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فعالية استخدام استراتيجية الخرائط الذهنية في تنمية مهارات الكتابة التعبيرية لدى طالبات المرحلة الإعدادية

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المستخلص:

يهدف هذا البحث إلى التعرف على فاعلية استخدام استراتيجية الخرائط الذهنية في تنمية مهارات التعبير الكتابي باللغة الإنجليزية لدى طلاب المرحلة المتوسطة. اعتمدت الباحثة المنهج التجريبي باستخدام مجموعتين متكافئتين: تجريبية وضابطة، مع تطبيق اختبار قبلي وبعدي لقياس مستوى مهارات الكتابة التعبيرية. تكونت عينة البحث من (٦٠) طالباً من الصف الأول المتوسط في مدرسة التراث المتوسطة للبنين، حيث دُرست المجموعة التجريبية باستخدام استراتيجية الخرائط الذهنية، بينما دُرست المجموعة الضابطة بالطريقة التقليدية .

أوضحت الدراسة أهمية مهارة التعبير الكتابي باعتبارها من أكثر المهارات اللغوية تعقيداً، إذ تتطلب تنظيم الأفكار واستخدام التراكيب اللغوية بصورة صحيحة ومترابطة. كما أشارت إلى أن الاعتماد على الأساليب التقليدية يؤدي إلى ضعف لدى الطلاب في تنظيم الأفكار والربط بينها، مما ينعكس سلباً على مستوى الكتابة باللغة الإنجليزية. لذلك برزت الخرائط الذهنية كاستراتيجية حديثة تساعد في تنظيم الأفكار بصرياً وربطها بطريقة منطقية تسهل عملية الكتابة والتعلم .

استخدمت الباحثة اختباراً للتعبير الكتابي تضمن خمسة محاور أساسية هي: المحتوى، وتنظيم الأفكار، والأسلوب، والصحة اللغوية، وعلامات الترقيم، وتم تصحيح الاختبار وفق مقياس تقدير محدد. كما تم التأكد من صدق الأداة وثباتها من خلال عرضها على مجموعة من المحكمين وتطبيقها على عينة استطلاعية .



أظهرت النتائج وجود فروق ذات دلالة إحصائية لصالح المجموعة التجريبية في الاختبار البعدي، حيث حقق الطلاب الذين تعلموا باستخدام الخرائط الذهنية تحسناً كبيراً في مهارات الكتابة التعبيرية مقارنة بطلاب المجموعة الضابطة. كما بيّنت النتائج أن استراتيجية الخرائط الذهنية أسهمت في تنمية قدرة الطلاب على تنظيم الأفكار، وزيادة الترابط بين الجمل، وتحسين استخدام المفردات والتراكيب اللغوية، إضافة إلى رفع الدافعية والمشاركة داخل الصف .
وأوصى البحث بضرورة اعتماد استراتيجية الخرائط الذهنية في تدريس التعبير باللغة الإنجليزية في المرحلة المتوسطة، مع تدريب المدرسين على استخدام الاستراتيجيات الحديثة التي تشجع التفكير الإبداعي والتعلم النشط، إلى جانب تضمين المناهج التعليمية أنشطة تعتمد على الخرائط الذهنية لتنمية مهارات الكتابة والتفكير لدى الطلاب .

The Effectiveness of Using the Mind Mapping Strategy in Developing Expressive Writing Skills Among Preparatory School Female Students

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Abstract

This research aims to identify the effectiveness of using mind mapping strategies in developing English writing skills among middle school students. The researcher adopted an experimental approach using two equivalent groups: an experimental group and a control group. A pre-test and post-test were administered to measure the level of expressive writing skills. The research sample consisted of 60 first-year middle school students at Al-Turath Middle School for Boys. The experimental group was taught using the mind mapping strategy, while the control group was taught using the traditional method.

The study highlighted written expression as one of the most complex language skills, requiring organized ideas and correct, coherent use of linguistic structures. It also indicated that relying on traditional methods



leads to a clear weakness among students in organizing and connecting ideas, which negatively impacts their English writing skills. Therefore, mind mapping emerged as a modern strategy that helps organize ideas visually and connect them logically, thus facilitating the writing and learning process.

The researcher used a written expression test that included five main components: content, organization of ideas, style, linguistic accuracy, and punctuation. The test was scored according to a specific rating scale. The validity and reliability of the instrument were confirmed by presenting it to a panel of experts and applying it to a pilot sample.

The results showed statistically significant differences favoring the experimental group in the post-test. Students who learned using mind maps showed significant improvement in expressive writing skills compared with students in the control group. The results also indicated that the mind mapping strategy helped students develop their ability to organize ideas, increase coherence between sentences, improve vocabulary and grammatical structures, and enhance motivation and classroom participation.

The research recommends adopting the mind mapping strategy in teaching English expression at the intermediate level, training teachers in modern strategies that encourage creative thinking and active learning, and incorporating mind mapping-based activities into the curriculum to develop students' writing and thinking skills.

Therefore, teaching writing skills requires modern educational strategies that consider linguistic and cognitive aspects and develop the ability to organize ideas and think creatively, in a way that aligns with learners' characteristics and different needs (Bukhari, 2016, p. 59).

Nevertheless, weakness in Arabic language skills still exists, especially in written expression. This is due to multiple reasons, most notably the teaching methods used, students' weak ability to understand texts and grasp their meanings, and their inability to distinguish between words and use them correctly.

Expressive writing skill is considered one of the basic language skills that contribute to enabling learners to express their thoughts and feelings in an organized and clear manner; however, the reality of teaching the Arabic



language at school stages, especially at the intermediate stage, indicates a noticeable weakness in students' performance in this skill.

Second: The Importance of the Research:

Arabic occupies a prominent place in the lives of individuals and communities, as it is a fundamental means of communication and human interaction. It also serves as a tool for expressing thoughts and emotions and a vessel for cultural and civilizational heritage. The success of teaching it depends on a set of factors, most notably the teacher's competence and ability to employ appropriate educational strategies, as well as the quality of the curricula and the availability of the necessary educational resources (Safi, 2018, p. 17). Expressive writing stands out as a productive language skill that enables learners to express their ideas in an organized and clear manner, as it develops their thinking and analytical abilities and helps them use language in various life situations. Writing, along with speaking, is also an effective way to produce and interact with language, which enhances learners' linguistic competence.

In light of modern educational developments, it has become necessary to employ innovative teaching strategies that contribute to improving learning outcomes; among these strategies are mind maps, which are considered modern methods for organizing knowledge and presenting it visually. Mind maps are based on a central idea from which interconnected ideas branch out hierarchically, helping learners understand the information and connect it in an organized way.

The scientific significance is manifested as follows:

- It contributes to enriching educational literature related to developing expressive writing skills.
- It highlights the effectiveness of the mind mapping strategy in teaching the Arabic language.
- Provides a theoretical framework that explains the concept of mind maps and their role in organizing ideas.
- Supports modern approaches that focus on active learning and the development of thinking.



The practical importance is also evident:

- It provides a practical model for using mind maps in teaching expression.
- It helps teachers improve students' level in expressive writing.
- It contributes to developing students' ability to organize their ideas and express them clearly.
- Enhances students' motivation toward learning and participation in class.

Third: Research Objective

The research aims to identify the effectiveness of mind maps in developing expressive writing skills in Arabic for middle school female students.

Fourth: The Research Hypothesis:

- There are statistically significant differences at the significance level ($\alpha \leq 0.05$) between the mean scores of the experimental and control group students in the pre-test measurement of expressive writing skills.
- There are statistically significant differences at the significance level ($\alpha \leq 0.05$) between the mean scores of the students in the experimental and control groups in the post-test of expressive writing skills, in favor of the experimental group.
- There are statistically significant differences at the significance level ($\alpha \leq 0.05$) in each sub-skill of expressive writing skills among the experimental group students between the pre-test and post-test, in favor of the post-test.

Fourth: The Research Limits:

Temporal limits: First semester of the year 2025-2026

Spatial limits: Intermediate schools affiliated with the Directorates of Education in Baghdad

Human limits: A sample of second intermediate grade female students in a school

Fifth: Definition of Terms:

Firstly: Mind Maps

They are a visual tool for organizing information, based on a central idea from which a set of keywords and related concepts branch out, and colors, symbols, and images are used to represent the relationships between concepts, reflecting the nature of the radiant thinking of the human brain (Buzan, 2018, p. 25).



Operational definition: It is a teaching method used in this research to organize students' ideas before expressive writing by drawing a diagram that starts with a main idea from which sub-ideas branch out, helping to build a coherent expressive topic.

Secondly: Expressive Writing

It is a productive linguistic skill that is represented in the learner's ability to transform their ideas, feelings, and experiences into an organized and coherent written text, achieving clarity of meaning and effectiveness of communication (Yadi, 2013, p. 26).

Operational definition: It is the grade that the student obtains in the expressive writing test prepared in this research, according to criteria that include the organization of ideas, coherence, linguistic richness, and linguistic accuracy.

Chapter Two

(The Theoretical Background and Previous Studies)

The Theoretical Background:

Firstly: The Mind Maps

Tony Buzan introduced mind maps as an innovative method to improve learning and understand how the human brain works. They began as a way to take notes using keywords and colors, aiming to reduce written information and focus on core concepts. With their development, they became an effective tool for organizing ideas and linking them visually, contributing to easier understanding and recall.

Mind maps are based on employing multiple elements, such as keywords, images, and colors, where the main concept is placed at the center of the page, and then the main and sub-ideas branch out from it using lines and arrows that show the relationships between them, which corresponds to the nature of the brain's work in processing information in an interconnected and non-linear manner (Nebojša et al., 2011, p. 337).

Buzan (2018) believes that mind maps are characterized by several basic features,

most

notably:



- The presence of a central axis representing the main idea or the subject of learning.
 - A branching of a group of main ideas from the center.
 - A branching of secondary ideas from the main branches in a hierarchical manner.
 - The use of various visual elements, such as colors, symbols, and images, to clarify relationships and organize information (Buzan, 2018, p. 22).
- . They also help develop creative thinking, increase learning motivation, and enhance the ability to grasp new concepts (Ningsih & Asnawi, 2023, p. 166). The types of mind maps have varied according to researchers' classifications, and among the most prominent are:
- Binary mind maps: which branch out from a central idea into two main branches, and are used to present topics based on comparison or binary division.
 - Compound mind maps: which branch out into several main and sub-branches, usually ranging between (3–7) branches, in accordance with the capacity of short-term memory, and are characterized by their ability to organize information and develop classification skills.
 - Collective mind maps: which are built collaboratively among a group of learners, contributing to the exchange and integration of ideas, and enhancing collaborative learning and the construction of a collective mind map.

Secondly: Expressive Writing:

Writing is an important means of linguistic communication, and it is an acquired skill that is gained and learned. This occurs as it is a mental activity based on thinking, and it requires great effort, as it involves written expression, spelling, and handwriting to integrate these aspects and form the skill of writing (Rashid, 2013: 24)

Writing is not merely a final product through which a learner's performance is assessed; rather, it is an integrated communicative mental process that reflects the student's thinking and organization of ideas. When a teacher views students' writings as a means to understand what is going on in their minds, rather than merely to observe linguistic errors, this helps to enhance students' self-confidence and increases their motivation to write, which



positively reflects on the gradual development of their level (Risdayanti, 2023, p.12).

Writing is considered one of the most important productive language skills that learners rely on to express their thoughts and feelings clearly and It is a process that requires precise use of vocabulary and linguistic structures, alongside the ability to arrange and construct ideas in a logically connected manner, making it a complex skill that requires continuous training and ongoing practice to reach an advanced level of proficiency (Bukhari, 2016, p.58).

Expression in general is also a fundamental tool for communication between individuals, as it enables a person to convey their thoughts and feelings to others, whether orally or in writing. Expression is considered the main goal of language education because it is the means through which social interaction is achieved and experiences and knowledge are conveyed in a clear and understandable manner (Hamid, 2023, p.100).

Expression is viewed as a comprehensive linguistic activity that connects the individual to their social environment, as it helps them interact with others and influence them. Therefore, paying attention to teaching expression at different educational stages is considered necessary, because it contributes to preparing the student to be capable of effective communication and expressing themselves and their ideas in an organized and persuasive manner

Types of Expression

Expression is divided into two main types:

1. Functional (Written) Expression:

This is used to achieve practical life purposes, such as writing letters and reports, and aims to facilitate communication between individuals despite differences in time and place.

2. Creative Expression: It concerns expressing feelings and thoughts in an influential artistic style, relying on imagination and the ability for linguistic imagery. Both types are considered essential in the life of the learner, as they contribute to developing their ability to adapt to various life situations, and they require continuous training based on stimulating students' motivation towards writing, which requires the teacher to provide an encouraging and stimulating educational environment (Haseeb, 2014, p.8).



Objectives of Teaching Expression: Teaching expression aims to achieve a set of educational and linguistic objectives, the most prominent of which are: Enabling students to express their thoughts and feelings in a clear and correct manner. Developing their linguistic wealth in terms of vocabulary and structures. Training them to organize ideas, sequence them, and connect them logically. Instilling values and knowledge, and developing positive attitudes. Enhancing their ability to communicate effectively in various life situations. Developing oral and written expression skills to achieve linguistic integration

Second: The Previous Studies: the Arabic Studies:

1. studied the effect of using the mind mapping strategy on developing writing expression skills among fifth-grade primary school students.

This study aimed to verify the effect of using the mind mapping strategy on developing writing expression skills among fifth-grade elementary students. The two researchers adopted the experimental method, where a sample of (60) students was selected and divided into two groups: an experimental group and a control group. The strategy was applied to the experimental group during the teaching of writing expression, while the control group continued with the traditional method. After conducting the experiment, the students' performance was evaluated using a tool prepared by the two researchers. The results showed statistically significant differences in favor of the experimental group, both compared with the control group and between their pre- and post-measurements. This improvement was attributed to the role of mind maps in developing expression skills such as fluency, flexibility, originality, and elaboration.

2. Mansour (2020) examined the effectiveness of a training program in improving writing expression skills among sixth grade elementary students in the Kingdom of Bahrain.

This study aimed to reveal the effectiveness of a training program in improving the writing expression skills of sixth-grade students in the Kingdom of Bahrain. To achieve this goal, the researcher used the quasi-experimental method based on pre-test and post-test measurements for a sample of (30) students.

The program included activities related to the writing process, including planning, rewriting data into paragraphs, summarizing, and writing stories and letters, over several weeks.



The impact of the program was measured using an achievement test in written expression, whose validity and reliability were verified, and it covered two types of writing: narrative and persuasive. The results showed statistically significant differences in favor of the post-application, indicating the effectiveness of the program. It also showed a clear improvement in organizing ideas and sentence structure, with less improvement in the content aspect.

Second: Foreign Studies

3. Study by Berminati et al. (2023) Improving the writing level of seventh-grade students through employing the mind mapping strategy

This study aimed to improve the writing level of seventh-grade students by employing the mind mapping strategy. The researchers relied on the classroom action research methodology and applied it to a sample consisting of (30) male and female students.

The study was conducted in two phases (two educational cycles), according to the Kemmis and Taggart model, which includes planning, implementation, observation, and evaluation, with a preliminary study conducted to determine the students' level and the difficulties they face.

The results showed remarkable development in students' performance, as their participation in class activities improved and their writing grades gradually increased during the implementation stages. These results indicate that the use of mind maps effectively contributes to improving writing skills and invigorating learning inside the classroom.

4. A study on the effect of using mind maps in developing writing skills in English among tenth-grade students in Indonesia.

This study aimed to identify the impact of using mind maps on developing English writing skills among tenth-grade students in Indonesia. The study used an experimental method with a pretest-posttest design.

A set of tools was used, including writing tasks to produce descriptive texts, assessment tests, along with the use of mind maps to organize ideas during learning. Students' performance was evaluated according to several criteria, such as content, organization, vocabulary, and language accuracy, and showed a noticeable improvement in the students' writing level after applying the strategy, as the use of mind maps had a clear positive impact on



developing various aspects of writing, which confirms its effectiveness in enhancing this skill.

5. Tavasani (2017) studied the effect of an integrated program combining home, school, and university on developing writing expression skills in a first-grade female student.

This study aimed to investigate the effect of an integrated program combining home, school, and university in developing the writing expression skills of a first-grade female student.

The Comment on Previous Studies:

A review of previous studies, both Arabic and foreign, shows that they have paid close attention to developing writing skills and written expression among learners through modern educational strategies, most notably the mind mapping strategy.

In Arabic studies, such as the study by Jabbour and Tashma (2020) and the study by Mansour (2020), the focus was on employing educational programs and modern strategies to develop the writing expression skills of primary school students, its results showed statistically significant differences in favor of the groups that were exposed to teaching using these strategies, indicating their effectiveness in improving the level of writing performance, especially in aspects of organization and idea development.

As for foreign studies, such as the study by Berminati et al. (2023) and the study by Ningsih and Asnawi (2023), they also confirmed the positive to improving the organization of ideas and increasing learning motivation, in addition to raising achievement levels in various components of writing. A study by Tavasani (2017) also showed the importance of integrating different educational environments in developing writing skills from the early stages. These studies are similar in relying on experimental and quasi-experimental methods, and in using various tools to measure writing skills. Their results also agree on emphasizing the effectiveness of modern strategies, foremost among them mind maps, in improving learners' writing performance.

However, these studies differ in terms of educational level, sample size, and educational environment, as well as some focusing on English as a foreign language, while others focused on Arabic.



Chapter Three Research Methodology and Procedures

First, Research Methodology:

The current research relies on the experimental method, which is one of the scientific approaches used to study the relationships between variables by controlling the factors affecting the phenomenon under study, with the aim of reaching precise results that explain the problem and determine the effect of the independent variable on the dependent variable.

The researcher used the experimental design with two groups (experimental and control) with the application of pre-test and post-test, in order to measure the effect of the mind maps strategy on developing expressive writing skills among middle school students. The experimental group was studied using the mind mapping strategy in teaching expressive writing skills in the Arabic language subject, while the control group was studied using the traditional method relied upon in teaching, as shown in the following table:

Table (1) Sample Design

The group	The number	The independent variable	The Test
Experimental	30	The Mind Maps Strategy	Expressive writing test
Control	30	The traditional method	

Secondly, Research Community and Sample:

The research community consisted of female students in the intermediate stage at schools affiliated with the First District Directorate of Education in Al-Karkh, Baghdad, for the academic year (2024–2025). The researcher intentionally selected Al-Duha Intermediate School for Girls to apply the experiment, due to the cooperation of the school administration and the availability of suitable conditions for conducting the research.

As for the research sample, it consisted of (60) students from the second intermediate grade, who were selected from the same school, and then randomly assigned to two equivalent groups, with (30) students in the experimental group that was taught using the mind mapping strategy, and



(30) students in the control group that was taught using the traditional method.

The study ensured equivalence between the two groups in non-experimental variables, such as chronological age and achievement level. To verify equivalence, the Raven's Intelligence Test, which is one of the standardized tests, was used, and the results showed no statistically significant differences between the two groups, indicating their equivalence in intelligence level, as shown in the following table:

Table (2) The mean, standard deviation, and 'T' value for the control and experimental groups in intelligence scores

Intelligence Variable	The Mean	Standard Deviation	The value of 'T'	Significance
The control group	٣٨.٩	٦.٣٠	٠.٤٧	Non-functional
The experimental group	٣٨.٨	٥.٢٣		Non-functional
Chronological age				
The experimental group	١٦٣.٤	٥.١٢	٠.٣٩	Non-functional
The control group	١٦١.٨	٥.٤٥		Non-functional

The results of Table (2) show no statistically significant differences at the 0.05 level in the intelligence test, and no statistically significant differences at the 0.05 level in the age variable, indicating the equivalence of the two groups in the intelligence and age variables.

The Research Tool:

The current research tool was prepared based on educational literature and previous studies related to writing skills. A test in written expression was developed to measure the level of middle school students in this skill. The researcher based the design of the tool on what was mentioned in previous



studies regarding writing assessment criteria, which focused on essential elements such as content, organization of ideas, sentence structure, linguistic accuracy, and style (Ashour, 2014; Rabie, 2002; Mansour, 2020).

It was also indicated from the evaluation rubrics used in previous studies in preparing the performance grading scale, which ensures objectivity in scoring and accuracy in measurement. The tool consisted of a written topic that students were asked to express in writing, for which a total grade was allocated to measure the level of performance in writing skills according to the adopted standards. The expressive writing test consists of a single composition topic, on which students are required to write within a specified period of time, in order to assess a set of basic skills, which are:

- Skill in generating ideas and clarity of them
- Skill in organizing ideas and their coherence
- Skill in style and use of vocabulary
- Skill in language correctness (grammar and spelling)
- Skill in using punctuation marks

Correction was carried out by assigning a weight of (20%) to each axis and the test score (100) degrees. It was applied to a pilot sample of (25) second-year intermediate female students from outside the study sample, and the students who failed, obtaining a score of less than 20% on the test, were excluded from the analysis. Several topics were presented to a number of reviewers, and the following topic was chosen:

The Psychometric characteristics of the test:

A- Validity and Reliability: To ensure validity and reliability, the researcher applied the test to a pilot sample of 25 students from outside the research sample.

The Tool Validity: The validity of the expressive writing test was verified by presenting it to a group of experts specialized in Arabic language curricula and teaching methods, as well as measurement and evaluation, to provide their opinions on the suitability of the test topic for middle school students, the comprehensiveness of the test regarding expressive writing skills, the clarity of the instructions, and the wording of the question. Necessary modifications were made based on their observations, which contributed to achieving face validity and content validity of the tool.



Stability of the instrument: To ensure the suitability of the chosen topic for the second intermediate grade, it was applied more than once on the exploratory sample to calculate the reliability coefficient. The researcher corrected the test ten days after the first correction, and then asked another corrector to grade the papers. The stability coefficient over time was (0.93) between the researcher and another corrector.

B- Applying the Strategy:

Procedures for Applying the Mind Mapping Strategy
The mind mapping strategy was applied in teaching the expressive writing subject to the students of the experimental group as follows:

First: The Aims: The strategy aimed at developing expressive writing skills among female students, by helping them organize ideas, generate them, and connect them logically, contributing to improving the quality of written texts and enhancing the ability to write clearly and coherently.

Second: The Content and Application:

The assigned essay topics within the Arabic language subject were chosen, where the researcher presented the topic and explained the main idea, then trained the students on building mind maps that start from the central idea and branch out into main and sub-ideas using key words, symbols, and colors. After that, these ideas are organized hierarchically to help turn them into a complete written text.

Third: Evaluation:

The students' performance was evaluated through their written production based on mind maps, using a rating scale that includes criteria such as content, organization, style, and language accuracy, along with providing feedback to enhance and improve performance.

The Statistical Results

Chapter Four: Statistical Results

To test the first hypothesis: there are no statistically significant differences at the (0.05) level between the average scores of the experimental group students and the control group in the pre-test of writing expression skill.

To test the hypothesis, the arithmetic means and standard deviations of the scores of the female students in the experimental group and the control group in the expressive writing test were calculated after applying teaching using



the mind mapping strategy, then the T value for two independent samples was calculated to determine the significance of the differences, and the following table illustrates this:

Table (3) Means, Standard Deviations, and t-Values of the Scores of Students in the Control and Experimental Groups in the Pre-Test

The group	Number of sample members	Arithmetic mean	Standard deviation	The value of 'T'	Significance
The experimental group	30	٣٦.٨٣	٤.٩٩	٠.٤٨٧	Function
The control group	30	٣٦.١٦٦	٥.٥٨		

It is evident from the results of Table (3) related to the pre-test that the arithmetic mean of the scores of the students in the control group reached (36.83) with a standard deviation of (4.99), while the arithmetic mean of the scores of the students in the experimental group reached (36.16) with a standard deviation of (5.58).

The calculated t-value reached (0.487), which is a value less than the tabulated value at a significance level of (0.05), indicating that the differences between the two groups are not statistically significant, which suggests the equivalence of the two groups in the level of written expression skill before the experiment was applied.

Second hypothesis: There are no statistically significant differences at the (0.05) level between the mean scores of the experimental group students and the control group students in the post-test of writing expression skill.

To test this hypothesis, the T-test for two independent samples was used, after calculating the arithmetic means and standard deviations of the scores of the experimental and control group students in the post-test, as shown in the following table:

Table (4) Means, standard deviations, and t-values for the scores of the students in the control and experimental groups in the post-test

The group	Number of sample members	Arithmetic mean	Standard deviation	The value of 'T'	Significance



The experimental group	30	٥١.٦٦	٨.٩٣	12.663	Function
The control group	30	٧٩.٣٣٣	٧.٩٥٨		

The results showed clear differences between the two groups, as the arithmetic mean for the control group was (51.66) with a standard deviation of (8.93), while the arithmetic mean for the experimental group was (79.33) with a standard deviation of (7.95). The t-value reached (12.663), which is greater than the tabulated value at the (0.05) level, indicating that the differences are statistically significant in favor of the experimental group. This reflects the impact of using the mind mapping strategy in improving students' performance in writing skills compared to the traditional method.

The third hypothesis is that there are no statistically significant differences at the 0.05 level between the average scores of the female students in the experimental group in the pre-test and post-test. To test the hypothesis, the arithmetic means and standard deviations of the scores of the experimental group and the control group in the expressive writing test were calculated before and after applying teaching using the mind mapping strategy; then the T value for two independent samples was calculated to determine the significance of the differences, and the following table illustrates this:

Table (5) Means, Standard Deviations, and T-Value of the Scores of the Experimental Group Students in the Pre-Test and Post-Test

The group	Number of sample members	Arithmetic mean	Standard deviation	The value of 'T'	Significance
Before	30	٣٦.٨٣٣	٤.٩٩	24.772	Function
After	30	٧٩.٣٣٣	٧.٩٥		

From Table (5), the performance of the experimental group female students in the pre-test and post-test was compared, where the arithmetic mean in the



pre-test was (36.83) with a standard deviation of (4.99), while it increased in the post-test to (79.33) with a standard deviation of (7.95). The t-value reached (24.772), which is statistically significant at the (0.05) level, indicating a significant improvement in students' performance after applying the strategy and confirming its effectiveness in developing the skill of written expression. To further interpret the results, the effect size was calculated using Eta coefficient, which indicates the impact of using this strategy in increasing the achievement of the experimental group students, as shown in Table (6):

Eta factor	Eita Square
0.931	0.833

It can be seen from Table (5) that its value reached (0.913), and Eta squared reached (0.833), which is a very high value, indicating that a large proportion of the improvement in the students' grades is attributed to the use of the mind maps strategy. This value suggests that approximately 83% of the variance in achievement is due to the independent variable, confirming the strong impact of this strategy in improving middle school students' writing expression skills.

Discussion of the Results:

The research results can be discussed and interpreted in light of the use of the mind mapping strategy in teaching middle school students, as the results showed a clear superiority of the experimental group over the control group in the post-test.

In addition, there was a significant improvement between the pre- and post-application among the experimental group female students. This improvement is attributed to the nature of the mind mapping strategy, which is based on organizing ideas in a visually connected manner, helping students generate and arrange ideas logically before starting to write, which is often lacking in traditional rote-based teaching. Mind maps also contributed to facilitating the process of planning the topic, as they enabled the students to identify the main idea and break it down into sub-ideas, which positively reflected on the construction of the text in terms of sequence and coherence, and this was evident in the increase of their grades in the areas of organization and content. This strategy also created an active learning environment that made the student the center of the educational



process, increasing participation in classroom activities, as shown by their interaction while preparing and discussing the maps, and leading to the development of self-confidence and the ability to express themselves. On the other hand, mind maps helped develop the linguistic aspect by enriching students' vocabulary, as this strategy relies on keywords and links, which pushes students to search for appropriate words to express their ideas, thereby improving the style and accuracy of language use. Moreover, using colors and symbols in the maps helped consolidate information in memory, making it easier to recall during writing. On the other hand, the low level of the control group students is attributed to the reliance on traditional teaching, which does not provide sufficient opportunities for thinking or participation, but rather focuses on direct presentation of the material, making the student a passive receiver, which limits her ability to organize her thoughts and express them comprehensively. These results are consistent with many studies, which have confirmed the effectiveness of modern strategies, particularly mind mapping, in developing expressive writing skills. The results of the current research showed the superiority of the experimental group students over the control group students in the post-test, which aligns with the findings of the studies by (Jabour & Tashmeh, 2020) and (Mansour, 2020), which pointed to the effectiveness of modern programs and strategies in improving writing performance.

These results are also consistent with foreign studies, such as (Berminati et al., 2023) and (Ningsih & Asnawi, 2023), which showed that mind maps contribute to organizing ideas and increasing learning motivation, which positively reflects on the quality of writing.

This agreement can be explained by the nature of mind maps, which help organize ideas and connect them logically, contributing to improved learners' writing. At the same time, some differences in the effect size may appear between studies, which is attributed to differences in the educational stage, the learning environment, and the duration of implementation. This confirms the effectiveness of mind maps in developing writing skills, due to the visual organization of information they provide and the stimulation of cognitive processes, which contributes to improving the quality of written texts. Accordingly, it can be said that the mind mapping strategy is considered one of the modern effective methods that contribute to developing writing expression skills among middle school female students, due to its clear



impact on improving linguistic performance and fostering organized and creative thinking.

Recommendations:

- The necessity of adopting the strategy of mind maps as an effective teaching method in teaching the expression subject at the intermediate stage, due to its proven clear role in developing expressive writing skills.
- Emphasizing the preparation of specialized training programs for Arabic language teachers, aimed at developing their skills in employing modern strategies, foremost among them mind maps within the classroom.
- Directing the teaching process towards focusing on expressive writing as a basic productive skill, and moving away from traditional methods that focus on rote learning and memorization.
- Reviewing the content of Arabic language curricula to ensure the inclusion of activities and applications based on mind maps to develop students' thinking skills and organization of ideas.
- Preparing an interactive learning environment that encourages students to express themselves freely, develops self-confidence, and enhances active participation in the classroom.
- Adopting modern assessment methods based on clear criteria, such as grading scales, to ensure an objective and accurate evaluation of expressive writing skills.

Suggestions for Future Studies

- Conducting studies that examine the effectiveness of mind maps in developing other language skills, such as reading and listening skills among middle school students.
- Studying the effect of using mind maps on developing higher-order thinking skills, such as creative and critical thinking, among students at various stages.
- Investigate the effectiveness of electronic mind maps and compare them with traditional maps in improving students' writing skills.
- Conduct comparative studies between the mind mapping strategy and other modern teaching strategies in developing writing expression skills.

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Expressive Writing Test

Grade: Second Intermediate

Subject: Arabic Language (Expression)

Time: 45 minutes.

Organization plays an important role in a student's success in their academic and daily life.

Write an essay in which you explain the importance of organization, guided by the following ideas:

1. What is meant by organization?
2. What is the importance of organization in a student's life?
3. How does organization help achieve success and excellence?
4. What are the consequences of neglecting organization?
5. How can a student organize their time and daily life?
6. Mention an example from your life that illustrates the importance of organization?



Answer Instructions: Write the topic in a clear and organized style (introduction, body, conclusion). Consider the sequence and coherence of ideas.

Test Assessment Card:

Expressive	Writing	Test	Grading	Scale
Students' performance in the expressive writing test is evaluated according to the following criteria, with a total score of 100 points:				
Criterion	Description			Score
Content: clarity of the idea, adherence to the topic of expression, and richness	of ideas			20%
Organization of Ideas: (introduction, body, conclusion)	arranging ideas and their logical sequence			20%
Style: using a clear and appropriate style, and variety in expression				20%
Language Accuracy: spelling	correctness of language with no grammatical or errors			20%
Punctuation: use of punctuation marks and correct paragraph division				20%

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