

## METACOGNITIVE LEARNING STRATEGIES IN ARGUMENTATIVE WRITING SKILLS

**Erwin Oktoma**

*Language Education Study Program, State University of Jakarta*  
Email: [erwinoktoma\\_7317157768@mhs.unj.ac.id](mailto:erwinoktoma_7317157768@mhs.unj.ac.id)

**Zainal Rafli**

*Language Education Study Program, State University of Jakarta*  
Email: [zainal.rafli@unj.ac.id](mailto:zainal.rafli@unj.ac.id)

**Aceng Rahmat**

*Language Education Study Program, State University of Jakarta*  
Email: [aceng.rahmat@unj.ac.id](mailto:aceng.rahmat@unj.ac.id)

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**Abstract:** This study aims to determine the effect of metacognitive learning strategies on students' argumentative writing skills. This research was conducted on third semester students of the English education study program, Faculty of Teacher Training and Education, Universitas Kuningan. A quantitative approach was chosen with an experimental data collection technique tests as a used method, namely: (1) Test of argumentative writing skills. This study examines the effect of metacognitive learning strategies on students' argumentative writing skills. The learning strategies used are metacognitive learning strategies (experimental class) and control class concept map learning strategies. The findings indicate that metacognitive learning strategies are effective in teaching students' argumentative writing in English. Regarding the results of this study, the application of different learning strategies is needed in students' argumentative writing learning. Based on the results and conclusions above, it turns out that metacognitive learning strategies have a significant effect on students' argumentative writing skills in English. Thus, this research provides a beneficial implication in planning and developing learning strategies which will be used in improving students' argumentative writing skills in English, especially with regard to the application of appropriate learning strategies. The argumentative writing skills of students who were given metacognitive learning strategies were better than those who were given concept map learning strategies instead. In this case, the role of the lecturer is very important so that to improve students' argumentative writing skills, metacognitive strategies are more effectively applied in class.

**Keywords:** *metacognitive learning strategies; thinking ability; argumentative writing*

### INTRODUCTION

Writing is seen as a means of a written communicating messages or information between the writer and the reader. In addition, writing is also a diction practice to convey the message in a more comprehensible manner for readers. Writing means producing a series of sentences which are arranged in an orderly manner and are interrelated in a certain way so that a series of arranged sentences becomes a text; which is not an easy and spontaneous activity. The implementation of learning to write according to Wage and Dantes (2015), needs to pay attention to the following matters: (1) writing is a process of two parties namely students as writers and teachers as readers and guides, (2) the experience must depart from the students themselves, so that ideas can be developed easily, (3) writing can be improved if the exercises run continuously, (4) the meaning

and expression of the mind is prioritized rather than the stylized and composed of the writing.

In a writing, someone often needs arguments to express their ideas. One of the texts which requires arguments is argumentative text. In argumentative writing, which contains the author's opinion in order to influence others, must have a strong foundation in describing the facts. McCrimmon (1984) writes that persuasion or argumentation is verbal a communication which seeks to make changes in making decisions voluntarily so that audience accept a new belief which was not previously believed. The form of verbal communication used is through written communication to convince the reader to switch their stance voluntarily in making decisions in accordance with the expectations of the author. This opinion is supported by Mcdonald (1996) who uses the term rhetoric or rhetoric as another

term for argumentative, which is the use of persuasive language to influence readers or listeners. In other words, argumentative writing is the use of persuasive language or an invitation to influence the reader to make a change in thinking. These changes may be as simple as passing on one's beliefs to others or further influencing actions such as getting to choose person A over person B, asking to quit smoking, or to buy a product. Argumentative writing is very important for students to master considering that this type of writing is widely used in various aspects of life, for example: in writing scientific papers, religious lectures, advertorials, for appeals, to campaign for someone or a program, and others.

The writer must also be able to criticize something wisely and acceptable to reader's thoughts. In other words, the opinion expressed by the author must be reasonable and genuine. Argumentative writing is not only concerned with clarity but requires conviction by means of existing facts, indirectly, through the writer's conviction, it can influence the author in uttering logical statements and the writer will be able to account for his writing properly. Alwasilah (2008) explains that there are several components of an argument, as follows: The first component is an introduction or an exordium (exhortation) to the audience. Introduction acts to attract the reader's interest or attention, and introduce the subject of discussion. Second is thesis, a thesis is a statement regarding the position (attitude) towards an issue. The reader is led by the author to agree with the thesis or proposition (pro-position, i.e. side with a position) the evidence presented must support a thesis. Third, conclusion, the conclusion means nothing but to strengthen the thesis previously described.

In learning to write arguments for the use of learning strategies, basically, it is a suitable way of doing assignments or more generally in achieving goals (Kirby, 1984). Meanwhile, according to Sanjaya (2006), to be able to achieve the results of learning to write English which is the goal of learning to write English, a strategy is needed which is in accordance with the nature of the writing lesson itself. According to Sanjaya, the learning strategy is a way used by the teacher to achieve learning objectives which depend on the approach or method used.

Metacognition or metacognitive is a term coined by Flavel and Miller (1993) in 1976 starting from its limitations as a study of the psychology of cognition, since the 1970s metacognition has attracted the attention of

scientists from other fields to also study it. Now, besides being a study in the field of cognitive psychology, metacognition has become a study in the fields of language, mental disorders, mathematics and education. This development seems to be supported by a belief that metacognition as part of cognition is likely to experience changes in terms of capacities, strategies and forms of knowledge. Research in the development of metacognition began in the 1970s Brown, John Flavell, and their colleagues. In the beginning, metacognition was broadly defined as knowledge or cognitive activity which makes cognitive activity its cognitive object, or which regulates cognitive activity itself (Schneider, 2008). Larkin (2010) says that "metacognition" comes from "meta" and "cognition". From his understanding, "meta" refers to a change in position, a thing which is moving outward or towards a higher level while "Cognition" refers to our ability or ability to know or think. Thus, "metacognition" describes a higher thought process, something which is reflective and constantly moves beyond the normal level of thinking in reflecting on the thinking itself. Besides that Metacognition is our knowledge of cognitive processes and how to use them optimally to achieve learning goals (Pitenoe & Ardestani, 2017). To illustrate this concept Panahandeh and Espandiari (2014) describe a study in which preschool and elementary children learn a set of items until they feel they can remember them perfectly. Older children, once they have indicated they are ready, exhibit "perfect memories," whereas younger children usually do not. These results suggest that preschoolers are very limited in their knowledge and cognition of cognitive phenomena or in their metacognitive behaviour.

It is clear that this definition refers to people's knowledge of information processing skills and knowledge of the nature of cognitive tasks, and of coping strategies for those tasks. This concept also includes executive skills related to monitoring and self-regulating their own cognitive activities.

Flavel in Priscilla & Ruan (2008) suggests three aspects of metacognition, namely metacognition knowledge, metacognition experience, and metacognition skills which are a strategy in controlling cognition. Metacognitive knowledge is characterized by combinations of information around three self-knowledge variables. Tasks and strategies which will be effective in achieving the objectives of the tasks

to be assigned. Metacognitive experiences are metacognitive items which have entered the realm of consciousness, and can include evaluations where someone completes a task, or perhaps a sense of confusion where someone may or may not act.

Metacognitive knowledge is differentiated from metacognitive activity. Metacognitive knowledge involves monitoring and reflecting on one's thoughts in the present moment. This includes factual knowledge, such as knowledge of tasks, goals or self and strategic knowledge, such as how and when to use specific procedures to solve problems. Metacognition activity, on the other hand, occurs in students consciously adjusting and managing their thinking strategies when solving problems in thinking about a goal (Santrock, 2004).

Baird in Cubucku (2008) defines metacognition as knowledge, awareness, and self-control. Thus, the development of metacognition can be described as a development of one's metacognitive abilities, namely leading to greater knowledge, awareness and control of one's learning. Larkin (2010) says that "metacognition" comes from "Meta" and "Cognition." According to him, "Meta" refers to a change in position, something which is moving outward or towards a higher layer. "Cognition" refers to our ability or ability to know or think. Thus "Metacognition" describes a higher thought process, something which is reflective and continues to move beyond the normal level of thinking in reflecting on the thinking itself.

Cazden defined metalinguistic consciousness like the metamemory definition Flavell uses. Both use the word meta which refers to reflective awareness of cognitive processes, while Butterfield, Wambold and Belmont place an important emphasis on the control of a cognitive process called the executive process. This process has actually become part of the definition of metacognition given. Flavell and Bown. Cavanaugh and Perlmutter argue that the content of memory knowledge is called metamemory. Baker and Anderson in Lawson more generally state that metacognition is knowledge and control of cognitive processes it has (Lawson, 1984). Therefore, people who have metacognition strategies are those who have knowledge and control of thinking and learning activities. According to Hacker (2017), a person's ability to control various cognitive activities is carried out through action and interaction between four phenomena: (1) Metacognition Knowledge; (2)

Experience of Metacognition; refers to what a person believes about his own state of mind, for example the belief which he is intelligent, knowledgeable, understands faster by hearing than by reading, has begun to forget often, is slow to think, and so on. (3) Objectives (Tasks); with regard to a person's knowledge of the nature of a particular task, for example the awareness that this job is more difficult than previous jobs, such work demands a lot of time, and this concept is not well mastered, and so on, and (4) action (strategy), relating to someone's knowledge of ways to carry out an activity, for example, this way is more appropriate than others for purposes and contexts like this, the best way to memorize a lot of material is to focus on the main idea, associate with things already known, and repeated it in his own language many times. Furthermore, he said metacognition consists of metacognitive knowledge and metacognitive experience and regulation.

Thus, it can be stated that metacognition is (1) the process of monitoring and directing one's own thoughts so that something is achieved more optimally, (2) a person's knowledge of his own state or thought process, and (3) a person's ability to monitor and direct his own thoughts to achieve something expected.

#### *Models and theory of metacognition*

On the other hand, researchers such as Pintrich, Wolters and Bexters in Cubucku (2008) argue that there are three main components of metacognition, namely metacognition knowledge, metacognition monitoring and regulation and self-control. First, metacognitive knowledge consists of cognitive learning strategies which learners use to regulate the knowledge acquisition process. This includes elaboration strategies such as building relationships with pre-existing knowledge, or memory strategies such as note-taking. Both metacognition monitoring consist of metacognition control strategies. What is important here are activities such as planning and monitoring learning activities, evaluating the impact of learning and adjusting to various task demands, and (unexpected) difficulties. Metacognitive strategies involve thinking about the learning process, planning learning, monitoring and learning assignments and how to evaluate what has been learned (Panahandeha & Esfandiari, 2014).

Besides the two models above, the third group of strategies is aimed at management, resources and self-management. These strategies are

concerned with controlling the general conditions associated with learning, such as time management and learning environment management. The model proposed by Pintrich in Cubucku (2008, p.2) states that "students develop perceptions of task demands, seen in metacognition monitoring, selecting and executing metacognition strategies which are appropriate for task demands, and evaluating performance tasks which illustrate the effectiveness of cognitive strategies." Another cognitive model proposed by Winne and Hadwin has four basic stages, task definition, goal setting and planning, creation, and adjustment. This model states that students generate a perception of what is the task and the availability of resources, a plan shows the task, plays learning strategies, and makes changes to their cognitive structure based on performance perceptions. Pintrich synthesized various expert opinions into a general framework which includes (a) initial thinking, planning and activation, (b) monitoring, (c) control, and (d) reaction and reflection.

Schneider (2008) elaborated on the theoretical model proposed by Flavell, which they called the Good Information processing model. According to this model, sophisticated metacognition is closely related to the use of learner strategies, motivational orientation, general knowledge of the world, and the use of efficient automated learning procedures. All of these components are assumed to interact. For example, knowledge of specific strategies influences the application of adequate metacognitive strategies, which in turn influences knowledge. As these strategies are implemented, they are monitored and evaluated, leading to expansion and improvement of specific strategy knowledge.

More recently conceptualization has added to its component self-regulating skills. Originally, the concept of metacognition was developed in the context of development research, but is now widely used in different fields of psychology, including motivational research and clinical psychology and education. Recent developments have also included cognitive neuroscience models of metacognition, the popularity of which is because metacognition is essential for everyday conceptual offerings and for those who value scientific thinking, as well as for social interactions. A recent research paradigm which is quite influential which aims to understand metacognitive processes within its developmental dimension, tries to link the 'Minda Theory' (TM) of children with their continuous metacognition

development (Schneider, 2008). Metacognitive experiences involve metacognition strategies or metacognition regulation. Metacognitive strategy is a sequential process used to control cognitive activity and ensure that cognitive goals have been achieved (Schneider, 2008).

This process consists of planning and monitoring cognitive activities and evaluating the results of these activities. Planning activities such as setting goals and analyzing assignments help activate relevant knowledge to make it easier to organize and understand lesson material. Monitoring activation includes a person's attention when he is reading, and making questions or self-examination. This activity helps students understand the material and integrate it with initial knowledge. Regulatory activities include adjustment and improvement of students' cognitive activities. This activity helps increase performance by monitoring and correcting his behavior when he completes assignments. For example, after reading a paragraph in a text, students ask themselves about the concepts discussed in that paragraph. The cognitive goal is to make sense of the text. Asking oneself is a metacognitive strategy. If he finds that he cannot answer his own questions, or that he cannot understand the material under discussion, he then determines what needs to do to ensure that he achieves that cognitive goal. He may decide to repeat or reread the paragraph in order to be able to answer his own question.

In the information-processing model, this experience or metacognition management is called executive process or executive control. Executive control involves a process of metacognition. This process activates and directs the flow of information during learning. This strategy directs students' choices towards the cognitive strategies they use to determine what to do during the problem-solving process. What it does depends on the expectations or goals and on the strategies used to achieve the goals. For example, a student studying for a test will use a different strategy if he or she is preparing to teach a skill. According to Klowe in Hacker (2017), the process of monitoring selection and application as well as the influence of the process and regulation of problem-solving activities constitutes metacognitive procedural knowledge. The executive process involves both monitoring and regulating thought processes, because it is related to Flavell's metacognition strategy and metacognition skills. The executive monitoring

process is a process which is directed at obtaining information about a person's thought processes.

This process involves Helping Someone's Decision (1) identifying the task, (2) monitoring the progress of the work, (3) evaluating this progress, and (4) predicting the obtained outcome. The executive management process is a process which is directed at the process of organizing one's thinking. This process helps (1) allocate available resources to do tasks, (2) determine the steps for completing the task, and (3) determine the intensity, or (4) the speed in completing the task. Livingstone (2002) analogizes this difference with differences in theory and practice. Knowledge is relatively consistent within a person while unstable settings, independent of age, can change depending on the situation. You exhibit self-regulatory behavior just in certain situations, and the child exhibits self-regulatory behavior which adults do not. Anxiety, fears and interests and self-concepts such as self-esteem can influence regulations. The regulatory process tends to be more unconscious. The ability to bring automated skills to consciousness is a characteristic of high metacognition and intelligence. By developing self-awareness, means developing intelligence.

Halter (2017) classifies metacognition strategy indicators into three groups. First, awareness includes the awareness of identifying what is already known, determining learning objectives, considering learning aids, considering the form of tasks, determining how to evaluate how to evaluate learning achievement, considering the level of motivation, and determining the level of anxiety. Second, planning, includes activities to estimate the time needed to complete a task, planning study time into a schedule, making checklists about the activities which need to be done, organizing the material and taking the steps needed to learn using cognitive strategies. Third, monitoring and reflection, includes activities to supervise the learning process, monitor learning with own questions, provide feedback and maintain concentration and motivation.

In more detail, the indicators for metacognition strategies are classified as follows. (1) self-planning, has indicators of learning objectives, relevant initial knowledge, and cognitive strategies to be used. (2) self-monitoring, has indicators on monitoring the achievement of learning objectives, monitoring time used, monitoring hypotheses of initial knowledge material with new subject matter, and monitoring cognitive strategies used. (3) self-evaluation, has

indicators of evaluation of the achievement of learning objectives, evaluation of the time used, evaluation of the relevance of initial knowledge with new subject matter, and evaluation of cognitive strategies which have been used.

Oxpord (1990) classifies learning strategies into two major groups, namely direct strategies and indirect strategies. Direct strategies can also be divided into three groups of strategies, namely memory strategies, cognitive strategies, and compensation strategies. Furthermore, indirect strategies are divided into three groups of strategies, namely metacognitive strategies, affective strategies, and social strategies.

Metacognition strategy is one group of strategies which are classified into indirect strategies. It is said that the strategy is indirect because these strategies support and regulate the learning process, which indirectly involves the language being learned. Metacognition strategies allow learners to control their own cognition, namely coordinating learning processes using functions such as centering, arranging, planning and evaluating (Oxpord, (1990). Metacognition also includes three sets of strategies, (a) centering your learning, (b) arranging and planning your learning and (c) evaluating your learning. It also consists of several more concrete strategies or the strategies obtained are disclosed in detail. The following table describes the strategies contained in each strategy set (Oxpord, 1990).

Another metacognition strategy model is a model developed by Anna et al. (1999). They develop a metacognition model for strategic learning. This model is based on extensive studies of learning strategies whose data relates to the effective use of strategies in a second or foreign language. Learning strategies are selected for inclusion in the model based on their usefulness and applicability in a wide variety of learning tasks thus learners can use these strategies in the four language skills, such as listening, speaking, reading, and writing. The model developed by Anna et al consists of four metacognition processes, namely planning, monitoring, problem solving and evaluation. The four metacognition strategies are not necessarily sequential but can be used as needed, depending on the needs of the task and the interactions between tasks. The image below illustrates the relationship between the four metacognition processes proposed by Anna et al (1999).

Producing a good argumentative writing is not easy since a writer requires a complex process and needs continuous practice so that the writer

will be trained in expanding the idea systematically and logically. From the results of observations, the main problem in this study was that the students of the English Language Education Study Program, FKIP, Universitas Kuningan were less able to develop argumentative writing seen from the results of the argumentative writing skills test at the time of taking the initial research data. This problem arises since; first, it is difficult for lecturers to determine the right learning strategy in the learning process of argumentative writing skills, as a result, the learning process is not well organized. Second, the learning process does not lead to the achievement of the final goal, which is, students are less able to produce written products (argumentative). Third, the learning process in argumentative writing skills seems to prioritize cognitive aspects only. Fourth, student responses in learning argumentative writing skills are very low since the first place they already think that learning to write is very difficult so that students are unmotivated and less active when the learning process takes place.

Based on this description, it can be concluded that the development of argumentative writing can be carried out and improved through learning strategies including metacognition strategies because students must plan, then monitor and control their thoughts and can express and group ideas to be written logically and hierarchically. The problems studied in this study relate to argumentative writing skills in English (variable Y) and learning strategies using metacognition learning strategies as experimental variables, (variable X<sub>1</sub>).

## **METHOD**

This study aims to determine empirically the effect of metacognition strategies on students' argumentative writing skills. This research was conducted at the Faculty of Teacher Training and Education, Universitas Kuningan, English Education Study Program semester III, The research lasted for 3 months, namely from February to April 2018-2019 academic year. The method used in this research is experimental research. In this research design, the sample is divided into two groups, namely the experimental group and the control group. The first group is an experimental group consisting of students who are treated with metacognition learning strategies. The second group is a control group consisting of students who are treated with argumentative

writing skills using concept map learning strategies.

In this design, the total sample size is 52 people, consisting of 26 people as the experimental group (learning with metacognition strategies) and 26 people as the control group (learning with the concept map strategy).

There are two kinds of instruments used for data collection in this study, namely: (1) Test of argumentative writing skills. In order to measure the research variables quantitatively, the research variables of argumentative writing skills are defined as follows. a) Conceptual Definition, Argumentative writing skills. In this study is the ability to carry out verbal communication as a process of developing and communicating ideas, experiences, and ideas effectively which involves transferring them into written language so that readers voluntarily accept a new belief which is not believed beforehand that writing must be supported by various definitions. Examples of category classifications and applying the law of causality by following the rules of good argumentative writing including problem explanations, thesis statements, rebuttals to opposing arguments, composing their own arguments, and skills to compose words or sentences which become a text. The expected result is that the arguments are well structured, comprehensible with an excellent diction, structure sentences with good grammatical and structure using spelling, punctuation, and capital letters correctly. b) Operational definition, operationally argumentative writing skills are the scores of the results of students' argumentative writing skills tests by following the rules of argumentative writing with criteria for content, organization, vocabulary, language use and mechanics.

## **RESULTS AND DISCUSSION**

The description of the research data is intended to see in general the depiction of the argumentative writing skills of students who are the subjects of the study. The students' argumentative writing skills are divided into three groups based on learning strategies (metacognition strategy and concept map strategy): 1) argumentative writing skills of students who learn with metacognitive learning strategies (A<sub>1</sub>). 2) argumentative writing skills of students who learn the concept map learning strategy (A<sub>2</sub>). Students' argumentative writing skills are given Metacognitive Learning Strategies (A<sub>1</sub>). The data on students' argumentative writing skills for the group

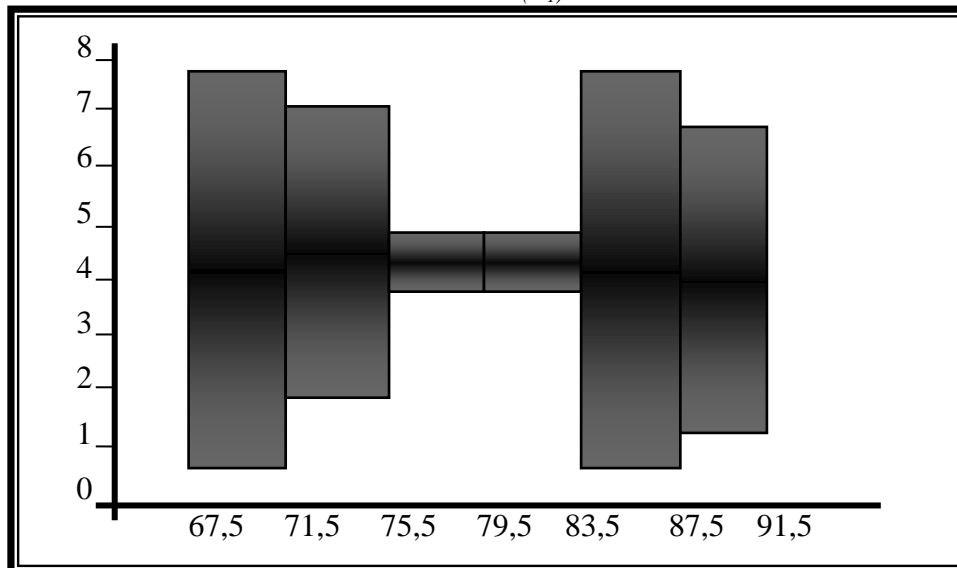
learning with metacognitive strategies, obtained a maximum score of 91, a minimum score of 68, an average score of 79.15 standard deviation of 8.37. From the maximum and minimum scores, the score ranges from 23 class intervals and the number of classes 6.

With these data, the frequency distribution table of students' argumentative writing skills for students learning with metacognitive learning strategies is as in the table below.

Table 1. Frequency distribution of scores for argumentative writing skills for students who learn with metacognitive strategies ( $A_1$ )

No.	Score	Absolute Frequency	Cumulative Frequency	Relative Frequency (%)
1	68 – 71	7	7	26.9
2	72 – 75	5	12	19.2
3	76 – 79	1	13	3.8
4	80 – 83	1	14	3.8
5	84 – 87	7	21	26.9
6	88 – 91	5	26	19.2
<b>Total</b>		26		100

Figure 1. The histogram of argumentative writing skills scores for students who learn metacognitive strategies ( $A_1$ )



Argumentative Writing Skills for Students Who Learn with Concept Map Strategies ( $A_2$ ) Data on the argumentative writing skills of students learning with concept map strategies, obtained a maximum score of 88, a minimum score of 68, an average count of 77.46 standard deviation of 6.56 and a variance of 42.98. From

the maximum and minimum scores, the score range is 20, the class 4 interval and the number of classes 6.

Based on the data above, a frequency distribution table for students' Argumentative Writing Skills is made for those who provide concept map strategies, as in the table below.

Table 2. Frequency distribution of argumentative writing skills scores of students who learn with the concept map strategy (A<sub>2</sub>)

No.	Score	Absolute Frequency	Cumulative Frequency	Relative Frequency (%)
1	68 – 71	7	7	26.9
2	72 – 75	5	12	19.2
3	76 – 79	1	13	3.8
4	80 – 83	1	14	3.8
5	84 – 87	7	21	26.9
6	88 – 91	5	26	19.2
<b>Total</b>		26		100

Figure 2. The histogram for the score of argumentative writing skills for students who learn with the concept map strategy (A<sub>2</sub>)

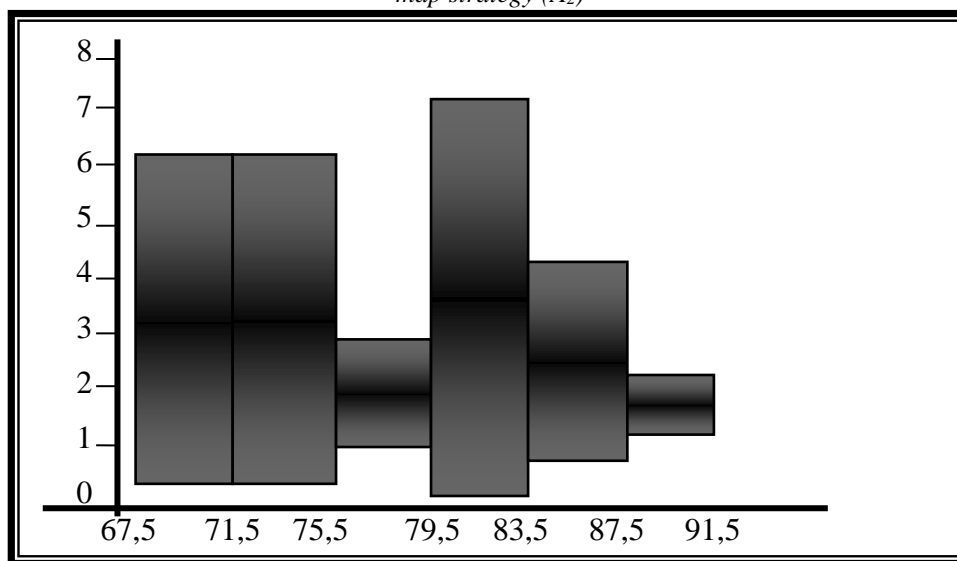


Table 3. Summary of scores for argumentative writing skills in English of all data groups in this study.

Data Group	Statistics				
	N Sample	Lowest Score	Highest Score	Mean	Standard Deviation
Metacognitive Strategy (A <sub>1</sub> )	26	68	91	79.15	8.37
Concept Map Strategy (A <sub>2</sub> )	26	68	88	77.46	6.56

A two-way analysis of variance (ANOVA) and homogeneous. Therefore, before testing the hypothesis, it is necessary to test the normality and homogeneity requirements. Analysis is allowed if the student's argumentative writing skills data comes from a population which is normally distributed

Table 4. Results of the summary of normality test for argumentative writing skills

Sample Group	N	L <sub>o</sub>	L <sub>1</sub> (α = 0.05)	Summary
1. A <sub>1</sub>	26	0.152	0.174	Normal
2. A <sub>2</sub>	26	0.173	0.174	Normal

In this study the variant homogeneity test was carried out on: (1) two groups, students with concept map strategies (A<sub>2</sub>), 'argumentative writing skills in the group learning with metacognitive strategies (A<sub>1</sub>) and students'



### *Test of variants of two treatment groups ( $A_1$ and $A_2$ )*

The homogeneity test of the variance of the two treatment groups in this study was carried out by calculating the  $F_{ratio}$  between the largest variance and the smallest variance of the two groups being tested. The calculation is by dividing the largest variance with the smallest variance of the tested group (Sudjana, p.1989), then compared with the  $F_{table}$  value at the significant level  $\alpha = 0.01$  and the degrees of freedom respectively = 25

Based on the calculation results obtained  $F_{calculation} = 1.75$ , while  $F_{0.001(25, 25)} = 2.26$ . When compared, then  $F_{calculation}$  is smaller than  $F_{table}$  or  $1.75 < 2.26$ . This means that  $H_0$  is accepted. Thus, two groups, namely the argumentative writing skills of students learning with metacognitive strategies ( $A_1$ ), and the other group, namely the argumentative writing skills of students learning with the concept map strategy ( $A_2$ ), were homogeneous. This means that between groups of students learning with metacognitive strategies and groups of students learning with concept map strategies are treated the same. Based on the results of the two-way analysis of variance (ANOVA), it can be explained: a). The results of the analysis of the two-way variance between columns show:  $F_{calculation}(A) = 5.22$  is greater than  $F_{table} = 4.04$  at the significance level  $\alpha = 0.05$ . It shows that  $H_0$  is rejected and accepts  $H_1$ . This proves that there is a significant difference in argumentative writing skills between students who learn with metacognitive learning strategies and students who learn with concept map learning strategies. Statistical hypothesis:  $H_0: \mu A_1 \leq \mu A_2$ ,  $H_1: \mu A_1 > \mu A_2$ .

The results of the two-way analysis of variance between the columns show that the value of  $F_{calculation} = 5.22$  is greater than  $F_{table} = 4.04$  at the significance level  $\alpha = 0.05$ . This means that  $H_0$  is rejected and accepts  $H_1$ . After testing the significant difference, the next step is to see which is better student's argumentative writing skills between the two treatments. Based on the results of the calculation, it turns out that the average score of argumentative writing skills of students who learn with metacognitive learning strategies ( $A_1$ ) is 79.15 better than the argumentative writing skills of students who learn with concept map learning strategies ( $A_2$ ) the average score is 77.46. Thus, the argumentative writing skills of students with metacognitive strategies are better than those with concept map strategies.

The discussion of the results of the study was carried out based on the data descriptions of students' argumentative writing skills and the results of hypothesis testing as previously described. In this study, there were differences found in students' argumentative writing skills between students who studied with metacognitive learning strategies and groups of students who studied with concept map learning strategies. This is evidenced by the two-way Anova test obtained  $F_{calculation} = 5.221 > F_{table} = 4.04$  which was tested significantly at  $\alpha = 0.05$

This is because metacognitive learning strategies can help students in writing in a well-structured and focused manner. During the writing process, students generally find it difficult to organize their ideas, which resulted in irregular essays. Metacognitive strategies are especially helpful in overcoming these difficulties, namely in finding ideas and developing these ideas into argumentative writing, by looking at the overall picture of the argument and assessing objectively whether the arguments and structure of the essay make sense. Metacognition strategies not only help plan what to write, but are also useful when writing it in a whole. To check whether the writing is still in the correct writing flow, the essay can be reconfirmed with metacognitive.

In contrast to the concept map strategy, this strategy explores and utilizes a variety of one's past experiences as the main idea and a very diverse source of written information to be transcribed into written form. Of the many life experiences, topics can be selected based on information from events which have been experienced by themselves or others.

### **CONCLUSION**

This study examines the effect of metacognitive learning strategies on students' argumentative writing skills in semester III students of the English Language Education Study Program, Faculty of Teacher Training and Education, Universitas Kuningan. Metacognitive learning strategies and concept map learning strategies were used as the learning strategies. Based on the results of hypothesis testing described in the previous chapter, the following conclusions can be drawn. Argumentative writing skills, students who are given metacognition learning strategies are better than students who learn with concept map learning strategies.

Based on the conclusions, students' argumentative writing skills in English can improve if they learn using metacognitive

learning strategies. These findings indicate that metacognitive learning strategies are effective in teaching students' argumentative writing in English. Regarding the results of this study, the application of different learning strategies is needed in students' argumentative writing learning.

Based on the findings of the research results and the discussion of the conclusions above, it turns out that metacognitive learning strategies have a significant effect on students' argumentative writing skills in English. Thus, this research has implications, especially in planning and developing learning strategies that will be used in improving students' argumentative writing skills in English.

The finding that the argumentative writing skills of students who were given metacognitive learning strategies were better than students who were given concept map learning strategies had implications, especially with regard to the application of appropriate learning strategies. In this case, the role of the lecturer is very important so that to improve students' argumentative writing skills, metacognitive strategies are expected to be more effectively applied in class.

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