higher education students participate in this study across two universities and higher education institutions in South Sulawesi. The criteria included students who were currently enrolled in argumentative essay writing courses, had previous experience using computer-based graphic organizers and they are willing to participate in a maximum of three interview sessions. 25 students applied, but only nine had the criteria while the other students are not willing to participate.

Data Collection

The data were collected through a combination of observations, interviews, and document analysis. We observed students as they used computer-based graphic organizers during the writing process by using video recording and observation protocol which included taking notes about the phenomenon in the argumentative essay writing class. The recorded data then stored in my laptop t be used in data analysis. In addition, we conducted three interview sessions to gather their perceptions and experiences, and analysing any relevant documents such as

students' written work. The interview was in Indonesian then translated to English and recorded using an audio recorder with approval from each participant. There were three main stages in this data collection. Firstly, all participants were contacted and asked for their availability. Participants could choose to be interviewed online and offline at their convenient location or the assigned room provided by researchers or interview via online using WhatsApp. Secondly, participants were interviewed by the first and second authors. The interview ran about 60 min in each session, with a maximum of three sessions for each participant. Both interviewers adhered to the same guideline and procedures. "How do you perceive the usefulness of computer-based graphic organizers in helping you engage in self-regulated learning for argumentative essay writing?", "did you find computer-based graphic organizers easy to use as you worked on your English writing assignments?", "How do you feel about using computer-based graphic organizers to help you learn and improve your English writing independently? Do you like it, and does it make learning more enjoyable for you?" were three examples of the interview questions.

Ethical Consideration

Ethical considerations were taken into account throughout the study. Participants were informed about the purpose of the study, their rights as participants, and the confidentiality of their responses. Participants were also given the option to withdraw their participation at any time without facing any negative consequences. The researchers obtained informed consent from all participants prior to data collection and ensured that their identities remained confidential. Only the first and second authors had direct access to the data because all recorded interviews were kept on a password-protected computer at STKIP YPUP Makassar, Indonesia. Written records (such as interview notes) were kept secure in a cabinet that was locked. The participants' safety, privacy, and well-being were given first priority in this study, which adhered closely to the ethical approval that was provided.

Data Analysis

In this qualitative study, we applied the most popular method for examining respondent responses that was theme analysis (Braun et al., 2019). The audio files were transcribed by the researchers, who then used theme analysis to examine them. The focus of this research is on identifying, analysing, and exploring patterns in the data that highlight the significance of a carefully designed and thought-out dataset description. To maintain participant anonymity, a code was given to them. The identified themes and subthemes pertaining to writing activities using computer-based graphic organizers were demonstrated by the results. We combined the TAM (Davis, 1989) and TTF (Goodhue & Thompson, 1995) to analyse the data about the students' perspectives. According to Braun et al. (2019), subthemes offer bigger themes structure, while themes themselves play a significant role in data depending on the research question expressing a structured response level or meaning in a dataset. Three things were found in this study: perceived usefulness, perceived ease of use, attitude toward use, technology characteristics, individual characteristics, and actual use.

Validity and Reliability

Validity and reliability were addressed in this study to ensure the accuracy and consistency of the findings. To ensure that the study had sufficient internal validity, other expert researchers evaluated the interview guide. Additionally, to ensure consistency in their methods, both interviewers practiced the process. To prevent bias during the thematic analysis, a separate group of academics at Universitas Negeri Makassar was consulted on the emerging themes that emerged from the data analysis. Because the analysis and data collecting were conducted

concurrently, the data were considered dependable or consistent after the findings showed data saturation.

Results

The analysis of the data revealed several key themes and patterns related to participant perspectives. These themes and patterns provide valuable insights into the participants' perceptions and experiences related to writing activities using computer-based graphic organizers. The key themes and patterns identified include the perceived usefulness of computer-based graphic organizers in writing activities, the perceived ease of use of these tools, attitudes towards using them, the role of technology characteristics in influencing usage, the influence of individual characteristics on perceptions and attitudes, and the actual use of computer-based graphic organizers in writing activities.

Perceived Usefulness

The 'perceived usefulness' theme is labelled as such as EFL students found computer-based graphic organizers to be highly beneficial in facilitating their writing activities. The data for this theme are explored in the following detail analysis.

Extract 1

> *"Menurut saya CBGO ini membantu saya dalam proses self-regulated learning atau pembelajaran Mandiri. jadi setelah misalnya Mam di kelas menjelaskan, sampai di rumah pun saya bisa tetap belajar menulis essay dengan menggunakan teknologi-teknologi ini". (Interview: FL,2024)*
>
> "In my opinion, this CBGO helps me in the process of self-regulated learning. So, after, for example, Mom explains in class, I can still continue learning to write essays at home using these technologies" (Interview: FL,2024)

Extract 2

> *"Yes mam, CBGO sangat membantu. Tersedianya aplikasi ini bisa membuat proses penulisan lebih efisien dan dapat dengan mudah mengedit dan mengatur pekerjaan kami." (Interview, KN 2024)*
>
> "Yes, ma'am, CBGO is very helpful. The availability of this application can make the writing process more efficient and allows us to easily edit and organize our work." (Interview, KN 2024)

Extract 3

> *"Iya menurut saya penggunaan CBGO ini sangat membantu saya untuk mencapai tujuan saya di awal semester" (Interview, KT 2024)*
>
> "Yes, in my opinion, the use of this CBGO has greatly helped me in achieving my goals at the beginning of the semester. "(Interview, KT 2024)

The interview extracts (1-3) reveal a unanimous perception among participants regarding the considerable benefits of CBGO (Computer-Based Guided Learning) in facilitating their learning process. Notably, interviewees across sessions highlight CBGO's role in fostering self-regulated learning by enabling continuous learning beyond the classroom, indicating its support for autonomy and initiative in directing one's learning journey. Moreover, the efficiency-enhancing features of CBGO are emphasized, with interviewees noting its capacity to

streamline writing tasks and provide ease in editing and organizing work, thereby enhancing productivity and effectiveness. Additionally, respondents highlight CBGO's contribution to goal achievement, with one expressing confidence in its significant role in attaining academic objectives early in the semester. Collectively, these findings highlight CBGO's perceived usefulness in supporting diverse aspects of the learning experience, suggesting its potential as a valuable tool for enhancing student learning outcomes.

Perceived Ease of Use

The 'perceived ease of use' theme is labelled as such as EFL students found computer-based graphic organizers to be intuitive and user-friendly. The data for this theme illustrate the participants' perspectives on the ease of using these tools. The data for this theme are explored in the following detail analysis.

Extract 4

> *"Iya Mam menurut saya penggunaan CBGO ini sangat mudah mam. contohnya Mam kemudahan untuk mengembangkan ide-ide saya, untuk memudahkan saya untuk memperbaiki grammar saya lalu juga membantu saya mempelajari atau membedakan bagian-bagian dari essay writing seperti Introduction part, body and conclusion part." (Interview, FL 2024)*
>
> Yes, ma'am, in my opinion, the use of this CBGO is very convenient, ma'am. For example, ma'am, it facilitates the development of my ideas, making it easier for me to improve my grammar, and it also helps me learn or distinguish the different parts of essay writing, such as the introduction, body, and conclusion. (Interview, FL 2024)

Extract 5

> *"Menurut saya cukup mudah dalam mengerjakan tugas essay karena CBGO tersebut memiliki banyak fitur yang sangat mudah dipahami dalam proses penulisan esai." (Interview, STF 2024)*
>
> According to me, it is quite easy to work on essay assignments because the CBGO have many features that are very easy to understand in the essay writing process. (Interview, STF 2024)

Extract 6

> *"Secara teknis CBGO ini sangat mudah digunakan menurut saya karena dapat diakses melalui handphone jadi sangat terbantu kepada mahasiswa atau penulis-penulis di mana mereka belum mempunyai laptop atau computer" (Interview, STF 2024)*
>
> From a technical standpoint, the CBGO is very user-friendly, according to me, because they can be accessed through a mobile phone, providing great assistance to students or writers who may not have a laptop or computer. (Interview, STF 2024)

Extract 7

> *"Saya merasa mudah dalam menulis essay, karena saya merasa penggunaan CBGO atau WEGO RIITE ini bisa mengatur pembelajaran saya secara mandiri untuk menyelesaikan tugas menulis saya." (Interview, LSN 2024)*
>
> I feel comfortable in writing essays because I believe that using CBGO or WEGO RIITE can help me organize my learning independently to complete my writing assignments. (Interview, LSN 2024)

Extract 8

> *"CBGO atau WEGO RIITE Seperti yang saya gunakan beberapa minggu lalu itu sangat memudahkan saya dalam mengerjakan essay, karena sudah disediakan panduannya dan masing-masing disertai dengan video tutorial" (Interview, TG 2024)*
>
> "CBGO or WEGO RIITE, like the one I used a few weeks ago, greatly facilitated me in working on the essay because it provided guidance, each accompanied by video tutorials." (Interview, TG 2024)

The interview extracts (4-8) illustrate a consistent perception among respondents regarding the ease of use of CBGO (Computer-Based Guided Learning). Participants across various sessions express how CBGO simplifies the essay writing process by providing user-friendly features and accessible platforms, such as mobile phone access, which is particularly beneficial for those without laptops or computers. Additionally, respondents highlight specific functionalities of CBGO, including idea development assistance, grammar improvement tools, and guidance on essay structure (e.g., introduction, body, conclusion). Furthermore, the inclusion of video tutorials enhances the ease of understanding and utilization of CBGO for writing assignments. Overall, these findings highlight the perceived ease of use of CBGO, with respondents attributing its user-friendly nature to its capacity to streamline the essay writing process and support independent learning, thus enhancing the overall learning experience for students and writers.

Attitude Toward Use

The 'attitude toward use' theme is labelled as such as EFL students consistently expressed positive attitudes and perceptions towards the use of Computer-Based Guided Learning. The data for this theme are explored in the following detail analysis.

Extract 9

> *"Saya senang dan suka menggunakan CBGO tersebut mam dan membuat pembelajaran lebih menyenangkan karena pembuatan essay-nya jadi lebih praktis mam jadi Saya suka" (Interview, FL 2024)*
>
> "I am happy and enjoy using CBGO, ma'am, and it makes learning more enjoyable because essay writing becomes more practical, ma'am. So, I like it." (Interview, FL 2024)

Extract 10

> *"... tetapi saya tidak menyerahkan sepenuhnya kepada CBGO tersebut sebagai human mengontrol yang mana dan juga yang tidak perlu". (Interview, LSN 2024)*
>
> "...but I do not entirely rely on the CBGO as humans' control what is necessary and what is not". (Interview, LSN 2024)

The extract 9 shed light on the varied attitudes towards the use of CBGO (Computer-Based Guided Learning) among respondents. In the first excerpt, the respondent expresses a positive sentiment, stating their happiness and enjoyment in using CBGO. They highlight how CBGO makes learning more enjoyable by rendering essay writing more practical, thus indicating a favourable disposition towards the technology. Conversely, in the extract 10, another respondent adopts a more cautious approach towards CBGO reliance. While acknowledging the utility of CBGO, they express a reluctance to fully depend on it, emphasizing the importance of human control in discerning what aspects require intervention. This nuanced perspective reflects a balanced attitude, acknowledging the benefits of CBGO while also recognizing the necessity of human oversight and decision-making. Overall, these findings highlight the diverse

attitudes towards the use of CBGO, ranging from enthusiasm to cautious reliance, highlighting the complexity of individuals' perceptions and behaviors towards technology integration in learning contexts.

Technology Characteristics

The 'technology characteristics' theme is labelled as such as EFL students expressed diverse perspectives on the technological features of CBGO that influenced their learning experience. The data for this theme are explored in the following detailed analysis.

Extract 11

> *"Fitur dari CBGO atau WEGO RIITE ini sangat membantu yaitu, Saya mungkin agak lupa tapi fiturnya sangat membantu itu dalam penulisan 3 statement untuk pendahuluan isi dan penutup dan memberikan kesimpulan mungkin itu sangat membantu saya dan beberapa fitur yang di mana kita bisa melihat penggunaan kosakata ada berapa Ada berapa jumlah kata dan juga penggunaan transitional Word yang membuat tulisan kita menjadi lebih nyambung" (Interview, STF 2024)*
>
> "The features of CBGO or WEGO RIITE are very helpful; although I might be a bit forgetful, those features are very helpful in writing the three statements for the introduction, body, and conclusion, and providing a conclusion. Perhaps it is very helpful for me, and some features allow us to see the vocabulary usage, word count, and also the use of transitional words, which make our writing more coherent." (Interview, STF 2024)

Extract 12

> *"CBGO atau WEGO RIITE itu sendiri ada fitur di mana yang terakhir yaitu ada pilihan kata-kata atau hal-hal yang menurut Kami merasa perlu ditingkatkan Jadi kami memberi tanda-tanda ke setiap kalimat-kalimat yang ditanyakan tentang evaluasi Apakah kami sudah menggunakan kata-kata tersebut secara benar atau tidak. jadi tentunya kita menyadari ada hal yang kurang jadi secara tidak langsung sebenarnya WEGO RIITE ini membantu kita juga memahami tentang kekurangan kita dalam penulisan yang telah kita lakukan itu. Fitur yang menurut saya sangat berkontribusi dalam pengembangan penulisan saya dan hampir semua fitur yang WEGO RIITE miliki adalah fitur yang bermanfaat untuk saya karena ada ruang yang memperlihatkan seberapa banyak kata yang kami gunakan . secara pribadi saya setuju kalau semua fitur yang ada di CBGO atau WEGO RIITE ini sangat berkontribusi dalam pengembangan pengembangan penulisan essay dengan konsep self-regulated learning" (Interview, AT 2024)*
>
> "CBGO or WEGO RIITE itself has a feature where, in the end, there are options for words or things that we feel need improvement. We mark each sentence asking for an evaluation of whether we have used those words correctly or not. So, we realize there are areas that need improvement, and indirectly, CBGO or WEGO RIITE helps us understand our shortcomings in the writing we have done. The feature that I find very contributing to my writing development, and almost all the features that WEGO RIITE has, are beneficial to me because there is a space that shows how many words we have used. Personally, I agree that all the features in WEGO RIITE contribute significantly to the development of essay writing with the concept of self-regulated learning." (Interview, AT 2024)

The interview excerpts (11-12) highlight several key technological characteristics of CBGO (Computer-Based Guided Learning) or WEGO RIITE, emphasizing its utility in supporting the essay writing process and fostering self-regulated learning. Firstly, the features of CBGO/WEGO RIITE mentioned by respondents include the ability to assist in crafting

introductory, body, and concluding statements, thereby facilitating the structuring of essays. Additionally, the platform provides tools for evaluating vocabulary usage, word count, and the use of transitional words, enhancing the coherence and quality of writing. Furthermore, the system incorporates a feedback mechanism, enabling users to identify areas for improvement and receive guidance on language usage and sentence construction. This feedback loop not only enhances writing skills but also fosters self-awareness and self-improvement. Overall, the technological characteristics of CBGO/WEGO RIITE, as described by respondents, encompass features that support various aspects of the writing process, from organization to language refinement, thereby contributing significantly to the development of essay writing skills within the framework of self-regulated learning.

Individual Characteristic

The 'individual characteristics' theme is labelled as such as EFL students expressed diverse perspectives on how their individual traits and habits interacted with the use of CBGO/WEGO RIITE. The data for this theme are explored in the following detailed analysis.

Extract 13

> *"Menurut saya CBGO ini cocok untuk semua orang dengan gaya belajar yang berbeda karena teknologi ini sangat mudah dipahami dan mudah dimengerti dalam proses penulisan essay ataupun tugas-tugas lainnya" (Interview, STF 2024)*
>
> "In my opinion, this CBGO is suitable for everyone with different learning styles because it is very easy to comprehend and understand in the process of writing essays or other assignments." (Interview, STF 2024)

Extract 14

> *"Menurut saya cocok bagi semua orang karena di dalam WEGO itu ada fitur videonya yang menunjukkan Bagaimana cara mengisi tulisan yang akan kita kembangkan mem" (Interview, LSN 2024)*
>
> "In my opinion, it is suitable for everyone because in WEGO, there is a video feature that shows how to fill in the writing that we will develop." (Interview, LSN 2024)

The interview excerpts (13-14) highlight the individual characteristics of CBGO (Computer-Based Guided Learning) that make it suitable for a diverse range of learners and conducive to their writing processes. Respondents express a consensus that CBGO's user-friendly interface and instructional features accommodate various learning styles, making it accessible and easy to comprehend for everyone. Specifically, the inclusion of video tutorials within CBGO enhances its suitability for learners by providing visual guidance on how to develop and structure their writing effectively. Moreover, respondents highlight their consistent reliance on CBGO for essay writing tasks, emphasizing its pivotal role in facilitating task completion and enhancing productivity. This indicates that CBGO aligns well with learners' preferences for utilizing technology in their self-regulated learning practices, as it enables them to consistently integrate technological tools into their writing processes and avoid manual methods. Overall, these findings suggest that the individual characteristics of CBGO, including its user-friendly interface, instructional support, and integration into self-regulated learning practices, contribute to its widespread adoption and effectiveness in supporting learners' writing endeavors.

Actual Use

The 'actual use' theme is labelled as such as EFL students continue to emphasize the practical application and integration of CBGO/WEGO RIITE into their academic endeavors. The

comprehensive insights provided by respondents shed light on the ways in which they actively engage with the technological platform, leveraging its features to enhance their writing skills and self-regulated learning strategies. The data for this theme are explored in the following detailed analysis.

Extract 15

> *"Yes mam setiap essay writing pasti saya menggunakan CBGO ini Karena tanpa teknologi mungkin saya tidak akan menyelesaikan tugas-tugas dengan mudah Mungkin saya akan menyelesaikan Tetapi hanya satu paragraph" (Interview, LS 2024)*
>
> "Yes, ma'am, I always use this CBGO for every essay writing. Because without technology, I might not complete the tasks easily. Maybe I would finish, but only one paragraph." (Interview, LS 2024)

Extract 16

> *"Iya dalam konsep pembelajaran Mandiri yang saya lakukan Saya sangat konsisten menggunakan CBGO dalam penulisan essay saya saya tidak pernah tidak menggunakan ini jika saya belajar essay dengan otodidak jadi saya selalu menggunakan teknologi-teknologi ini saya selalu memanfaatkannya jadi saya tidak pernah menuliskan essay saya secara manual" (Interview, AT 2024)*
>
> "Yes, in the concept of self-regulated learning that I practice, I am very consistent in using CBGO in my essay writing. I never fail to use them when I am learning essay writing through self-study, so I always utilize these technologies. Therefore, I never write my essays manually." (Interview, AT 2024)

The interview excerpts (15-16) highlight the pivotal role of CBGO (Computer-Based Guided Learning) in facilitating the actual use of technology for essay writing tasks. Both respondents emphasize their consistent reliance on CBGO for every essay assignment, highlighting its indispensable nature in their writing processes. They express concerns that without the assistance of CBGO, they may struggle to complete tasks efficiently, potentially resulting in incomplete or minimal output, as indicated by the possibility of only finishing one paragraph. Moreover, one respondent explicitly links their consistent use of CBGO to the concept of self-regulated learning, indicating a deliberate and intentional integration of technological tools into their learning practices. These findings underscore the practical significance of CBGO in supporting learners' writing processes, emphasizing its instrumental role in enhancing productivity and enabling the successful completion of essay assignments. Additionally, the respondents' unwavering reliance on CBGO underscores their preference for utilizing technological resources, further highlighting the importance and effectiveness of CBGO in facilitating effective self-regulated learning experiences.

Data from interviews were supported by the data from the observation and the document analysis. The data from observation can be presented in the following extracts (17-18).

Extract 17

> "Students actively access CBGO through a laptop or mobile device. Most of the students look familiar and comfortable using CBGO without further instruction by the lecturer." (Classroom Observation for the second meeting, 2024)

Extract 18

> "Students utilize CBGO features, such as the automatic creation of an outline, essay structure templates based on principles about the introduction, body, and conclusion, and

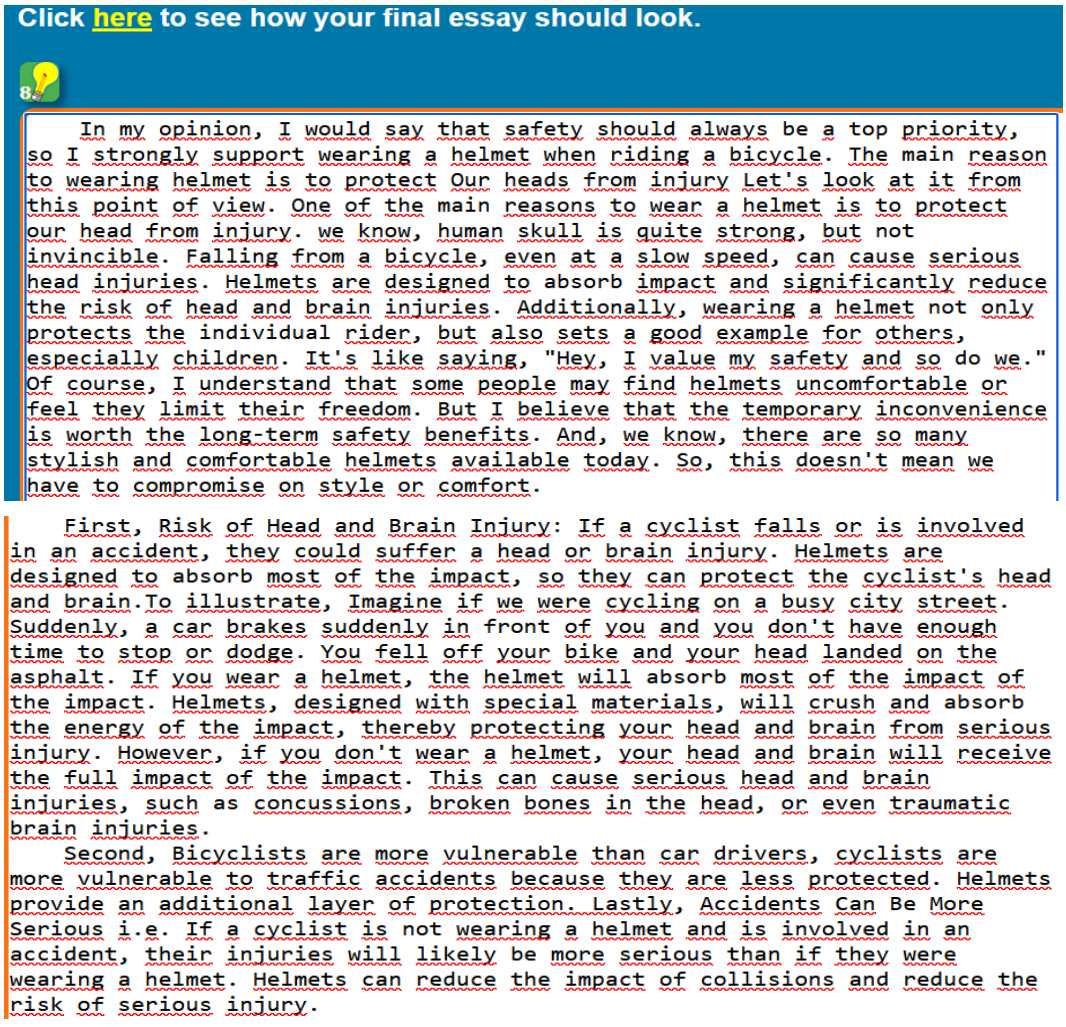
facilitating video tutorials to support writing in series." (Classroom Observation for the fourth meeting, 2024)

Classroom observations confirm that students engage in using CBGO on either a laptop or a mobile device and that they do not require much instruction from the lecturer to operate it, further affirming that it is user-friendly. Therefore, they could utilize support tools such as automatic outline generation, essay structure templates, and video tutorials to make their writing tasks simpler as part of the ways through which essay organization and output shall be improved. Such observations confirm positive feedback from interviews regarding the usefulness of the CBGO for promoting self-regulated learning and improving outcomes in writing.

The data from document analysis also prove that the use of features such as essay writing guides and structure guides was very helpful in improving the cohesion and quality of writing. It is proven by the students' argumentative essay writing. The example can be ilustrated in the following figure.

Figure 1.

STF's assignment of argumentative essay writing



> In conclusion, The conclusion is that cyclists are indeed more susceptible to the risk of accidents compared to car drivers due to several factors. These factors include lack of physical protection, low visibility, and the need for good balance. However, even though cyclists are more vulnerable, wearing a helmet can provide a very important additional layer of protection. Helmets can help protect a cyclist's head and brain from serious injury in the event of an accident. So, wearing a helmet when cycling is not only about obeying the rules, but also about keeping yourself safe. So, it is important for every cyclist to always wear a helmet, no matter how long or short the distance they cover.

The topic sentence clearly presents the writer's opinion, expressing strong support for wearing a helmet when riding a bicycle. Each of the three reasons supporting the opinion is well-developed with relevant explanations and examples. The first reason emphasizes the risk of head and brain injury, with a detailed illustration of a hypothetical scenario. The second reason discusses the vulnerability of bicyclists compared to car drivers and how helmets provide an additional layer of protection. The third reason highlights that accidents can be more serious for cyclists not wearing helmets. The essay maintains coherence throughout, providing a clear structure and logical flow of ideas. It concludes by summarizing the main points effectively and reiterating the importance of wearing helmets. The language is clear, and the essay effectively utilizes examples and details to support the arguments.

Discussion

The findings from the interview excerpts align with previous research on the use of technology in self-regulated learning and its impact on writing competency (Altas & Mede, 2020; Bernacki et al., 2012; Zhang et al., 2023). Based on the interview excerpts, it is evident that the use of technology, specifically CBGO, plays a crucial role in supporting self-regulated learning practices, particularly in the context of essay writing. These findings are consistent with the notion that technology-mediated self-regulated learning can enhance students' writing performance and motivation (Memon et al., 2022; Tran & Ma, 2023; Wei, 2023). By using CBGO, students are able to actively engage in the writing process, set goals for themselves, and effectively regulate their learning. The integration of CBGO in the participants' writing processes signifies their recognition of the benefits it offers, such as providing guidance and structure, facilitating the organization of ideas, and offering immediate feedback on their writing (Brady et al., 2022; Evmenova et al., 2020). Furthermore, the participants' reliance on CBGO reflects their preference for utilizing technological resources in their learning practices.

The findings from the interviews present crucial implications for instructional design, curriculum development, and the integration of educational technology, particularly CBGO, in educational settings. The user-friendly interface, instructional support, and streamlined integration into self-regulated learning practices highlight the potential of CBGO to enhance students' writing skills and task completion. Educational designers and curriculum developers can take these findings into consideration when designing and implementing technology-enhanced learning environments. The inclusion of video tutorials within CBGO proves to be particularly beneficial for learners, providing visual guidance on effective writing strategies. This underscores the importance of incorporating multimedia elements into educational technology tools to cater to diverse learning styles. Educators and instructional designers can leverage this insight to create interactive and visually engaging instructional materials that support students in developing their writing abilities.

Furthermore, the consistent reliance of students on CBGO for essay writing tasks emphasizes

the need for educational institutions to integrate similar technological resources into their curricula. This integration can be instrumental in fostering students' autonomy in their learning processes and helping them meet academic writing expectations effectively. In terms of educational technology integration, the study underscores the significance of providing accessible and user-friendly technological tools. As CBGO is seen as instrumental in facilitating students' writing processes, educators and technology integration specialists should ensure that similar tools are readily available and easily navigable for all students, regardless of their learning styles or technological proficiency.

The strengths of the study lie in its exploration of the practical application and impact of CBGO on students' writing processes. The findings shed light on the positive influence of CBGO on task completion, productivity, and self-regulated learning practices. The thematic analysis provides valuable insights into students' perspectives on the usability and effectiveness of CBGO, contributing to the existing literature on technology-mediated self-regulated learning and writing competency. A limitation of the study is its focus on a specific technological tool, which may limit the generalizability of the findings to other similar platforms. To address this limitation, future research could explore the impact of a broader range of writing support technologies on students' writing processes and outcomes. Future research could also investigate the long-term effects of integrating CBGO and similar tools into curricula, examining students' writing development over an extended period. Additionally, exploring the perceptions and experiences of educators in implementing technology-enabled writing support tools would provide a comprehensive understanding of the implications for instructional practices.

The study offers valuable insights for instructional design, curriculum development, and the integration of educational technology. The findings highlight the significance of user-friendly technological tools and the need for continued exploration of the impact of technology on students' writing processes. Moving forward, these insights can inform the development of effective educational technology tools and the enhancement of writing instruction in educational settings.

Conclusion

In summary, the findings of this study highlight the crucial role of technology, particularly the computer-based graphic organizer tool, in supporting students' writing processes. The participants' consistent reliance on CBGO underscores its practical significance in enhancing productivity, facilitating self-regulated learning, and enabling successful completion of essay assignments. These findings indicate the instrumental role of CBGO in supporting learners' writing processes and their preferences for utilizing technological resources.

This study has significantly contributed to the understanding of student perspectives on technology-enhanced writing instruction. The exploration of students' experiences with CBGO has shed light on the positive impact of technology on task completion, productivity, and self-regulated learning practices. By providing valuable insights into the usability and effectiveness of CBGO, this study enriches the existing literature on technology-mediated self-regulated learning and writing competency.

It is evident from this study that incorporating student voices in educational research and practice is paramount. The insights gained from students' experiences with CBGO have direct implications for instructional design, curriculum development, and educational technology integration. By prioritizing student perspectives, educational institutions can better cater to

students' learning needs and preferences, ultimately enhancing the effectiveness of educational interventions and technology integration in academic settings. This study serves as a compelling reminder of the importance of centering educational research and practice on the voices and experiences of students.

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