

CHAPTER IV

FINDINGS AND DISCUSSION

This chapter presents the research findings and discussion. The study is designed to address two central research questions, which are elaborated based on the data collected. Specifically, this chapter provides a comprehensive account of students' experiences and perceptions in implementing Canva-based mind mapping to enhance writing skills at SMAN 1 Anjir Pasar. It further explores the perceived benefits, challenges, and pedagogical implications of employing Canva as a digital tool to support students' writing development. The discussion is systematically organized and supported by data derived from interviews, observations, and relevant documentation.

A. Findings

This chapter presents the research findings and discussion regarding the implementation of Canva-based mind mapping in writing activities at SMAN 1 Anjir Pasar.

1. The Implementation of Canva-Based Mind Mapping in Writing Instruction.

The first major finding of this study concerns the actual implementation of Canva-based mind mapping in the classroom, particularly during the pre-writing stage. Based on classroom observations, this strategy was applied systematically before students began composing full paragraphs. The teacher deliberately positioned

mind mapping as a planning tool rather than merely a decorative activity, emphasizing its primary function in organizing ideas logically.

At the beginning of the lesson, the teacher reviewed the text type being studied and reminded students of its generic structure. This step was important to ensure that students had a clear understanding of the writing framework before moving to the planning stage. Afterward, students were instructed to open Canva and select an appropriate mind mapping template.

As the activity progressed, the classroom atmosphere gradually shifted from passive learning to active engagement. Students began exploring various templates, adjusting layouts, and placing their main topic at the center of the mind map. This process encouraged students to actively participate in organizing their ideas visually.

However, during the initial implementation, several students experienced difficulties in applying mind mapping effectively. Some students tended to write long sentences instead of using keywords. This indicates that they were still influenced by traditional writing habits, where the planning stage is often overlooked, and writing begins directly with full sentences or paragraphs.

After receiving further clarification from the teacher, particularly regarding the use of keywords rather than complete sentences, students began to revise and restructure their mind maps. They gradually learned

to simplify their ideas into concise points, which later served as a foundation for developing paragraphs.

This process reflects a significant transition from unstructured or spontaneous writing to a more organized and systematic approach. It suggests that the implementation of Canva-based mind mapping requires not only technical adaptation in using digital tools but also cognitive adjustment in how students conceptualize the writing process. This finding is further supported by students' responses during the interview. One student stated "*Canva helps organize ideas before writing the text.*"

Although brief, this statement carries substantial meaning. It indicates that the student has begun to perceive writing as a process that involves planning and organization prior to actual text production. This shift in perception demonstrates an increased awareness of writing as a structured activity rather than an immediate output task.

Overall, the findings reveal that the implementation of Canva-based mind mapping successfully introduced a more systematic pre-writing strategy. Despite initial challenges, students gradually adapted to this approach, which ultimately supported them in organizing their ideas more effectively before writing.

a. Transformation of Students' Pre-Writing Habits

Before the implementation of Canva-based mind mapping, most students admitted that they rarely created an outline prior to writing.

Their common strategy was to begin writing immediately once a

topic was given. This often resulted in ideas that lacked logical order and coherence. One student explained: “*Before using Canva, I sometimes felt confused about where to start, and my ideas became mixed up.*”

This statement reveals two central issues: difficulty in initiating writing and difficulty in maintaining idea organization. The phrase “*ideas became mixed up*” suggests a lack of structural clarity and conceptual mapping.

After several sessions using mind mapping, students began to develop a more systematic writing approach. Instead of directly constructing sentences, they first identified the main idea, followed by supporting points. This structured planning reduced hesitation during the drafting stage.

Documentation analysis further supports this observation. Students’ writing samples after the use of mind mapping showed clearer paragraph divisions, improved logical sequencing, and more consistent topic development. The introductory paragraph was more focused, supporting details were more relevant, and concluding statements aligned better with the main idea.

This transformation indicates that Canva-based mind mapping functioned as cognitive scaffolding. It supported students in externalizing their thoughts visually before transforming them into textual form.

b. Impact on Idea Organization and Text Coherence

One of the most prominent findings of this study is the improvement in students' idea organization and coherence. In interviews, students expressed that planning through mind mapping made the writing process feel more controlled and less overwhelming.

One student stated: *“Yes, my writing became more structured and coherent.”*

The use of the words *“structured”* and *“coherent”* suggests that students were able to perceive qualitative improvement in their writing output. This perception is important because it reflects metacognitive awareness students are not only writing better but also recognizing the improvement.

Another student added:

“I feel more confident because I already have a writing plan.”

This statement highlights the relationship between organization and confidence. When students possess a clear plan, uncertainty decreases. The presence of a visual outline reduces cognitive load during drafting, allowing students to focus on sentence construction rather than idea generation.

From observational data, it was evident that students referred back to their mind maps while writing paragraphs. This behavior

demonstrates that the mind map was not merely an isolated activity but a functional guide throughout the writing process.

Therefore, Canva-based mind mapping did not only improve structural organization but also strengthened continuity between planning and drafting stages.

c. Impact on Motivation and Engagement

The findings indicate that the use of Canva-based mind mapping positively influences students' motivation in the writing process. This is reflected in students' emotional responses, which demonstrate increased interest, enjoyment, and reduced anxiety toward writing tasks. The integration of visual and interactive elements appears to transform writing from a demanding activity into a more engaging and accessible experience.

Based on interview data, many students expressed positive feelings such as enjoyment and enthusiasm when using Canva. For example, one student stated, *"I feel happy because it is easy to understand."* Another student mentioned, *"It is fun and enjoyable because it looks more attractive and not boring."* These responses suggest that students experienced higher intrinsic motivation compared to traditional writing methods, which are often perceived as monotonous. The visual features provided by Canva, such as templates, colors, icons, and layout flexibility, seem to play a

significant role in capturing students' attention and sustaining their interest during the writing preparation stage.

Students also indicated a shift in how they perceived the difficulty of writing. One student expressed, "*Canva makes a process that usually feels heavy become lighter.*" This statement reflects a psychological change in which writing tasks are no longer seen as overwhelming. Instead, the use of mind mapping allows students to break down complex ideas into smaller and more manageable parts. This process reduces cognitive load and enables students to approach writing tasks with greater ease. As a result, students become more willing to engage in writing activities without feeling pressured.

Another benefit reported by students was increased confidence after using Canva-based mind mapping. For instance, one student stated, "*I feel more confident because I already have a plan before writing.*" This finding suggests that having a clear visual plan enhances students' sense of preparedness, which in turn strengthens their self-confidence. When students feel more prepared, they are more likely to participate actively and complete writing tasks with a positive mindset.

Moreover, the motivational impact is also reflected in students' willingness to explore ideas creatively. The availability of various design elements encourages students to express their ideas

more freely, which further enhances their interest in the activity. This suggests that Canva not only supports the technical aspect of writing but also contributes to a more positive emotional experience.

Overall, these findings suggest that Canva-based mind mapping enhances students' motivation by increasing enjoyment, reducing perceived difficulty, fostering creativity, and improving confidence in writing.

The findings also reveal a significant improvement in students' engagement during the writing process. This is evident from both classroom observations and students' responses in the interviews, which show increased participation, interaction, and involvement in learning activities.

Classroom observation showed that students were more actively involved in the learning process. They spent more time discussing ideas with their peers, collaboratively constructing mind maps, and revising their work. Rather than passively completing writing tasks, students were actively engaged in organizing, evaluating, and improving their ideas. The use of Canva encouraged students to participate more dynamically, as the activity combined both cognitive and creative elements.

The interview data further supports this finding. Students reported that Canva helped them organize and develop their ideas more effectively. One student explained, "*It helps me organize ideas*

before writing the text.” Another student added, *“It makes my writing more structured and organized.”* These responses indicate that students were cognitively engaged, as they actively processed information, structured their thoughts, and made decisions about how to present their ideas clearly.

Moreover, the collaborative aspect of Canva also contributed significantly to students’ engagement. One student stated, *“It is easy and practical, and we can work together by sharing the link with others.”* This shows that the activity promoted social engagement, where students interacted with peers, shared responsibilities, and contributed to group work. Such collaboration not only increased participation but also enriched the learning experience through idea exchange and discussion.

The findings showed that colors, icons, and images played an important role in maintaining students’ attention and stimulating creativity. As one student mentioned, *“Colors, icons, and images help me think more clearly.”* This suggests that visual elements supported students’ focus and encouraged them to stay engaged for a longer period. Students were not only completing the task but also actively refining both the content and the visual presentation of their work.

Students demonstrated deeper engagement by balancing aesthetic design with content organization. Although they were

initially attracted to visual aspects, they gradually learned to prioritize clarity and coherence in their mind maps. This reflects a higher level of cognitive engagement, where students are not only involved in the activity but also critically aware of the quality of their work.

Canva-based mind mapping enhances students' engagement by promoting active participation, collaboration, sustained attention, and deeper cognitive involvement in the writing process. The integration of visual and interactive features encourages students to become more engaged learners who actively contribute to their own learning process.

2. The benefits of Canva-Based Mind Mapping

a. Cognitive Benefits

The findings of this study consistently demonstrate that the use of Canva-based mind mapping provides a significant contribution to students' cognitive development in the writing process. Based on the analysis of interview data, most students experienced noticeable improvement in organizing their ideas before starting to write. This highlights the important role of the pre-writing stage, as students no longer begin writing without preparation, but instead develop a clear framework that guides their writing process from the beginning.

Based on interview data, students reported that Canva helped them arrange and structure their ideas more clearly and

systematically. For example, one student stated, *“It helps me organize ideas before writing the text.”* Another student mentioned, *“It helps me determine the main topic and subtopics.”* These responses indicate that students were able to plan their writing in a more structured way, allowing them to approach writing tasks with a clearer direction. Instead of writing spontaneously, students first organized their thoughts into a visual structure, which made the writing process more manageable.

The data reveal that students developed a better ability to distinguish between main ideas and supporting details. One student explained, *“It helps me organize main and supporting ideas in a structured way.”* Another student added, *“It makes it easier to differentiate main ideas from explanations.”* This finding suggests that students’ thinking became more organized, as they were able to identify the hierarchy of ideas within their writing. This ability is essential in producing coherent and well-structured texts, as students can clearly separate key points from additional information.

Students also showed improvement in connecting and developing their ideas. Several students mentioned that Canva helped them expand their ideas more easily and logically. For instance, one student stated, *“It helps me develop ideas more easily.”* Another student said, *“It makes my writing more structured and organized.”* These responses indicate that students were not only organizing

ideas but also building connections between them. The use of mind mapping allowed students to see the relationships between ideas, which supported the development of more coherent and meaningful writing.

The findings also show that visual elements in Canva contributed significantly to clearer thinking. Students reported that features such as colors, icons, and images helped them understand and organize their ideas better. For example, one student stated, “*Colors, icons, and images help me think more clearly.*” This suggests that visual support plays an important role in helping students process information, as it allows them to represent ideas in a more concrete and accessible way. As a result, students were able to think more clearly and organize their thoughts more effectively.

Beyond idea organization, the study also reveals an improvement in students’ overall clarity of thinking. Before using Canva, students often experienced confusion when starting to write due to unstructured ideas. However, after using mind mapping, they reported having a clearer direction in planning and developing their writing. One student stated, “*I am no longer confused when starting to write.*” This indicates that the use of mind mapping helped students overcome initial difficulties in writing, particularly in generating and organizing ideas.

Moreover, the findings suggest that Canva helps reduce the perceived difficulty of the writing process. Students felt that writing became easier and more manageable after organizing their ideas through mind mapping. One student stated, *“It makes the writing process easier and more directed.”* This shows that students were able to focus more on developing their ideas rather than struggling to decide what to write. The availability of a clear plan allowed students to proceed step by step, which reduced hesitation and uncertainty during writing.

A common response among students was increased confidence in writing. This confidence appears to be closely related to their improved cognitive readiness. For example, one student stated, *“I feel more confident because I already have a plan before writing.”* Another student added, *“I feel more confident when writing after making a mind map.”* These responses indicate that when students have a clear structure and organized ideas, they feel more prepared and less anxious. As a result, they are more willing to engage in writing tasks and complete them successfully.

Canva encourages students to be more active and independent in organizing their ideas. Students explored different features, selected templates, and developed their own strategies for creating mind maps. This indicates that they were not only following instructions but also actively involved in the thinking and planning process. This

active involvement contributes to deeper understanding, as students take ownership of their learning process.

Another important finding is that students gradually became more efficient in managing their ideas. As they became more familiar with Canva, they were able to organize their thoughts more quickly and effectively. This suggests that repeated use of mind mapping can support the development of long-term cognitive skills, particularly in planning and structuring writing.

Overall, the cognitive benefits of Canva-based mind mapping include improved idea organization, clearer thinking, better ability to connect and develop ideas, reduced difficulty in writing, increased confidence, and greater independence in learning. These aspects are interconnected and collectively support students' cognitive processes, enabling them to produce more structured, coherent, and meaningful writing.

b. Academic Benefits

The findings of this study indicate that the use of Canva-based mind mapping provides a significant contribution to students' academic development, particularly in writing skills. This improvement can be seen in several key aspects, including writing structure, coherence, clarity of ideas, efficiency, and overall writing quality. These aspects suggest that Canva not only supports the writing process but also enhances students' academic outcomes.

The data consistently indicate that students experienced improvement in the structure and organization of their writing. Many students reported that their texts became more structured and easier to follow after using Canva-based mind mapping. For example, one student stated, *“It makes my writing more structured and organized.”* Another student mentioned, *“My writing becomes clearer and more directed.”* These responses suggest that students were able to arrange their ideas in a logical sequence, resulting in writing that is easier to understand and more coherent.

This improvement shows that students began to rely on a structured plan before writing. Instead of writing spontaneously without clear direction, they followed the framework developed through mind mapping. As a result, each part of their writing contributed more clearly to the overall meaning of the text. Students were able to organize their introduction, supporting details, and concluding ideas more effectively, which strengthened the coherence of their writing.

Students also demonstrated improvement in maintaining clarity and continuity in their writing. One student stated, *“It helps me organize ideas so the writing becomes more logical.”* Another student added, *“It becomes easier to write because everything is already planned.”* These statements indicate that students were able to sustain a consistent flow of ideas from the beginning to the end of

their texts. This reduced the occurrence of unclear or disconnected ideas, which is a common issue in students' writing.

Another important academic benefit identified in this study is time efficiency. The data show that students were able to complete the planning stage more quickly when using Canva compared to traditional methods. This is reflected in responses such as "*It saves time,*" and "*It is more practical because templates are already available.*" The availability of ready-to-use templates allowed students to start their work immediately without spending excessive time on organizing layouts manually.

This efficiency also had a positive impact on the overall writing process. Since students spent less time on planning, they were able to allocate more time to developing and refining their ideas. As a result, the writing process became more focused and productive. Students could concentrate more on content development rather than struggling with how to begin or organize their ideas.

The findings also show that students experienced improvements in the overall quality of their writing. Based on their responses, Canva-based mind mapping helped them present ideas more clearly, provide more details, and organize information more effectively. One student mentioned, "*My ideas are clearer and easier to understand,*" while another stated, "*It improves the quality of my writing because the ideas are more organized.*" These responses

suggest that mind mapping plays an important role in helping students produce better-quality written texts.

Students also reported that they were able to develop their ideas more fully. Through the use of mind maps, they could expand a main idea into several supporting points in a systematic manner. As a result, their writing became more complete and informative. Rather than producing short or incomplete pieces of writing, students were able to elaborate on their thoughts in greater detail and present them in a more organized structure.

The findings also show that Canva makes the writing process more practical and accessible. Students highlighted that the platform is easy to use and provides various helpful features. For example, one student stated, *“It is easy and practical to use.”* Another mentioned, *“There are many templates that make it easier to create mind maps.”* These features support students in completing their academic tasks more efficiently and reduce technical difficulties during the learning process.

The use of Canva also contributed to increased student participation in writing activities. Because students had already prepared their ideas through mind mapping, they were more ready to engage in writing tasks. They demonstrated greater involvement in completing assignments and showed more responsibility in their

work. This indicates that Canva supports not only individual performance but also active participation in the learning process.

A further benefit observed in this study was the development of students' independence in completing writing tasks. They were able to rely on their own mind maps as a guide, which reduced their dependence on teacher instructions. Students could plan, organize, and develop their ideas independently, which is an important aspect of academic development. This independence also reflects students' ability to take control of their own learning process.

As students became more familiar with Canva, they gradually became more efficient in managing their writing tasks. They were able to organize their ideas more quickly and effectively, making the writing process smoother and more manageable. This suggests that the repeated use of Canva-based mind mapping not only improves immediate writing performance but also supports the development of long-term academic skills.

Taken together, the academic benefits of Canva-based mind mapping include improved writing structure and coherence, increased clarity and development of ideas, better writing quality, greater time efficiency, enhanced participation, and increased learning independence. These interconnected aspects collectively support students in producing more effective, organized, and meaningful academic writing.

c. Challenges in Implementation

The findings of this study not only highlight various academic benefits but also reveal several critical challenges encountered during the implementation of Canva-based mind mapping in writing activities. These challenges are not merely technical obstacles but also reflect deeper issues related to students' learning processes, digital readiness, and task management. A closer examination of these challenges provides a more balanced understanding of how Canva functions within real classroom contexts.

The data consistently indicate that the most significant challenge experienced by students is related to technical issues, particularly internet connectivity. This is reflected in students' statements such as "*internet connection,*" "*sometimes experiencing internet problems,*" and "*the internet often lags.*" These responses clearly show that unstable internet access frequently disrupts the continuity of learning activities. Students often encountered delays when opening Canva, accessing templates, or saving their work, which interrupted the natural flow of the writing process.

More importantly, these interruptions extend beyond technical inconvenience and directly affect students' cognitive engagement. When students are forced to pause repeatedly due to connectivity issues, their ability to maintain ideas, sustain focus, and continue logical thinking becomes disrupted. As a result, the pre-writing stage

which requires concentration and continuity becomes less effective. This suggests that the success of Canva-based learning is highly dependent on the stability of technological infrastructure, making the learning process vulnerable to external disruptions.

Another challenge identified in the findings is related to device limitations. Some students reported experiencing technical difficulties due to the performance of their devices. For instance, one student stated, *“being stuck on the Canva loading screen due to internet and memory issues.”* Other students also mentioned that their devices became slow or lagged during the activity. These responses indicate that not all students have equal access to devices capable of supporting digital learning tools effectively.

This condition highlights an important issue of unequal learning experiences. Students with lower-performance devices tend to experience slower processing times, limited functionality, and frequent disruptions, which can reduce their ability to fully participate in the activity. In contrast, students with better devices are able to complete tasks more efficiently. This imbalance suggests that the integration of digital tools in the classroom may unintentionally create disparities in student performance and engagement.

A further challenge found in this study is students' tendency to focus more on design rather than content. This is reflected in

statements such as “*choosing designs and organizing ideas to make them look neat*” and difficulties in “*arranging layout, adjusting text size, and maintaining aesthetic balance.*” These responses indicate that students often allocate a significant amount of time and attention to visual aspects of the task.

This tendency reveals a shift in students’ priorities during the learning process. While visual design can enhance engagement, excessive focus on aesthetics may divert attention from the primary objective of writing, which is the development and organization of ideas. In this context, Canva’s rich visual features function as a double-edged tool: they can support creativity but also introduce distractions. As a result, students may produce visually appealing mind maps that are not necessarily strong in content quality.

Challenges were also found in students’ ability to organize ideas within the mind map. This is reflected in the statement “*organizing idea branches so they are well connected.*” Although Canva provides a visual structure, it does not automatically ensure that students can think systematically. Some students struggled to determine relationships between ideas, arrange logical sequences, and maintain coherence across different parts of the mind map.

This finding suggests that the effectiveness of Canva is closely linked to students’ prior cognitive readiness. Without sufficient ability to structure ideas, students may still experience confusion

despite having access to visual tools. In other words, Canva can support the organization of ideas, but it cannot replace the fundamental thinking skills required in writing.

Issues related to group work also emerged as a notable challenge. Some students reported that not all group members actively participated in completing the task. There were instances where certain students did not contribute to creating the mind map or searching for relevant materials. This uneven participation reduced the effectiveness of collaborative learning, as the responsibility was not equally shared among group members.

This condition indicates that collaboration in digital learning environments requires more than just shared access to tools. Without clear roles and active involvement from all members, group work may become inefficient and less meaningful. As a result, the potential benefits of collaborative learning are not fully realized.

Despite these challenges, the findings also demonstrate students' ability to adapt and develop strategies to overcome difficulties. Some students reported asking for help from classmates or teachers when encountering problems. Others mentioned using simpler templates, improving internet access, or managing their time more effectively. These responses indicate that students gradually develop problem-solving skills and become more independent in handling challenges.

It is important to emphasize that most of the challenges identified in this study originate from external and technical factors rather than the instructional approach itself. The difficulties are primarily related to infrastructure, device capability, and students' familiarity with digital tools. As students gain more experience using Canva, these challenges tend to decrease, and the learning process becomes more efficient.

Overall, the challenges in implementing Canva-based mind mapping include unstable internet connection, device limitations, students' tendency to prioritize design over content, difficulties in organizing ideas, and unequal participation in group work. However, these challenges do not diminish the overall effectiveness of Canva as a learning tool. Instead, they highlight the importance of adequate technological support, careful task guidance, and the development of students' digital and cognitive readiness to ensure successful implementation in writing instruction.

B. Discussion

This section presents a comprehensive and critical discussion of the research findings by directly connecting them with the theoretical framework outlined in Chapter II. The purpose of this study is to examine how the implementation of Canva-based mind mapping supports students' writing skills and to identify its benefits and challenges.

1. The Implementation of Canva-Based Mind Mapping in Writing Instruction

a. Transformation of Students' Pre-Writing Habits

The findings revealed that before the implementation of Canva-based mind mapping, students tended to begin writing immediately without preparing or organizing their ideas first. Most students admitted that they rarely created outlines before writing, which caused confusion during the drafting stage and resulted in ideas that were mixed, unstructured, and difficult to develop. Students often focused directly on constructing sentences without considering the relationship between ideas or the overall structure of the text. This condition indicates that students previously viewed writing as a direct product rather than a gradual process that requires planning and organization.

After the implementation of Canva-based mind mapping, students gradually showed significant changes in their writing habits. Instead of writing spontaneously, students began identifying the main topic, determining supporting ideas, and arranging information visually before writing full paragraphs. This transformation demonstrates that students developed greater awareness of the importance of planning in the writing process. The use of mind mapping encouraged students to slow down and think critically about how their ideas were connected before transforming them into written form.

This finding is related to Writing Process Theory proposed by Harmer (2004), which explains that writing is not an instant activity but a recursive process consisting of planning, drafting, revising, and editing. In this study, Canva-based mind mapping strengthened the planning stage because students learned to prepare and organize ideas systematically before drafting their texts. Students no longer depended solely on spontaneous thinking during writing, but instead used mind maps as preparation tools that guided their writing process more effectively.

The findings indicate that Canva-based mind mapping functioned as cognitive scaffolding during the pre-writing stage. Students used visual mapping to externalize their thoughts and arrange ideas in a more manageable form before transforming them into paragraphs. This finding is closely related to Vygotsky's (1978) concept of scaffolding, where learning tools and guidance support learners in developing skills gradually. Canva-based mind mapping acted as a supportive tool that helped students organize their thinking and reduce confusion during writing activities.

The findings also demonstrate that students gradually adapted to a more organized and reflective writing process. Initially, some students still wrote long sentences in their mind maps rather than using keywords because they were accustomed to traditional writing habits. However, after receiving clarification and guidance from the teacher,

students learned to simplify ideas into concise points and use them as the basis for paragraph development. This process reflects not only technical adaptation to the use of Canva but also cognitive adjustment in understanding writing as a structured process.

Overall, the findings indicate that Canva-based mind mapping successfully transformed students' pre-writing habits from unstructured writing behavior into a more systematic and organized approach. The use of visual planning encouraged students to think critically, organize ideas more clearly, and prepare themselves more effectively before starting the drafting stage.

b. Impact on Idea Organization and Text Coherence

The findings showed that Canva-based mind mapping positively influenced students' ability to organize ideas and maintain coherence in their writing. Students explained that the use of visual planning helped them arrange ideas more logically and systematically before writing. Through mind mapping, students were able to identify main ideas, supporting details, and relationships between concepts more clearly. As a result, their writing became more organized and easier to follow.

Students also reported that the writing process felt more controlled and manageable because they already had a clear framework before drafting. This finding indicates that mind mapping reduced students' uncertainty during writing activities. Instead of struggling to generate ideas while writing, students could focus on developing

sentences and paragraphs because the main structure of the text had already been prepared visually.

This finding supports Mind Mapping Theory proposed by Buzan (2006), which explains that mind mapping helps learners organize information through associative and hierarchical relationships. Through the use of branches, keywords, and visual connections, students could see how ideas were related to one another. This visual organization supported students in producing more coherent and logically connected writing.

The findings are also related to Graham and Perin (2007), who explain that graphic organizers improve students' writing structure and coherence. Canva-based mind mapping functioned as a digital graphic organizer that guided students in arranging ideas systematically before drafting their paragraphs. Students used the mind maps not only during the planning stage but also as continuous references while writing. Observational data showed that students frequently returned to their mind maps to check idea connections and maintain consistency in their writing.

Moreover, the findings indicate that students became more aware of logical sequencing in writing. Their texts showed clearer paragraph divisions, stronger topic development, and more consistent relationships between supporting details and the main idea. This

suggests that Canva-based mind mapping supported students in maintaining coherence from the beginning to the end of the text.

Another important aspect revealed in the findings is the relationship between organization and confidence. Students stated that having a writing plan reduced confusion and helped them feel more confident while writing. This indicates that idea organization not only improves writing quality but also supports students psychologically during the writing process.

However, the findings also revealed that several students still experienced difficulties in connecting ideas logically, even after using mind maps. Some students struggled to determine relationships between branches and organize information coherently. This finding indicates that visual tools alone cannot automatically develop students' conceptual understanding. Students still require teacher guidance and sufficient practice in developing logical relationships between ideas.

The findings demonstrate that Canva-based mind mapping improved students' ability to organize ideas, maintain coherence, and develop writing more systematically. The visual structure provided by mind mapping supported students in producing clearer and more logically organized texts.

c. Impact on Motivation and Engagement

The findings revealed that Canva-based mind mapping positively influenced students' motivation and engagement during writing

activities. Students expressed feelings of enjoyment, enthusiasm, and increased interest when using Canva during the pre-writing stage. The integration of visual and interactive elements transformed writing activities into more enjoyable and less intimidating experiences for students.

Many students explained that Canva made writing feel easier and more attractive compared to traditional methods. The use of templates, colors, icons, and layout features helped students maintain attention and encouraged them to participate more actively during classroom activities. This finding suggests that visual learning environments can create more positive emotional experiences during writing instruction.

This finding is related to the Technology Acceptance Model proposed by Davis (1989), particularly the concept of Perceived Usefulness. Students believed that Canva helped them organize ideas more effectively and made writing activities easier to complete. As a result, students showed more positive attitudes toward writing tasks and became more willing to participate in learning activities.

The findings also support Multimedia Learning Theory proposed by Mayer (2021), which explains that learning becomes more meaningful when verbal and visual information are combined. Canva-based mind mapping integrated textual and visual elements simultaneously, helping students remain engaged and focused during

the writing process. Visual features not only increased students' interest but also supported clearer thinking and idea development.

The findings are also related to Dual Coding Theory proposed by Paivio (1986), which states that learning becomes more effective when information is processed through verbal and visual systems simultaneously. Students reported that colors, icons, and images helped them think more clearly and organize ideas more easily. The use of these visual elements appeared to support both students' cognitive processing and emotional engagement during writing activities.

Students became more socially engaged during collaborative activities, spending more time discussing ideas, exchanging opinions, and constructing mind maps together. This collaborative interaction reflects Vygotsky's (1978) Constructivist Theory, which emphasizes the importance of social interaction in learning. Through collaboration and discussion, students participated more actively in the learning process and contributed more during classroom activities.

Many students also expressed greater confidence when completing writing tasks. They explained that having a clear visual plan reduced uncertainty and helped them feel more prepared before they started writing. As a result, they experienced less hesitation and were more willing to participate actively during classroom activities.

The findings also revealed a challenge during the implementation of Canva-based mind mapping. Some students paid more attention to

visual design than to content development. Although colors, icons, and other visual elements increased engagement, excessive focus on aesthetics occasionally distracted students from the main purpose of organizing and developing ideas. This suggests that teacher guidance remains important to ensure that visual creativity supports learning objectives rather than becoming a distraction.

Students' responses indicate that Canva-based mind mapping helped increase their motivation and engagement during writing activities. The enjoyable learning experience encouraged active participation, reduced writing anxiety, and motivated students to become more involved throughout the writing process. These findings show that Canva-based mind mapping not only supported students' writing development but also created a more engaging and positive learning environment.

2. The Benefits of Canva-Based Mind Mapping

a. Cognitive Benefits

Canva-based mind mapping provided significant cognitive benefits during the writing process. Students became more capable of organizing ideas, distinguishing between main ideas and supporting details, developing logical relationships between concepts, and planning their writing systematically. Before using Canva-based mind mapping, students often experienced confusion when starting to write because they did not have a clear structure for their ideas. After implementing

mind mapping, students gradually developed clearer and more organized thinking patterns.

Students reported that Canva helped them arrange ideas more systematically before writing. They were able to identify the central topic, classify supporting information, and connect related ideas more effectively. These responses indicate that mind mapping supported students' cognitive processes during idea generation and organization. Instead of thinking randomly, students learned to structure information visually before transforming it into written text.

This result supports Mind Mapping Theory proposed by Buzan (2006), which explains that mind mapping reflects how the brain organizes information through associations and interconnected relationships. The branching structure of mind maps allowed students to visualize connections between ideas, making it easier for them to understand and manage information systematically. Through this visual organization, students could process information more effectively and develop clearer writing frameworks.

Students' experiences were also consistent with Dual Coding Theory proposed by Paivio (1986), which states that information is easier to process and remember when verbal and visual representations are combined. Students explained that colors, icons, images, and visual layouts helped them think more clearly and understand relationships between ideas more easily. The use of visual representation appeared to

strengthen cognitive processing and support deeper understanding during the writing process.

The results were further aligned with Multimedia Learning Theory proposed by Mayer (2021), which explains that learning becomes more effective when information is presented through both words and visuals. Canva-based mind mapping integrated textual and visual elements simultaneously, allowing students to process information more meaningfully. The use of visual elements helped students simplify complex information into manageable points, reducing confusion during writing activities.

Another important cognitive benefit found in this study is students' improved ability to connect and develop ideas logically. Students explained that mind mapping helped them expand ideas step by step because they could clearly see the relationship between concepts. This suggests that Canva-based mind mapping supported students in developing more coherent and meaningful writing by strengthening conceptual connections between ideas.

The findings also revealed that students experienced reduced confusion and hesitation during writing. Before using mind maps, many students felt uncertain about how to begin writing and how to continue their ideas. After organizing ideas visually, students felt more prepared and directed during drafting activities. This indicates that mind mapping

reduced cognitive burden because students already had a clear framework before writing.

Students gradually became more independent in managing and organizing ideas. They explored templates, selected visual elements, and developed personal strategies for arranging information effectively. This active involvement demonstrates that students were not only receiving information passively but also actively constructing their understanding during the learning process.

These findings suggest that Canva-based mind mapping contributed positively to students' cognitive development. The visual organization of ideas helped students understand relationships between concepts, reduce confusion during writing, and approach writing tasks in a more systematic way. As students became more involved in planning and organizing their ideas, they also developed greater independence in managing the writing process.

b. Academic Benefits

The findings revealed that Canva-based mind mapping provided important academic benefits, particularly in improving students' writing quality, coherence, organization, efficiency, and learning independence. Students reported that their writing became clearer, more structured, and easier to develop after organizing ideas through mind mapping.

One of the most significant academic improvements found in this study was related to writing structure and coherence. Students explained

that their paragraphs became more organized because they already had a clear framework before writing. The use of mind maps helped students arrange ideas sequentially and maintain logical relationships between concepts throughout the text. As a result, students produced writing that was easier to understand and more coherent.

This finding supports Graham and Perin (2007), who explain that graphic organizers improve students' writing quality by helping them structure ideas systematically before drafting. In this study, Canva-based mind mapping functioned as a visual organizer that guided students in arranging ideas more effectively. Students no longer wrote randomly but followed the structure developed through their mind maps.

The findings are also related to Writing Process Theory proposed by Harmer (2004), which emphasizes the importance of planning before writing. Canva-based mind mapping strengthened the planning stage because students prepared and organized ideas before drafting paragraphs. This preparation allowed students to focus more on developing content rather than struggling to decide what to write.

Another important academic benefit identified in this study is increased clarity and continuity in writing. Students reported that their ideas became easier to understand because they could see the relationships between concepts before writing. This helped students

maintain consistency from one paragraph to another and reduced disconnected or repetitive ideas in their texts.

The findings also showed that Canva improved students' efficiency during writing activities. Students explained that the availability of templates and visual layouts made the planning process faster and more practical. Instead of spending excessive time creating outlines manually, students could immediately organize ideas using ready-to-use features. This efficiency allowed students to allocate more time to developing and refining their writing.

This finding is related to the concept of Perceived Ease of Use in the Technology Acceptance Model proposed by Davis (1989). Students perceived Canva as an accessible and practical tool that simplified the writing preparation process. Because the platform was easy to use, students could focus more on content development and idea organization.

In addition, the findings revealed that students became more independent during writing activities. Students relied on their own mind maps as guidance and showed greater responsibility in planning and developing their writing. This independence indicates that Canva-based mind mapping supported students' self-directed learning and encouraged them to take greater control of their writing process.

Furthermore, students demonstrated increased participation during classroom activities. They became more actively involved in organizing

ideas, discussing concepts with peers, and revising their work. This suggests that Canva-based mind mapping not only improved individual writing performance but also strengthened students' engagement in academic learning activities.

Another important finding is that repeated use of Canva-based mind mapping gradually improved students' ability to manage writing tasks more efficiently. As students became more familiar with the platform, they were able to organize ideas more quickly and effectively. This indicates that the continued use of mind mapping can support the development of long-term academic skills related to planning, organization, and writing development.

The findings demonstrate that Canva-based mind mapping positively contributed to students' academic development by improving writing quality, organization, coherence, efficiency, participation, and learning independence.

c. Challenges in Implementation

The findings revealed several challenges during the implementation of Canva-based mind mapping in writing instruction. These challenges were related not only to technical issues but also to students' cognitive readiness, digital literacy, time management, and collaborative learning processes. Although Canva-based mind mapping provided many benefits, the implementation process was not entirely free from difficulties.

One of the most significant challenges identified in this study was unstable internet connection. Students frequently experienced problems such as slow loading, interrupted access, and difficulties saving their work. These technical disruptions affected the continuity of learning activities and reduced students' concentration during the writing process. Students often had to stop working temporarily while waiting for Canva to load properly, which interrupted their flow of thinking and idea development.

This finding supports Al-Azawei et al. (2016), who explain that technological infrastructure plays an important role in determining the effectiveness of digital learning. Without stable internet access, the use of technology-based learning tools may become less efficient and create frustration for learners.

Another challenge found in this study was related to device limitations. Several students reported that their devices became slow or lagged while using Canva, especially when accessing templates or adding visual elements. This indicates that students did not have equal access to devices capable of supporting digital learning activities effectively. As a result, students with lower-performance devices experienced greater difficulties during implementation.

The findings also revealed that some students focused more on visual design than on idea development. Students sometimes spent excessive time choosing templates, adjusting layouts, and organizing

visual appearance rather than concentrating on writing content. Although visual design increased engagement, excessive focus on aesthetics occasionally distracted students from the primary learning objective.

This finding is related to Cognitive Load Theory proposed by Sweller (2011), which explains that excessive visual information may create extraneous cognitive load and reduce learners' focus on essential learning tasks. In this study, Canva's visual features functioned both as supportive tools and potential distractions depending on how students used them.

Another important challenge identified in the findings was students' difficulty in organizing idea relationships within the mind map. Although Canva provided visual structures, some students still struggled to determine logical connections between ideas and arrange them coherently. This finding suggests that digital tools alone cannot automatically improve students' conceptual understanding. Students still require teacher guidance and practice to develop systematic thinking skills.

In addition, challenges related to collaboration also emerged during group activities. Some students reported unequal participation among group members, where certain students contributed more actively while others were less involved. This condition reduced the

effectiveness of collaborative learning because responsibilities were not distributed equally among students.

Despite these challenges, the findings also demonstrated students' adaptability during the implementation process. Students gradually developed strategies to overcome technical and learning difficulties, such as asking for help from peers or teachers, using simpler templates, and managing time more effectively. This indicates that students became more familiar with the platform over time and improved their ability to handle challenges independently.

The findings indicate that the challenges in implementing Canva-based mind mapping include technical constraints, device limitations, excessive focus on visual design, difficulties in organizing ideas, and unequal participation during collaboration. Nevertheless, these challenges did not eliminate the effectiveness of Canva-based mind mapping as a learning tool. Instead, they highlight the importance of adequate technological support, teacher guidance, and students' digital readiness to ensure successful implementation in writing instruction.