

THE EFFECTIVENESS OF MIND MAPS IN IMPROVING THE UNDERSTANDING OF STRESS MANAGEMENT IN GRADE 5 STUDENTS OF TASDIKIAH THAILAND

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ABSTRACT

This research is motivated by the low understanding of students in the learning process caused by the lecture method which tends to make students passive, boring, sleepy and less involved in learning. This condition not only impacts learning outcomes, but also affects the psychological aspects of students, in the form of stress originating from academic, family and social pressures. Therefore, an interactive, effective and easy-to-understand method is needed to support stress management with classical services. This study aims to determine the effectiveness of the mind map method in improving understanding of stress management in grade 5 students of Tasdikiah Thailand. The method used is a quantitative experiment with a Quasi Experiment Nonequivalent Control Group Design. This study provided a pretest and posttest to the experimental class and the control class to see the differences in the two groups. The population in this study were all students of grades 5.1 and 5.3, totaling 64 people, where grade 5.1 was designated as the experimental class given treatment and grade 5.3 as the control class. Sampling was used with incidental sampling techniques, this sample was based on students who happened to be there at the time of the study. The results of this study found that; 1) the pretest results of the experimental class averaged 9.53 and the control class averaged 5.83; 2) the posttest results of the experimental class averaged 11.89 and the control class 6.92; 3) this hypothesis test was carried out through a non-parametric test, namely the Man-Whitney U test, obtained a sig value (2-tailed) of $0.000 < 0.05$, so there is a significant difference between the experimental and control classes. So H_a is accepted and H_o is rejected, which shows that this study is effective in improving understanding of stress management.

Keywords: Mind map method, Understanding stress management, Classical services

INTRODUCTION

The learning process in schools aims to help students understand the material they are studying. According to Benjamin S. Bloom, student understanding can be seen from their ability to translate, interpret, and extrapolate the information they learn. (Sari et al., 2022). However, in its implementation, many problems are still found in the learning process, particularly with the learning method used, namely the lecture method. According to Gulo and Tafonao, the lecture method tends to make students passive, bored, easily sleepy, and less engaged in learning. (Gulo & Tafonao, 2023) This impacts students' understanding, making the learning process less than optimal. In addition to impacting academics, this condition can affect students' psychological and emotional well-being, leading to stress.

Stress is the body's reaction to pressure from a particular situation. Stress can be physical, mental, or emotional. When experiencing stress, the body becomes alert to imminent danger, causing the body to release the hormones cortisol and adrenaline. (Roby, 2025) The stress experienced by students can come from various sources. In an academic context, stress can arise from work demands that exceed a student's capacity. (Sholihah et al., 2023) pressure to achieve or worry about learning outcomes (Subandi et al., 2025). In addition, family conditions such as lack of communication, economic problems, and parenting patterns can affect students' conditions. (Pinjungwati, 2025). And social pressure also contributes to the emergence of stress, such as fear of being judged negatively by peers, speaking in public or appearing in front of others and feeling ostracized. (Burg, 2025). If this condition continues without proper management, it can have an impact on reducing students' concentration in learning and mental health.

Therefore, the ability to manage stress is crucial for students. Stress management is the process of recognizing, controlling, and overcoming the pressures faced to prevent negative impacts. Lazarus and Folkman explain that stress coping is a cognitive effort to continuously change behavior to manage external demands. These efforts include minimizing, avoiding, tolerating, and accepting stressful conditions. (Lazarus & Folkman, 1984).

One effort to help students understand and manage stress is through classroom services. These services are designed for counselors to make direct contact with students to provide information to students in study groups while presenting topics. (Hermatasiyah, 2023). However, the lecture method still applies to classical services, which tends to make students passive, bored, sleepy, and less engaged in learning. Therefore, interactive, effective, and easy-to-understand methods are needed for students while also supporting stress management within classical services. One such method is the mind map method.

Mind map according to Tony Buzan in (Rohita and Fitria, 2020: 1968) says that:

“Mind map as a visual teaching methodology in the form of graphical charts. The main concept is connected to other concepts in the form of hierarchy to highlight relationships between concepts and ideas through curved colorful lines and connectives. Mind maps are considered as an effective tool in active learning strategies that enhance memory to retrieve information and generate new creative unfamiliar ideas. Mind maps are also used as a strategy to teach the educational concepts through lines which are called linking words to clarify the relationship between the concept and others in the form of a hierarchical sequential structure. The more general and inclusive concepts are placed at the top of the map, and more specific concepts at the base of the map.”(Rohita & Fitria, 2020)

Based on the description above, it can be explained that a mind map is a visual learning method in graphic form with a structured and hierarchical form connecting the main concept to other concepts. This mind map method is effective in improving memory and developing creative ideas, by placing general concepts at the top and more specific ones at the bottom or base of the map.

The mind map method has advantages and disadvantages. The advantages of the mind map method, according to Swadarma, are (Yunky Ardianny, 2023: 2013) namely: Flexible, can focus attention, increase understanding and allow the development of unlimited imagination and creativity (Ardianny, 2023).

Although the mind map method has advantages, it also has disadvantages. The disadvantages of the mind map method according to Swadarma in (Yunky Ardianny, 2023: 2013) The disadvantages of the mind map method are as follows: Only active students are involved, not all students learn, and students' mind maps vary so that teachers will be overwhelmed checking students' mind maps. (Ardianny, 2023).

Based on observations and interviews conducted at Tasdikiah School in Thailand, it was found that many teachers still use the lecture method, with a lack of available learning media. This directly impacts low student participation in learning, with over 25% of students appearing unfocused during the activity.

Based on these conditions, the research questions in this study are: How is student understanding before using the mind mapping method in the stress management class in grade 5 of Tasdikiah School in Thailand? How is student understanding after using the mind mapping method in the stress management class in grade 5 of Tasdikiah School in Thailand? Is the use of the mind mapping method effective in improving understanding of stress management in the class for grade 5 of Tasdikiah School in Thailand?

Previous research relevant to this study is Nurul Azura's study entitled "The Effectiveness of the Mind Mapping Method on Phase B Students' Understanding of Natural Resources Science Concepts." These results indicate a difference between pretest and posttest scores. The average score of students during the pretest was 41.1 and the posttest score was 88. 4. So it can be concluded that the mind mapping method is effective in improving students' understanding. (Azura, 2024).

Based on this background, the researcher intends to conduct an in-depth study on the effectiveness of mind maps in improving the understanding of stress management in grade 5 students of Tasdikiah Thailand.

RESEARCH METHODS

This research was conducted using a quantitative experimental approach with a Quasi-Experimental Nonequivalent Control Group Design. The sampling method used was incidental sampling, based on the conditions and situation at the time of the study. The sample size was 31 of 64 fifth-grade students. The fifth-grade students were divided into two groups: the experimental group in grade 5.1 and the control group in grade 5.3, without swapping the students. Data collection techniques included testing and observation. Data analysis used descriptive analysis, a normality test using Shapiro-Wilk, a homogeneity test using Levene, and a non-parametric Man-Whitney U test.

Based on the validity test, 13 items were valid and 2 were invalid. These items were then revised in terms of wording to make them clearer and easier for respondents to understand without changing the substance of the indicators being measured. The reliability test yielded a Cronbach's Alpha value of 0.815 for 15 multiple-choice items. These results indicate that this multiple-choice item is suitable for use.

RESEARCH RESULTS AND DISCUSSION

RESEARCH RESULTS

The data was obtained through multiple-choice questions of 31 respondents with the division of 1 experimental class 19 in class 5.1 and 1 control class 12 in class 5.3. This data description contains data *on the pretest* and *posttest* results in the experimental class and the control class. As well as descriptive analysis used to describe mean values, standard deviations, minimum and maximum values. Descriptive analysis data is presented in table1.

Table 1. Descriptive Analysis Results

Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. Deviation
pretesteksperimen	19	6	13	9,53	2,220
posttesteksperimen	19	10	14	11,89	1,696
pretestkontrol	12	1	10	5,83	2,406
posttestkontrol	12	2	12	6,92	2,937
Valid N (listwise)	12				

Based on the results of the descriptive analysis, the mean score in the pretest of the experimental class was 9.53, the minimum score was 6, the maximum was 13, and the standard deviation was 2,220. The posttest of the experimental class resulted in a mean of 11.89, a minimum score of 10, a maximum of 14, and a standard deviation of 1,696. The pretest of the control class resulted in a mean of 5.83, a minimum score of 1, a maximum score of 10, and a standard deviation of 2.406. The posttest of the control class resulted in a mean of 6.92, a minimum score of 2, a maximum score of 12, and a standard deviation of 2.937. In addition, there was an increase in both classes. In the experimental class, from 9.53 to 11.89, with a difference in increase of 2.36. While in

the control class, there was only an increase from 5.83 to 6.92 with a difference in increase of 1.09. Although both classes experienced improvement, the experimental class, which received the mind mapping method, saw a higher improvement in student understanding compared to the control class, which received the lecture method. Furthermore, to clarify the level of student understanding, the results were classified into low, medium, and high categories.

$$I = \frac{X_{\max} - X_{\min}}{\text{Number of Categories}}$$

Figure 1. Categories Formula

Description:

$X_{\max}$ = Maximum score.

$X_{\min}$ = Minimum score.

Number of Categories = Score Category

Table 2. Score Categorization

Interval	Category
11-15	High
6-10	Medium
0-5	Low

To determine the initial abilities of students in the experimental class before being given the mind mapping method, a pretest was conducted. The pretest results are presented to illustrate the students' initial level of understanding based on predetermined categorizations. The following are the categorizations and student pretest scores:

Table 3. Results of the Experimental Class Pretest Scores

No	Name	Value	Category	Class
1	ST	9	Medium	5.1
2	AL	9	Medium	5.1
3	NZ	11	High	5.1
4	NS	12	High	5.1
5	YW	12	High	5.1
6	AD	7	Medium	5.1
7	ND	12	High	5.1
8	AS	12	High	5.1
9	NW	12	Medium	5.1
10	RS	10	High	5.1
11	NN	13	Medium	5.1
12	NA	6	Medium	5.1
13	SR	7	Medium	5.1
14	SM	7	Medium	5.1
15	SB	10	Medium	5.1
16	HS	8	Medium	5.1
17	MJ	8	Medium	5.1
18	AM	7	Medium	5.1
19	CS	9	Medium	5.1

Based on the pretest results in table 4 which refer to the categorization in table 3, it shows that the highest score is 13 and the lowest score is 6. Most students are in the Medium category, namely 12 students, and high 7 students. The results show that students' initial understanding before being given treatment tends to be high and medium.

After presenting the results of the pretest in the After the experiment class, the results of the pretest in the control class are then presented. This data presentation aims to determine the level of initial understanding of students in the control class before being taught using the lecture method. The pretest results are presented based on predetermined categorizations. The following presents the categorizations and results of the students' pretest scores.

Table 4. Results of the Control Class Pretest Scores

No	Name	Value	Category	Class
1	MFW	5	Low	5.3
2	SM	10	Currently	5.3
3	KK	6	Currently	5.3
4	AL	7	Currently	5.3
5	SK	8	Currently	5.3
6	AH	8	Currently	5.3
7	AI	5	Low	5.3
8	MS	1	Low	5.3
9	NL	3	Low	5.3
10	AI	5	Low	5.3
11	FJ	7	Currently	5.3
12	AJ	5	Low	5.3

Based on the pretest results in Table 4, which refer to the categorization in Table 2, the highest score was 10 and the lowest was 1. The majority were in the medium category (6 students), and 6 students in the low category. The results indicate that students' understanding before receiving the service was in the low and medium categories.

Based on Tables 3 and 4, the pretest results for the experimental and control classes show different results. In the experimental class, the average score was 9.53, while in the control class, the average score was 5.83. This indicates a difference in students' initial understanding before receiving the treatment.

Table 5. Posttest Results of Experimental Class

No	Name	Value	Category	Class
1	ST	11	High	5.1
2	AL	11	High	5.1
3	NZ	14	High	5.1
4	NS	14	High	5.1
5	YW	14	High	5.1
6	AD	10	High	5.1
7	ND	14	Medium	5.1
8	AS	14	High	5.1
9	NW	13	High	5.1
10	RS	13	High	5.1
11	NN	13	High	5.1
12	NA	10	Medium	5.1
13	SR	10	Medium	5.1
14	SM	11	High	5.1
15	SB	13	High	5.1
16	HS	10	Medium	5.1
17	MJ	10	Medium	5.1
18	AM	10	Medium	5.1
19	CS	11	High	5.1

Based on the posttest results in Table 5, which refer to the categorization in Table 2, the highest score was 14 and the lowest was 10. The majority of students were in the high category, with 13 students and 6 students in the medium category. The results indicate that students' understanding levels after being treated using the mind mapping method tended to be high and medium.

After presenting the posttest results in the experimental class, the results of the posttest in the control class were presented. This data presentation aims to illustrate the level of understanding of students in the control class after being taught using the lecture method. Posttest results are presented based on the predetermined categorization. The following presents the categorization and results of the students' posttest scores.

Table 6. Posttest Results of Control Class

No	Name	Value	Category	Class
1	MFW	7	Medium	5.3
2	SM	4	Low	5.3
3	KK	3	Low	5.3
4	AL	9	Medium	5.3
5	SK	6	Medium	5.3
6	AH	10	Medium	5.3
7	AI	9	Medium	5.3
8	MS	6	Medium	5.3
9	NL	8	Medium	5.3
10	AI	7	Medium	5.3
11	FJ	12	High	5.3
12	AJ	2	Low	5.3

Based on the posttest results in Table 6, which refer to the categorization in Table 2, the highest score was 12 and the lowest was 2. Most students were in the moderate category: 8 students in the moderate category, 1 student in the high category, and 3 students in the low category. The results indicate that students' understanding levels after being treated using the lecture learning method tended to be moderate, although there were still students in the high and low categories.

Based on Tables 1.5 and 1.6, the posttest results for the experimental and control classes showed different results. In the experimental class, the average was 11.89, while in the control class, the average was 6.92. This means there was a significant difference in results between students treated using the mind mapping method and those in the control class using the lecture or conventional method.

Tabel 7. Result Of Data Normality Test

		Kolmogorov-Smirnov ^a			Shapiro-Wilk		
Kelas		Statistic	df	Sig.	Statistic	df	Sig.
Hasil	pretesteksperimen	,183	19	,093	,911	19	,077
	posttesteksperimen	,227	19	,011	,808	19	,002
	pretestkontrol	,198	12	,200 [*]	,962	12	,813
	posttestkontrol	,127	12	,200 [*]	,978	12	,976

Data normality testing was performed using the Shapiro-Wilk test because the sample size was less than 50. The decision-making criteria were based on the significance value (Sig). If the Sig. value is > 0.05 , the data are normally distributed, while if the Sig. value is < 0.05 , the data are not normally distributed.

Based on the results of the normality test, it can be concluded that the experimental pretest (0.077), the control pretest (0.831), and the control posttest (0.976) are normally distributed. However, the experimental posttest (0.002) is not normally distributed. Because the data are not normally distributed, a non-parametric test was used to test the hypothesis.

Tabel 8. Result Homogeneity Test

		Test of Homogeneity of Variance			
		Levene Statistic	df1	df2	Sig.
Hasil	Based on Mean	,870	3	58	,462
	Based on Median	,710	3	58	,550
	Based on Median and with adjusted df	,710	3	50,715	,551
	Based on trimmed mean	,875	3	58	,459

Based on the results obtained in the table above, it can be seen that the Sig. Based on Mean value is 0.462. This value is greater than 0.05. Therefore, it can be concluded that the data in the experimental group and the control group are homogeneity.

Tabel 9. Result Man-whitney u Test

Test Statistics ^a	
	Hasil
Mann-Whitney U	13,000
Wilcoxon W	91,000
Z	-4,138
Asymp. Sig. (2-tailed)	,000
Exact Sig. [2*(1-tailed Sig.)]	,000 ^b

The hypothesis test of this study uses the Man-Whitney U test with the decision-making criteria if the sig. value <0.05 then there is a significant difference and if the sig. value >0.05 then there is no significant difference. Based on the hypothesis test above, it can be concluded that the significance value is $0.000 < 0.05$, so it can be concluded that the treatment given to the experimental class is effective in improving student understanding, because there is a significant difference between the experimental class and the control class.

Discussion

This study aimed to examine the effectiveness of the mind mapping method on student comprehension in an experimental class. To achieve this goal, student comprehension was measured before and after the treatment.

Before the treatment, students in the experimental and control classes were given a pretest to determine their initial comprehension. The results showed that the experimental class achieved an average pretest score of 9.53 and the control class 5.83. This indicates that students in the experimental class had better initial comprehension than those in the control class before the treatment. This difference in comprehension indicates that students' abilities were not equal before the treatment. Therefore, this analysis focused on the results after the treatment, or posttest.

After the treatment, the analysis showed that the average posttest score remained higher for the experimental class, at 11.89, compared to 6.92 for the control class. This indicates an increase in student comprehension in the experimental class after the treatment. Furthermore, this increase compared to the control class was significant, with the control class increasing by 1.09 and the experimental class increasing by 2.36.

To further determine whether there were significant differences between the experimental and control classes, the researchers conducted a non-parametric test using the Mann-Whitney U test. A 2-tailed sig. value is less than <0.05 , indicating a significant difference. Conversely, a 2-tailed sig. value greater than 0.05 indicates no significant difference.

After conducting the non-parametric test using the Mann-Whitney U test, the sig. value (2-tailed) was 0.000. These data indicate a significant difference. Therefore, the hypothesis (H_a) is accepted. This means there is a significant difference between the understanding of students who received the mind mapping method and those taught using the lecture method.

A study by Awaludin Lambause and Sri Bintang entitled "The Effectiveness of Classical Services Using Mind Mapping to Improve Learning Concentration in Eighth Grade Students at SMP Negeri 2 Tinangkung" demonstrated that the use of the mind mapping method is highly effective in improving the quality of student learning. This was demonstrated through a two-cycle Classroom Action Research (CAR) design. The results showed a significant increase in learning concentration, from 51% in the pre-test to 80% at the end of Cycle II.

In addition to obtaining research findings supporting the effectiveness of the mind mapping method, it also has advantages and disadvantages. The advantage of this study is the use of experimental and control classes, allowing for clearer comparisons of results. In addition to obtaining research findings supporting the effectiveness of the mind mapping method, it also has advantages and disadvantages. The advantage of this study is the use of experimental and control classes, allowing for clearer comparisons of results. Furthermore, the use of pretests and posttests helped researchers identify any changes in student understanding, both before and after the treatment.

The disadvantages of this study include the small number of students and the relatively short duration of the study, which meant that the mind mapping method was implemented within a limited timeframe within the lesson.

CONCLUSIONS

Based on research conducted by researchers, students' understanding before the mind map method was applied was in the Medium and High categories, namely 12 students in the medium category and 7 students in the high category, with an average of 9.53. This can be seen from the pretest results which showed that most students did not understand the stress management material. In addition, the lecture method makes students tend to be passive and less actively involved in the learning process. After being given the service, student understanding showed an increase in both classes. In the experimental class using the mind map method, there was a significant increase. This was shown in the posttest results in the experimental class with an average of 11.89 which previously averaged 9.53, an increase of 2.36. Meanwhile, in the control class, it increased from 5.83 to 6.92, an increase of 1.09. Although both classes experienced an increase, the increase in the experimental class was high compared to the control class. This shows that this mind map method helps students be more active and understand more easily when the learning process is taking place. Based on this increase, the effectiveness of the mind map method is also strengthened by the results of statistical tests using Mann-Whitney u, obtained a sig. value. (2-tailed) of 0.000 is smaller than 0.05. The data shows a significant value. Therefore, hypothesis (Ha) is accepted and (H0) is rejected.

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