



DEVELOPMENT OF ENGLISH WRITING SKILLS THROUGH MIND MAPPING AMONG
FIRST-YEAR B.Ed. ENGLISH PROGRAM STUDENTS, FACULTY OF EDUCATION,
MAHACHULALONGKORNRAJAVIDYALAYA UNIVERSITY, THAILAND

VILASA

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ABSTRACT

The objectives of this study were: (1) To study the general English writing skills of first-year B.Ed. English Program students, Faculty of Education, Mahachulalongkornrajavidyalaya University, Thailand. (2) To develop and implement mind mapping for improving English writing skills among first-year B.Ed. English Program students, Faculty of Education, Mahachulalongkornrajavidyalaya University, Thailand. (3) To evaluate the effects of mind mapping on the English writing skills of first-year B.Ed. English Program students, Faculty of Education, Mahachulalongkornrajavidyalaya University, Thailand. (4) To investigate the perceptions and satisfaction among first-year B.Ed. English Program students, Faculty of Education, Mahachulalongkornrajavidyalaya University, Thailand. This study employed a Research and Development (R&D) methodology consisting of four phases. The sample group consisted of 20 first-year B.Ed. English Program students selected by purposive sampling. The research instruments included an English writing pretest and posttest, a mind mapping instructional manual, lesson plans, and a perception and satisfaction questionnaire. The instruments were validated by five experts, with IOC values ranging from 0.80 to 1.00.

The findings revealed that students' English writing skills before the experiment were at a fair level, with a mean score of 52.40 and a standard deviation of 9.85. After learning through mind mapping, students' writing skills improved to a good level, with a mean score of 68.75 and a standard deviation of 8.10. The paired-sample t-test showed a statistically significant difference between the pretest and posttest scores, with $t = 6.98$ and $p = .000$. In addition, students' perceptions and satisfaction toward learning English writing through mind mapping were at a very high level, with a mean score of 4.36 and a standard deviation of 0.58. Therefore, the study concluded that mind mapping is an effective instructional technique for improving English writing skills, especially in idea generation, organization, paragraph development, grammar use, vocabulary use, confidence, and learning motivation.

Keywords: English writing skills; mind mapping; English Program students

INTRODUCTION

Writing is widely recognized as one of the most essential language skills for academic success and effective communication. It functions not only as a medium for expressing ideas but also as a tool for organizing thoughts, developing arguments, and demonstrating critical thinking (Rao, 2019). In English as a Foreign Language (EFL) contexts, writing is often considered the most complex language skill because learners must simultaneously manage multiple components, including grammar, vocabulary, coherence, and organization (Richards & Renandya, 2002; Kroll, 2003). As a result, many students experience difficulties in producing clear, coherent, and well-structured written texts.

For first-year B.Ed. English Program students, writing proficiency is particularly important because they are future teachers who must communicate knowledge effectively and serve as language models for their students. However, many students face challenges in organizing ideas, developing paragraphs, and using appropriate grammar and vocabulary. These difficulties are not only linguistic but also cognitive, as writing requires learners to generate, organize, and refine ideas in a structured manner (Hayes, 1996; Zhao et al., 2026). Therefore, effective instructional strategies are needed to support students in developing both the linguistic and cognitive aspects of writing proficiency.

From a cognitive perspective, writing is a complex mental process. According to Linda Flower and John R. Hayes (1981), writing involves recursive processes such as planning, translating, and reviewing. This means that writing is not a simple, linear activity but a dynamic process in which writers continuously organize and reorganize their ideas. When students lack strategies for planning and structuring their thoughts, they often struggle to produce coherent writing. This explains why many learners have difficulty connecting ideas logically and maintaining clarity in their compositions. To support students in managing this complex process, effective instructional approaches are necessary. The process writing approach emphasizes stages such as pre-writing, drafting, revising, and editing. As Jeremy Harmer (2004) explains, writing should be taught as a process rather than focusing only on the final product. He highlights the importance of pre-writing activities, which help learners organize their ideas before they begin writing. Without proper planning, students often produce disorganized texts, even if they have basic knowledge of grammar and vocabulary.

One effective strategy that supports the pre-writing stage is mind mapping. Mind mapping is a visual technique that helps learners generate and organize ideas around a central

concept. Developed by Tony Buzan (2006), this technique reflects the brain's natural way of thinking through associations and visual connections. By using mind maps, students can clearly see the relationships between main ideas and supporting details, which helps them structure their writing more effectively. This is particularly useful for students who struggle with starting their writing or organizing their thoughts in a logical sequence. The use of mind mapping also helps reduce cognitive difficulty during writing. When ideas are visually organized, students can focus more on developing content rather than struggling to remember and connect different points. This aligns with the idea that effective writing instruction should support both cognitive and linguistic processes. By combining visual organization with process-based writing instruction, students are better able to generate ideas, develop coherence, and produce more structured written work.

Furthermore, mind mapping promotes a more student-centered learning environment. It encourages active participation, creativity, and independent thinking. Students become more engaged in the writing process and gain confidence in expressing their ideas. As a result, writing becomes less stressful and more meaningful for learners. Improving English writing skills among first-year B.Ed. students requires instructional strategies that address both cognitive and linguistic challenges. The integration of mind mapping into the writing process provides an effective solution by supporting idea generation, organization, and coherence. The theoretical perspectives of Linda Flower and John R. Hayes (1981), Jeremy Harmer (2004), and Tony Buzan (2006) collectively support the use of structured and visual strategies in writing instruction. These perspectives align with the results of this study, which demonstrate that mind mapping can effectively improve students' English writing skills and enhance their overall learning experience.

OBJECTIVES

1. To study the general English writing skills of first-year B.Ed. English Program students, Faculty of Education, Mahachulalongkornrajavidyalaya University, Thailand.
2. To develop and implement mind mapping for improving English writing skills among first-year B.Ed. English Program students, Faculty of Education, Mahachulalongkornrajavidyalaya University, Thailand.

3. To evaluate the effects of mind mapping on the English writing skills of first-year B.Ed. English Program students, Faculty of Education, Mahachulalongkornrajavidyalaya University, Thailand.

4. To investigate the perceptions and satisfaction among first-year B.Ed. English Program students, Faculty of Education, Mahachulalongkornrajavidyalaya University, Thailand.

LITERATURE REVIEW

According to Flower and Hayes (1981), writing is a complex cognitive process that involves planning, organizing, translating, and revising ideas throughout the writing process. They explain that effective writing requires learners to manage ideas systematically and continuously evaluate their written work. Similarly, Harmer (2004) states that writing is not only a linguistic activity but also a thinking process that allows learners to express ideas, construct meaning, and communicate effectively. These perspectives indicate that English writing requires both language competence and cognitive organization.

Hyland (2003) further explains that writing plays an important role in academic communication because it enables learners to participate in intellectual discussion and knowledge construction. In English as a Foreign Language (EFL) contexts, writing is often regarded as one of the most difficult language skills because learners must simultaneously apply grammar, vocabulary, organization, coherence, and critical thinking. Consequently, many learners experience difficulties in developing effective writing performance.

Mind Mapping in Writing Instruction

Mind mapping was developed and popularized by Tony Buzan (2006), who explains that the human brain naturally processes information through association, imagination, and radiant thinking rather than through linear patterns. According to Buzan (2006), mind mapping helps learners organize information visually through keywords, branches, colors, symbols, and images. This visual structure supports memory, creativity, comprehension, and idea organization.

Wycoff (1991) states that mind mapping improves learners' ability to connect concepts and organize knowledge systematically. Furthermore, Jensen (2008) explains through brain-based learning theory that visual learning strategies such as mind mapping support natural brain functions including pattern recognition, association, and memory retention.

Consequently, mind mapping has become an effective instructional strategy in education because it helps learners reduce cognitive overload and process information more meaningfully. In writing instruction, mind mapping is especially useful during the pre-writing stage because learners can brainstorm ideas, identify relationships among concepts, and organize information before composing texts. Therefore, mind mapping supports coherence, paragraph development, and idea generation in writing activities.

Theoretical Foundations Supporting Mind Mapping

Sweller (1988) proposed Cognitive Load Theory, which explains that learners understand and retain information more effectively when instructional materials are organized in ways that minimize unnecessary cognitive burden. According to this theory, working memory has a limited capacity; therefore, learning activities should be designed to facilitate efficient information processing. Mind mapping supports this principle by presenting information visually and hierarchically, enabling learners to identify relationships among concepts and process information more effectively (Sweller, 1988).

Piaget (1972) and Vygotsky (1978) further emphasized the active role of learners in knowledge construction through Constructivist Learning Theory. Piaget (1972) argued that learners build new knowledge by integrating new information with existing cognitive structures, whereas Vygotsky (1978) highlighted the importance of social interaction and collaborative learning in cognitive development. Through mind mapping activities, learners actively organize ideas, establish conceptual connections, engage in discussions, and collaboratively construct meaning, thereby promoting deeper understanding and knowledge acquisition (Piaget, 1972; Vygotsky, 1978).

In addition, Paivio (1986) introduced Dual Coding Theory, which suggests that learning is enhanced when verbal and visual information are processed simultaneously. Since mind mapping combines textual and visual representations of information, it facilitates dual-channel processing, leading to improved comprehension, creativity, and long-term memory retention. Consequently, mind mapping serves as an effective instructional strategy for supporting meaningful learning and cognitive development (Paivio, 1986).

Previous Studies Related to Mind Mapping and Writing Skills

Several studies have demonstrated the effectiveness of mind mapping in improving students' writing skills. Buzan (2006) argued that mind mapping facilitates idea generation and

organization by enabling learners to visualize relationships among concepts. Empirical studies have further shown that students who use mind mapping during the pre-writing stage are better able to generate ideas, organize paragraphs logically, maintain coherence, and develop supporting details in their written compositions (Al-Jarf, 2009; Fadlelmula, 2010). By providing a structured framework for planning and organizing ideas, mind mapping helps learners produce clearer, more coherent, and well-developed pieces of writing.

Furthermore, research has indicated that mind mapping positively influences students' attitudes toward writing. Davies (2011) reported that the visual and interactive features of mind mapping enhance learners' motivation, creativity, and engagement in writing activities. Similarly, Mento, Martinelli, and Jones (1999) found that mind mapping promotes active participation and encourages learners to express their ideas more confidently. As a result, students experience reduced anxiety during the writing process and develop greater confidence in their writing abilities. These findings suggest that mind mapping is an effective instructional strategy for improving English writing skills among English as a Foreign Language (EFL) learners.

Despite the growing body of research supporting the use of mind mapping in writing instruction, limited studies have specifically examined its effectiveness among first-year B.Ed. English Program students in Thailand. Therefore, this study aims to develop and implement a mind mapping instructional approach to improve the English writing skills of first-year B.Ed. English Program students at Mahachulalongkornrajavidyalaya University, Thailand.

CONCEPTUAL FRAMEWORK

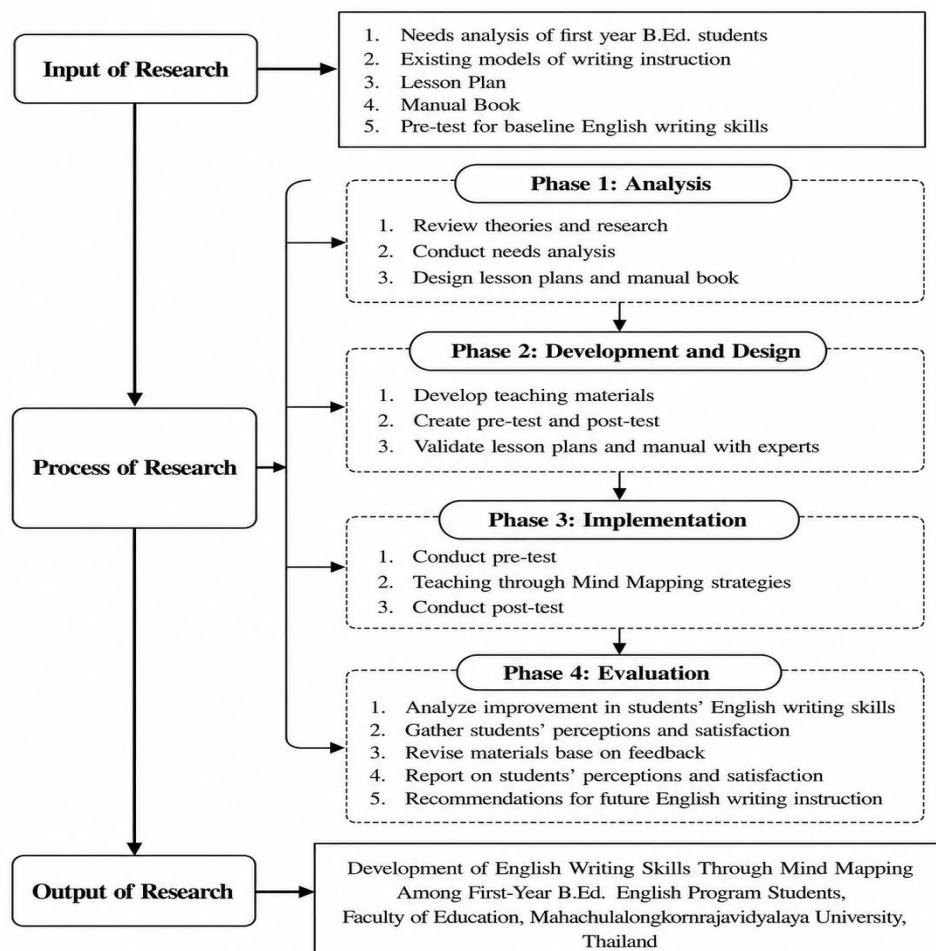


Figure 1: Conceptual Framework

METHODOLOGY

1. Format of the Research

This study employed a Research and Development (R&D) methodology to develop and evaluate English writing skills through mind mapping among first-year B.Ed. English Program students, Faculty of Education, Mahachulalongkornrajavidyalaya University, Thailand. The research was conducted using a one-group pretest-posttest experimental design. The study consisted of four phases: (1) studying related documents and students' English writing skills, (2) developing teaching materials and research instruments based on mind mapping techniques, (3) implementing the experimental instruction, and (4) evaluating the effectiveness of the instruction, students' perceptions, and satisfaction.

2. Sample Population and Experts

The population of this study consisted of 200 first-year Bachelor of Education (B.Ed.) students enrolled in the Faculty of Education at Mahachulalongkornrajavidyalaya University, Thailand. The sample group comprised 20 first-year B.Ed. English Program students selected through purposive sampling. Purposive sampling was employed because the participants were enrolled in the English Program and exhibited difficulties in English writing skills, making them suitable participants for the study (Creswell & Creswell, 2018). In addition, five experts in English language teaching and educational research were invited to evaluate and validate the teaching manual, lesson plans, and research instruments.

3. Research Instruments

The research instruments employed in this study consisted of a teaching manual based on mind mapping techniques for improving English writing skills, lesson plans designed for English writing instruction through mind mapping, a pre-test and post-test used to assess students' writing performance before and after the instructional intervention, an expert evaluation form for validating the quality and appropriateness of the teaching manual and lesson plans, and a questionnaire designed to examine students' perceptions and satisfaction regarding learning English writing through mind mapping. The quality of the research instruments was evaluated by five experts using the Index of Item-Objective Congruence (IOC) developed by Rovinelli and Hambleton (1977). The IOC values ranged from 0.80 to 1.00, indicating a high level of content validity and confirming that all items were appropriate and aligned with the research objectives.

4. Data Collection

The data collection process was conducted in four sequential phases. In the first phase, the researcher reviewed relevant literature, theories, and previous studies related to English writing skills and mind mapping techniques. In addition, students' difficulties in English writing were examined to identify instructional needs. In the second phase, the researcher developed the teaching manual, lesson plans, and research instruments based on the findings from the literature review and identified needs. These materials were then evaluated and validated by five experts to ensure their appropriateness and quality. In the third phase, the experimental instruction was implemented with 20 first-year B.Ed. English Program students over a period of 12 weeks during the first semester of the 2025–2026 academic year. A pre-

test was administered before the intervention to assess students' initial English writing skills, while a post-test was conducted after the intervention to measure changes in writing performance. In the final phase, students completed a questionnaire to evaluate their perceptions and satisfaction regarding the use of mind mapping in English writing instruction.

5. Data Analysis

The collected data were analyzed using both descriptive and inferential statistical methods. Descriptive statistics, including frequency, percentage, mean (M), and standard deviation (SD), were used to examine students' writing performance, perceptions, and satisfaction levels. In addition, a paired-sample t-test was employed to compare students' pre-test and post-test scores in English writing skills in order to determine the effectiveness of the mind mapping instructional intervention (Field, 2018). The findings were interpreted according to established criteria for writing performance and satisfaction levels.

For the questionnaire, respondents rated their opinions using a five-point Likert scale ranging from 1 (Very Dissatisfied) to 5 (Very Satisfied). The interpretation of mean scores was based on predefined criteria: 4.50–5.00 indicated Very Satisfied, 3.50–4.49 indicated Satisfied, 2.50–3.49 indicated Moderately Satisfied, 1.50–2.49 indicated Dissatisfied, and 1.00–1.49 indicated Very Dissatisfied.

6. Research Ethics

This study followed the principles of research ethics in educational research. The researcher requested permission from the Faculty of Education, Mahachulalongkornrajavidyalaya University, before conducting the study. All participants were informed about the objectives, procedures, and purposes of the research. Participation in the study was voluntary, and students had the right to withdraw at any time without any negative consequences. The confidentiality and privacy of participants were strictly protected, and all collected data were used only for academic purposes.

RESULTS

Objective 1: To study the general English writing skills of first-year B.Ed. English Program students, Faculty of Education, Mahachulalongkornrajavidyalaya University, Thailand.

This objective aims to examine what the current level of students' English writing skills is and how these skills are distributed among different performance levels. The results of the pretest indicated that students' English writing skills were generally at a moderate to low level. Many students experienced difficulties in organizing ideas, developing coherent paragraphs, using appropriate vocabulary, and applying correct grammar. The mean score of the pretest was 52.40 with a standard deviation of 9.85, which was interpreted as a fair level.

The frequency and percentage distribution further revealed that 75% of students were in the very poor, poor, and fair categories, while only 25% reached good and very good levels. This indicates that the majority of students required significant improvement in English writing skills before the intervention.

Objective 2: To develop and implement mind mapping for improving English writing skills among first-year B.Ed. English Program students, Faculty of Education, Mahachulalongkornrajavidyalaya University, Thailand.

This objective focuses on what instructional tool was developed and how it was applied in teaching English writing. The researcher developed an instructional manual and lesson plans based on mind mapping techniques. The instructional design included key components such as principles, objectives, learning outcomes, content, social system, support system, and evaluation procedures.

In classroom implementation, mind mapping was mainly applied during the pre-writing stage to support students in brainstorming ideas, grouping related information, organizing supporting details, and preparing structured paragraphs. The implementation showed that students became more active and confident in writing activities. Mind mapping also helped them visually identify relationships between main ideas and supporting details, reduce confusion during writing, and improve overall organization of their written work.

Objective 3: To evaluate the effects of mind mapping on the English writing skills of first-year B.Ed. English Program students, Faculty of Education, Mahachulalongkornrajavidyalaya University, Thailand.

This objective aims to determine what changes occurred in students' writing performance and how their performance improved after the intervention. The comparison between pretest and posttest results showed clear improvement in students' English writing skills.

The distribution of scores indicated that before the intervention, most students were in the very poor, poor, and fair levels. However, after learning through mind mapping, 75% of students moved into the good and very good categories, indicating substantial improvement in writing performance.

The mean score increased from 52.40 (SD = 9.85) in the pretest to 68.75 (SD = 8.10) in the posttest, moving from a fair to a good level. In addition, the reduction in standard deviation suggests that students' writing performance became more consistent after the intervention.

The paired-sample t-test further confirmed a statistically significant difference between pretest and posttest scores ($t = 6.98$, $df = 19$, $p < .05$). This indicates that mind mapping had a significant positive effect on students' English writing development.

Objective 4: To investigate the perceptions and satisfaction among first-year B.Ed. English Program students, Faculty of Education, Mahachulalongkornrajavidyalaya University, Thailand.

This objective aims to explore what students felt about learning through mind mapping and how satisfied they were with its use in English writing instruction. The results showed that students' perceptions and satisfaction toward learning English writing through mind mapping were at a very high level, with a mean score of 4.36 (SD = 0.58).

This finding indicates that students had positive attitudes toward the instructional approach. They reported that mind mapping helped them generate ideas more easily, organize content effectively, develop confidence in writing, reduce anxiety, and increase enjoyment in writing activities.

DISCUSSION

The findings of this study revealed that mind mapping significantly improved the English writing skills of first-year B.Ed. English Program students at Mahachulalongkornrajavidyalaya University, Thailand. Students demonstrated improvement in idea organization, paragraph development, coherence, and content arrangement after participating in mind mapping activities.

The findings of this study indicate that students' English writing skills improved significantly after the implementation of mind mapping instruction, with the mean score increasing from 52.40 in the pre-test to 68.75 in the post-test. This improvement suggests that mind mapping had a positive impact on students' ability to organize ideas, develop coherent paragraphs, and enhance overall writing performance.

These findings are consistent with the Cognitive Process Theory of Writing proposed by Flower and Hayes (1981), which emphasizes that writing involves recursive processes of planning, organizing, translating, and reviewing ideas. In this study, mind mapping supported the planning stage by helping students generate and structure ideas before writing, which contributed to more organized and coherent compositions. The results also support Harmer's (2004) process writing approach, which highlights the importance of pre-writing activities in improving writing quality. The use of mind mapping as a pre-writing strategy enabled students to brainstorm ideas systematically and reduce difficulties in organizing their essays.

Furthermore, the findings align with Buzan's (2006) theory of mind mapping, which suggests that visual representation of information enhances creativity, associative thinking, and memory retention. In the present study, students demonstrated improved ability to connect main ideas with supporting details through visual mapping, which led to clearer and more structured writing outputs.

The results are also consistent with empirical studies conducted by Al-Jarf (2009), who found that mind mapping significantly improved students' writing skills by enhancing idea generation and paragraph organization. Similarly, Mento, Martinelli, and Jones (1999) reported that mind mapping increased learners' engagement, confidence, and ability to express ideas effectively in writing tasks. The increase in post-test performance in this study further supports these findings, showing that students moved from lower performance levels to higher writing proficiency after the intervention.

In addition, the high level of students' satisfaction ($M = 4.36$) indicates positive perceptions toward mind mapping instruction. This supports Davies (2011), who found that visual learning tools such as mind mapping increase motivation and reduce writing anxiety by making learning more interactive and learner-centered.

Therefore, based on both statistical evidence and theoretical support, the study confirms that mind mapping is an effective instructional strategy for improving English writing skills, particularly in enhancing idea organization, coherence, and students' confidence in writing among EFL learners in higher education contexts.

NEW KNOWLEDGE

This study demonstrates that mind mapping is an effective strategy for improving English writing skills among first-year B.Ed. English students. By helping learners organize ideas visually and develop coherent texts, mind mapping significantly enhanced writing performance, motivation, confidence, and engagement. The findings highlight its value as a student-centered approach to English writing development in EFL classrooms.

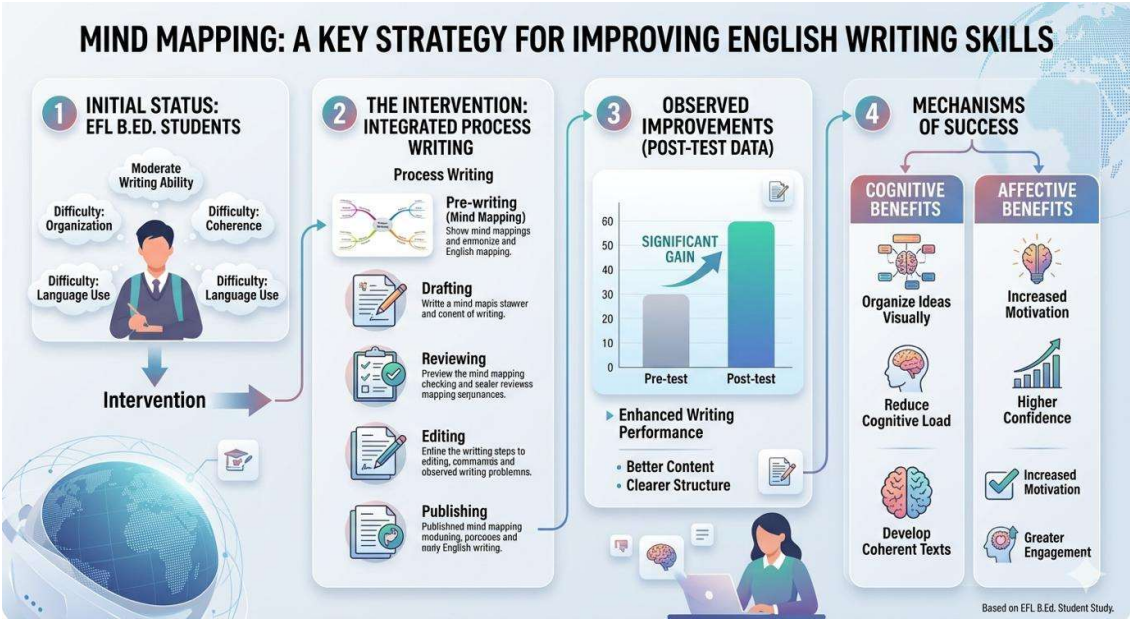


Figure 2: New Knowledge Gain from The Study

CONCLUSIONS

This study developed and implemented mind mapping to enhance English writing skills among first-year B.Ed. English Program students at the Faculty of Education, Mahachulalongkornrajavidyalaya University, Thailand, and examined students' perceptions and satisfaction.

The findings indicate a statistically meaningful improvement in writing performance, with the post-test mean score (68.75) exceeding the pre-test mean score (52.40). This reflects improved ability in idea organization, paragraph development, coherence, and clarity in writing.

Students also reported high satisfaction ($M = 4.36$) and positive perceptions of mind mapping, noting its usefulness in idea generation, information organization, creativity enhancement, and reducing writing difficulties, which in turn increased their confidence and motivation.

Overall, the study confirms that mind mapping is an effective instructional strategy for enhancing English writing performance and fostering positive learner attitudes in EFL contexts.

RECOMMENDATIONS

Teachers are recommended to integrate mind mapping into the pre-writing stage to support idea development, coherence, and learner confidence. Institutions should promote learner-centered pedagogies and provide training on innovative instructional strategies such as mind mapping.

Students are encouraged to apply mind mapping regularly to develop creativity, critical thinking, and autonomous learning skills. Future research should include larger samples, diverse educational contexts, and additional language skills (e.g., speaking, reading, and listening), as well as explore digital mind mapping tools in language instruction.

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