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The Effect on the Integrated Chunking Techniques Combined with Writing is Thinking on Students Thinking Levels in the Topic of the Human Circulatory

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Abstract

The purpose of this study was to determine the differences in the thinking levels of students learning about the circulatory system taught using the chunking technique combined with writing is thinking, the chunking technique, and the lecture technique in grade XI students at SMA Negeri 20 Gowa in the 2024/2025 academic year. This study was an experiment using purposive sampling with specific considerations. The research population consists of 300 individuals, with 90 samples divided into 6 learning groups. Data collection was conducted using a test instrument consisting of two types of questions: multiple-choice and essay-style, to assess students' thinking levels. Hypothesis testing was performed using an ANOVA test, as the data were normally distributed and homogeneous. The results of the hypothesis testing indicated that the significance level was <0.000. This indicates that the sig value is < α (0.05), so it can be concluded that H0 is rejected and H1 is accepted. This means that there is a difference in the level of thinking of students taught using the chunking technique combined with writing is thinking (experimental class), the chunking technique (positive control class), and the lecture technique (negative control class) in students learning about the human circulatory system. Since there is a difference, an LSD (Least Significant Difference) test was conducted, showing that the level of thinking among students taught using the chunking technique combined with writing was thinking was the highest, followed by the chunking technique and the lecture technique.

Keywords: *Chunking Technique; Writing is Thinking, Level of Thinking, Circulatory System*

Abstrak

The purpose of this study was to determine the differences in students' thinking levels on the circulatory system material taught using the *chunking technique* combined *with writing is thinking* , chunking techniques and lecture techniques in grade XI students of SMA Negeri 20 Gowa in the 2024/2025 academic year. This type of research includes experiments with a sampling technique in the form of a purposive sampling technique with certain considerations. The population of this study amounted to 300 people consisting of 90 samples with 6 study groups. Data acquisition used a test instrument consisting of two types, namely multiple choice and essay to see the level of thinking of students. Hypothesis testing used the anacova test because the data was normally distributed and homogeneous. The results of the hypothesis test showed that the significance value was <0.000. This indicates a sig value <α (0.05), so it can be concluded that H0 $_{is}$ rejected and H1 $_{is}$ accepted. This means that there is a difference in the thinking level of students taught with the *chunking technique* combined *with writing is thinking* (experimental class), the *chunking technique* (positive control class), and the lecture technique (negative control class) in the human circulatory system material. Because there is a difference, the LSD (Least Significant Difference) test continues, showing that the thinking level of students taught with the *chunking technique* combined with *writing is thinking is* more optimal, followed by the *chunking technique* and lecture technique.

Kata Kunci: *Chunking Technique ; Writing is Thinking, Thinking Level, Circulatory System*

1. INTRODUCTION

Education is an important aspect of life. Human life can be improved through it. dignity as well as his dignity through education. Based on Article IV of the 1945 Constitution of the Republic of Indonesia, the main objective of education is enlightening life nation (Chandra, 2023). Improving the quality of human life is highly dependent on education. Furthermore, education is expected to provide the skills needed to recognize one's potential and develop creativity. Its effectiveness is determined by two factors: students' cognitive development, moral mastery, or character, and the growth of

students' creativity (Puspita & Andriani, 2021). The above arguments make it clear that education is crucial for one's survival. One characteristic of a good student is their ability to improve their perception and thinking skills.

The ability to process information from the environment that involves students' thinking processes is necessary for the application of knowledge in learning. In each learning task, students' cognitive abilities are used. covers think. Think is process active Where participant educate Engage with their environment to enhance their cognitive capacity. (Afandi & Ningsih, 2020). Proper learning leads a person to enhance their capacity for critical thinking and acquire new information, making learning more meaningful with mastery and ability in more specialized knowledge obtained from the thought process rather than simply understanding concepts. The thought process is a crucial part of achieving knowledge mastery because it enables students to acquire relevant knowledge as a result of their learning process (Kadarusman *et al* ., 2020). Well-honed skills and knowledge are able to produce a strong attachment to long-term memory, which will subsequently influence the child's level of thinking. A good level of thinking is inseparable from students' memory (retention) of the material learned. Students who have good memory skills are able to process information well (Jamaluddin *et al* , 2023).

Three domains form the development of knowledge mastery domains, namely: *cognitive system, metacognitive system,* and *self-system* and divide mastery. knowledge This into the six level system think, that is: *retrieval, comprehension, analysis, knowledge utilization, metacognitive system, and self-system* (Marzano & Kendall, 2007). For students' learning process, mastery of Marzano's Taxonomy of Thinking Levels is crucial. The self-system determines whether to continue current habits or initiate new actions when faced with choices. The metacognitive system sets goals and tracks how well those goals are achieved. All necessary information is processed by the cognitive system, and its content is provided by the domain. knowledge. Simply put, the phase of thinking and learning that begins with remembering, understanding, evaluating, and applying acquired knowledge based on previously acquired knowledge is known as the thinking level in Marzano's Taxonomy (Feranda et al., 2020).

In fact, many students in Indonesia believe that their capacity cognitive they Already tested until on point in where they can understand basic ideas before moving on to more complex ideas. Very low-level thinking skills in statistics, with only 20-25% answering questions correctly, and problem-solving skills (Payadnya & Suwijaya, 2021). A study in Semarang and Sulawesi revealed the concerning level of thinking and cognitive abilities of students in Indonesia, showing that the level of thinking is very low with an average score of 47.83% and 27.16% of students scored very low on cognitive learning outcomes (Meylasari et al., 2021). Based on an interview with one of the biology teachers, the criteria for students' thinking levels are classified as low. This is consistent with what I saw and heard from one of the biology instructors at SMA Negeri 20 Gowa, who stated that the level of thinking of students, especially in grade XI, is relatively low.

The low level of thinking of students is caused by a number of variables including: 1) many concepts that are difficult to remember 2) abstract concepts 3) lack of teacher interest in the content, and 4) lack of information resources. When learning abstract biology content, a deep understanding of the concepts is necessary to ensure that

students do not struggle to understand biology topics (Nisak, 2021). Furthermore, if teachers use less diverse teaching methods, cognitive tension will occur, indicating that even though there is a lot of material available, The learning strategies used are often boring (Fadilah & Nasution, 2024). Another factor is the lack of attention paid to the teacher's role in improving students' thinking skills. However, implementing learning techniques based on learning dimensions can improve students' thinking skills, such as the *Chunking technique* combined with *Writing is Thinking* .

Chunking is the process of breaking down information into more manageable "pieces" to aid comprehension and recall. *Chunking* is considered one of the most well-known techniques. *Chunking can occur in two different ways: either through strategic reorganization based on familiarity or prior knowledge (often used in letters and numbers) or through grouping based on perceptual characteristics (often used in visuals) .* This suggests that information can be categorized into meaningful units, i.e., chunks, which can increase the amount of information that can be remembered and the immediate memory span (Yasri & Piwat, 2021). Purpose from application of the *Chunking technique* among them help improve memory so that students are able to reduce the amount of information that must be stored in working memory by reducing the quantity of intersecting information, thereby increasing working memory capacity and increasing students' level of thinking. reduce cognitive load. By grouping frequently occurring words, the brain can absorb more information, process each word in a sentence in a individual, brain will processing pieces say. Thus, students learn ready-to-use phrases and expressions that can be used in everyday conversation and understood by native speakers (Shchegoleva, 2022).

Effective learning enables students to understand the material presented by the teacher. Students must be able to receive, process, and remember information. Writing is one way to achieve this. Writing can be seen as a means to organize student understanding and encourage knowledge acquisition. Writing *is* thinking. When students write about a subject, students need to think about it, but teachers want students to think (Putri *et al*., 2023). According to Nuckles et al. (2020), writing is also considered an instrument natural way of thinking and learning that contributes to the process of creating information, leading to a thorough understanding of the subject matter, increasing motivation to learn, and improving long-term retention. If participants students and teachers interact, learning activities can occur. The *Chunking strategy* used by the teacher is the basis for combining the two learning strategies in this study, while *writing is thinking* is done by students. A little material is delivered by the teacher and students who remember it, pass it on *(Chunking information*) using their own language (*Writing is thinking*). Students are asked to integrate several pieces of information so that the knowledge they gain does not stand alone (*Chunking information*). This is turned into a complete compilation of data by *writing is thinking*. This is the reason the two learning techniques, namely the *Chunking technique,* are combined with *writing is thinking*.

Students find biology material difficult to understand due to the complex terminology and resources (Syamsurizal & Ardianti, 2021). The abstract nature of biological concepts and the abundance of unfamiliar terminology contribute to student difficulties (Farahani et al., 2023). Eleventh-grade high school students are required to research information about the human circulatory system. Based on an interview with a biology teacher at SMA Negeri 20, Gowa Regency, the human circulatory system is a

difficult subject for students to understand because the organs studied cannot be seen directly. by participant educate, so that need observation in a way It's direct and requires a high level of understanding because it's difficult to express verbally. Furthermore, it's difficult to directly monitor the processes taking place there (Jauharati et al., 2022).

Based on the background above, research was conducted on the influence of the Integrated *Chunking technique Writing is Thinking* on students' thinking levels. State Senior High School 20 Gowa in learning about the human circulatory system.

2. METHOD

2.1. Research Design

The approach used in this study is quantitative. The type of research used in this study is *Quasi-Experimental* with a *Pretest - Posttest design. Nonequivalent Control Group Design*.

2.2. Population and Sample

The population of this study was all class XI students of SMA Negeri 20 Gowa Regency, consisting of six study groups with a total of 200 students.

The sampling technique in this study was *purposive sampling* . In this study, the sampling technique used was based on the students' abilities which were not much different between the experimental group and the control group which were divided into class XI.1 (experimental), class XI.2 (positive control) and class XI.3 (negative control) with the number of students in each class being 30 people. So the research sample amounted to 90 students.

2.3. Research Prosedure

The syntax procedures in the chunking technique proposed by Risakotta (2022) include: Preparation: providing a learning video about the human circulatory system. Reviewing reading strategies: before asking students to paraphrase the text, the teacher first discusses specific text parsing strategies. Cutting the text, namely the learning video that has been *chunked* from the topic of the human circulatory system into sub-materials including blood components, types of blood types, blood clotting mechanisms and blood transfusions, the structure of the human heart, types of blood vessels, the circulatory cycle, disorders of the circulatory system and treatment technology in the circulatory system. Next, students watch a video that explains the concept of the human circulatory system that has been *chunked*. Paraphrasing meaning: students must rewrite the “pieces” in their own words. At the end of this activity, students have a paraphrased version of the video shown written on a *writing sheet.* Assessment and sharing: the teacher askes students to compare the written version of the text from the video shown with their group mates. This step often leads to interesting discussions about the interpretation of the meaning of different concepts in the same words.

The syntax procedures in *the writing is thinking technique* proposed by Holly & Carver (2022) include: students write the topic or concept they want to learn on a piece of paper. Next, students explain the concept using their own simple words or language as if

they were teaching someone else. Then, students review and re-identify concepts that are not yet known from the previous process. If they experience difficulties in a part of the concept, then re-identify the concept using several literature and re-read the concept using several literature, conducting discussions between students and students and students with the teacher until fully understood. If in the explanation, students still use many terms or complex language, then rewrite it with simpler terms or language so that the students are sure the explanation can be understood by others. Next, students are asked to present the concept they understand in front of the class or other groups.

2.4. Instrument Research

This research uses a data collection technique in the form of a test, namely an *objective* question sheet containing 32 statements. The thinking level components consist of six levels, namely *Retrieval*, *Comprehension*, *Analysis*, *Knowledge Utilization*, *Metacognition*, and *Self-System*. Furthermore, both classes were given a test before the learning activity (*pre-test*) and a test after the learning activity (*post-test*).

The instrument used was a test given to the experimental group and the control group was given information about the human circulatory system both before (pre-test) and after (post-test) the learning process. The indicators suggested by Marzano & Kendall (2007), which include Level 1 (retrieval) with recognition and recall indicators, serve as the basis for developing questions. These levels of thinking. Level 2 (understanding) uses indications of integration and symbolization. Level 3 (analytical) uses appropriate indicators and generalizations. Level 4 (use knowledge) covering indicator for decision -making and problem-solving. Level 5 (metacognition) provides guidance for goal-setting and process monitoring. Level 6 (self-system), which includes efficacy and motivation checkers. Table 1. displays a grid of thinking level questions.

Table 1 Grid Question Level Think

Thinking Level	Process Think	Number Question	Form Question
Level 1 *Retrieval*	*Recognizing*	1, 2, 3	Multiple Choice
	Recalling	4, 5, 6	
Level 2 *Comprehension*	*Integrating*	7, 8, 9	Multiple Choice
	Symbolizing	10, 11, 12	
Level 3 *Analysis*	*Generalizing*	13, 14, 15	Multiple Choice
	Matching	16, 17, 18	
Level 4 *Knowledge Utilization*	*Decision Making*	19, 20, 21	Multiple Choice
	Problem Solving	22, 23, 24	
Level 5 *Metacognition*	*Specifying Goals*	25, 26	Description
	Process Monitoring	27, 28	
Level 6 *Self-System*	*Examining Motivation*	29, 30	Description
	Examining Efficacy	31, 32	

Source: (Marzano & Kendall, 2007)

2.5. Data Analysis

The stages of data processing carried out in this study are descriptive analysis and inferential statistics (ANACOVA test). Before conducting this inferential statistical test, several prerequisite tests were first carried out, namely the normality test and the homogeneity test. The provisions for making decisions from the analyzed data are by

looking at the significance value if the α value > 0.05 then the research data is normally distributed and homogeneous, but if the α value <0.05 then the research data is declared not normally distributed and not homogeneous. While the provisions for making decisions in the ANACOV test are if the sig value > α then H_0 is accepted, meaning there is no significant difference between the experimental and control classes given the treatment of the integrated chunking technique writing is thinking (experiment 1), chunking technique (experiment 2) and control (Lecture technique) on the level of student thinking. Meanwhile, if sig < α then H_1 is accepted, meaning there is a significant difference between the experimental and control classes that were given the treatment of integrated chunking technique writing is thinking (experiment 1), chunking technique (experiment 2) and control (lecture technique) on the level of student thinking. with a level of α = (0.05). Then if there is a difference, it is continued with the LSD test (Sappaile, 2016).

3. RESULT AND DISCUSSION

Based on the statistical analysis of the students' thinking levels used before and after learning was carried out through the Chunking learning technique combined with Writing is Thinking in class XI.1 (Experiment 1), the Chunking technique in class XI.2 (Experiment 2) and the Lecture technique in class XI.3 (control). The following is the data collection process in the field.

Figure 1. Students fill out *the pretest* and *posttest* thinking level test in Experimental Class 1

Figure 2. Students complete *the pretest* and *posttest* of the thinking level test in Experimental Class 2.

Figure 3. Students fill out *the pretest* and *posttest* questionnaires for the thinking level test in the control class.

Table 2. Distribution of Descriptive Statistics Values of Students' Thinking Levels in the Experimental and Control Classes

Statistics	Experimental Class 1 (Chunking Technique + Writing is Thinking)		Experimental Class 2 (Chunking Technique)		Control Class (Lecture Technique)	
	Pretest	*Posttest*	*Pretest*	*Posttest*	*Pretest*	*Posttest*
Size Sample	30	30	30	30	30	30
Average	32	79	31	73	32	62
Standard Deviation	8.09	9.01	6.47	10.04	6.74	10:38
Mark Lowest	19	59	19	56	20	44
Mark Highest	50	94	45	94	45	81

Data on the frequency of obtaining thinking levels in the experimental class and control class taught using the *Chunking Technique* Combined with *Writing is Thinking* (Experiment 1), *Chunking Technique* (Experiment 2) and Lecture Technique (Control).

Table 3. Frequency Distribution and Percentage of Pretest and Posttest Scores of Students' Thinking Levels in the Experimental and Control Classes

		Experiment 1 (Chunking+Writing is Thinking Technique)				Experiment 2 (*Chunking Technique*)				Control (Lecture Technique)			
		Pretest		*Posttest*		*Pretest*		*Posttest*		*Pretest*		*Pretest*	
		F	%	F	%	F	%	F	%	F	%	F	%
80-100	Very Tall	0	0	13	43	0	0	6	20	0	0	2	7
60- 79	Tall	0	0	16	53	0	0	22	73.33	0	0	14	50

40- 59	Currently	5	16.67	1	3	1	3.33	2	6.67	3	10	13	43
20- 39	Low	24	80.00	0	0	28	93.33	0	0	26	86.67	0	0
0- 19	Very Low	1	3.33	0	0	1	3.33	0	0	1	3.33	0	0

Based on Table 3, it can be concluded that in the class that was given the *Chunking technique treatment* combined with Writing *is Thinking,* the results at the *pretest stage* can be described as 5 students are in the medium category with a percentage of 16.67%, 24 students are in the low category with a percentage of 80.00% and 1 student is in the high category with a percentage of 16.67%. in the low category with a percentage of 3.33%. After the treatment was given with the application of the *Chunking technique* Combined with *Writing is Thinking* by looking at the *posttest score*, it can be explained that 13 students were in the very high category with a percentage of 43% and 16 students were in the high category with a percentage of 53% and 1 student was in the medium category with a percentage of 3%. These results show that there was a positive increase in the level of thinking of students on the material of the human circulatory system with the application of the *Chunking technique* Combined with *Writing is Thinking. Experimental Class 2 which was given the Chunking* learning technique for obtaining thinking level scores at the *pretest stage* can be explained that there were no students who were in the very high and high categories. Furthermore 1 student is in the medium category with a percentage of 3.33%, 28 students are in the low category with a percentage of 93.33% and 1 student is in the high category with a percentage of 3.33% very low category with a percentage of 3.33%. After being given treatment, the level of thinking score can be described as 6 students are in the very high category with a percentage of 20%, 22 students are in the high category with a percentage of 73.33% and 2 students are in the low category with a percentage of 73.33%. in category currently with percentage 6.67%. And No there is students who are in the low and very low categories . While the control class Which given the lecture learning technique to obtain thinking level scores at the *pretest stage* can described that 3 person participant educate is at in category currently with a percentage of 10%, 26 students are in the low category with percentage 86.67% And 1 participant educate is at in category very low with a percentage of 3.33%. After being given treatment, the score obtained The level of thinking can be described as 2 students are in the very high category with a percentage of 7%, 15 students are in the high category with a percentage of 50%, 13 students are in the medium category with a percentage of 43%. Data regarding the frequency distribution of students' thinking levels in the experimental and control classes can be seen in Figure 1.

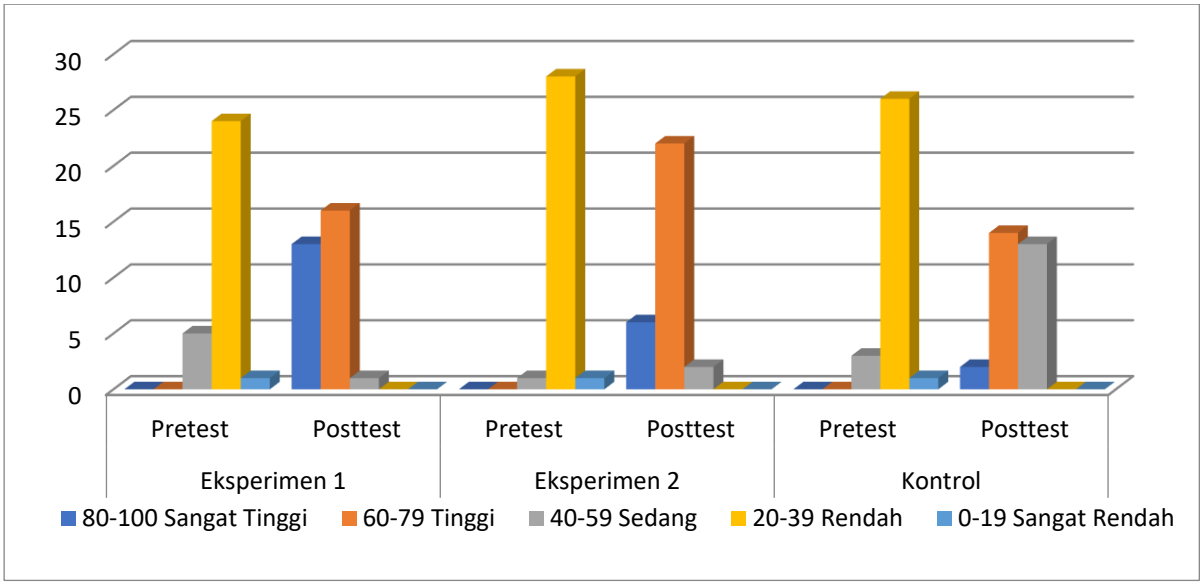

Figure 4. Frequency Distribution Diagram of Thinking Level Scores of Students in the Experimental and Control Classes

The results of inferential statistical analysis include normality test, homogeneity test and hypothesis test (Anacova Test) with the help of *the Statistical Package for Social Science* (*SPSS*) *for Windows* 23.0 computer program. The research data is considered not normally distributed and not homogenous if the value of α <0.05, while normally distributed and homogenous if the value of α > 0.05. Furthermore, for a more detailed hypothesis test, it is used to determine the differences in the level of thinking taught using the *Chunking technique* combined with *Writing is Thinking*, the *Chunking technique* and the Lecture technique of class XI students of SMA Negeri 20, Gowa Regency. The provision for data decision making is sig > 0.05, then the application of the *Chunking technique* combined with *Writing is Thinking* has no difference, but if the sig value <0.05 then the application of *the Chunking technique* combined with *Writing is Thinking* has a difference.

Table 4. Results of the Normality Test for the Pretest and Posttest Thinking Levels

Variables	Data	Sig	Sig Level (α)	Conclusion
Thinking Level	*Posttest* Experiment 1 (Technique *Chunking* Combined *Writing is Thinking*)	0.255	> 0.05	Normal
	Pretest Experiment 2 (*Chunking Technique*)	0.451		Normal
	Posttest Experiment 2 (*Chunking Technique*)	0.170		Normal
	Pretest Control (Technique Lecture)	0.052		Normal
	Posttest Control (Lecture Technique)	0.211		Normal
	Pretest Experiment 1 (Technique *Chunking* Combined *Writing is Thinking*)	0.543		Normal

Table 5. Results of the Homogeneity Test of Thinking Levels

Variables	Statistics	*Pretest*	*Posttest*

Perception Burden Cognitive		Experiment Control	Experiment Control
Level Think	*Sig*	0.584	0.776
	Level Significance (α)	> 0.05	
	Conclusion	Homogeneous	Homogeneous

Table 6. Results of Hypothesis Testing of Students' Thinking Levels

Test of Between-Subjects Effects					
Source	**Type III Sum of Squares**	**df**	**Mean Square**	**F**	**Sig**
Corrected Model	6345.474 [a]	3	2115.158	27,224	.000
Intercept	12249.892.	1	12249.892	157,669	.000
PreLB	1736,052	1	1736,052	22,345	.000
Class	3923.814	2	1961,907	25,252	.000
Error	6681.648	86	77,694		
Total	469989.000	90			
Corrected Total	13027.122	89			

Based on the results of the hypothesis testing, it shows that the significance value is <0.000. This indicates a sig value <α (0.05), so it can be concluded that H_0 rejected and H_1 accepted. This means that there are differences in the thinking levels of students who are taught using the *Chunking technique* combined with *Writing is Thinking* , the *Chunking technique* and the Lecture technique in students' understanding of the human circulatory system. Therefore, the analysis was continued with further testing using the LSD (Least Significant Difference) test to *see which* independent variables have a significant influence on increasing the dependent variable. The results of the further test with LSD with a significance level of 0.05 can be seen in table 7.

Table 7. Results of the LSD Test of Differences in Students' Thinking Levels

Variables	**Class**	**Difference *Mean***	**Sig**	**Testing**	**Decision**
Thinking Level	Class Experiment 1 (*Chunking Technique)* Combined *Writing is Thinking*) and Class Experiment 2 (Technique *Chunking*)	5,837 *	.012	Sig < 0.05	Significant/ different real
	Class Experiment 1 (*Chunking Technique)* Combined *Writing is Thinking*) and Class Control (*Lecture Technique*)	16,082 *	.000		Significant/ different real
	Class Control (*Lecture Technique* and Class Experiment 2 (*Chunking Technique*)	10,245 *	.000		Significant/ different real

Based on the analysis of data collected throughout the research, the level of thinking of students who were taught using the Chunking Technique Combined with Writing is Thinking was more optimal, followed by the Chunking Technique and the Lecture Technique. One of the factors that caused an increase in the level of thinking of students in the application of The *Chunking* technique combined with *Writing is Thinking* is a

learning activity Which the more complex that is existence activity write Rephrasing information using one's own words is an effective technique for stimulating higher-order thinking. This is consistent with research by Rahayu *et al*. (2023), who found that using this method allows students to create their own knowledge and improve their understanding of ideas. Writing exercises can help students connect ideas and provide teachers with insight into how students' ideas develop. Students can focus and concentrate on understanding the concepts being studied by dividing large concepts into smaller, more easily remembered concepts. A good level of thinking is inseparable from students' retention of learning material. Students with strong memory skills can process information well (Cahdriyana and Richardo, 2021).

The challenges faced by students' enthusiasm and interest in participating in learning activities, including writing texts, are also related to these elements. By providing the *"Writing is Thinking" sheet* and the presentation materials presented by the teacher, students' motivation to participate in the learning process increases. *"Writing is Thinking"* can sharpen students' understanding of grammar (because they understand the relationships between ideas in their writing), improve creative thinking, and improve memory level think increase. Method This more effective remember that participant Today's education era is an era where they grow up with technology so that with the integration of *chunked* learning videos combined with *Writing is Thinking* increase motivation participant educate for continue learning process with the help of providing study groups so that the level thinking improves and encourages their participation in classroom learning (Sairo, 2021)

the Chunking technique divides the material of the human circulatory system. into small *chunks*, then ask students to identify and remember each *chunk*. This activity aims to engage students in thinking. According to Rahayu et al. (2023), by building their own knowledge, students can improve understanding they to draft. They Also can discussing or communicating their thoughts with peers, thus enabling them to encourage each other and exchange ideas, which helps students understand the subject matter and express their thoughts both verbally and in writing. This is also supported by research by Julung et al. (2021) that Video-based *chunking* learning techniques can improve students' critical thinking skills. Higher-order thinking skills are essential for learning so that students can solve problems correctly, leading to optimal thinking and learning outcomes. The use of student worksheets (LKPD) using the *chunking learning approach* is a biology teaching method that can enhance students' cognitive abilities as an additional learning resource and teaching material in the learning process (Salsabila & Rinaningsih, 2023). Aldiyah (2021) mentions several benefits of student worksheets: Students play an active role in learning activities. learning, which includes: 1). help participant educate them to develop concepts; 2). teach them how to develop skill processes; 3). become mentor for participant educate And Teacher in learning activities; and 5). providing materials and information about the concepts they have learned methodically.

Based on the analysis of the level of thinking in the application of the lecture technique, there are very significant differences. shown Considering the number of students in this category is currently more than the *Chunking technique* combined with *Writing is Thinking* and the *Chunking technique*. One of the factors that causes it is the lack of serious attention from students. So the lecture technique will be successful if students pay close attention, if the lecture is delivered methodically, if the lecture is interesting, and if the lecture provides opportunities for students to work on assignments and final assessments. Information about the human circulatory system is very complex, students often have difficulty understanding it. The solution is to provide media and divide the material in large areas into small pieces that can make them understand. material and active in learning If media This support their learning process (Lawe et al., 2023). This is supported by research by Budiyanto (2021), who stated that the lecture technique is ineffective in improving students' thinking skills. To maximize the benefits of the lecture technique, consideration should be given to incorporating techniques that increase student engagement, understanding, and information retention

4. CONCLUSION

Thinking level of grade XI high school students Negeri 20, Gowa Regency, which is taught using the *Chunking technique* combined with *writing is thinking,* is in the high category, the *Chunking technique* is in the high category and the Lecture technique is in the high category. There is difference level think participant educate Which taught with technique *Chunking* combined *Writing is Thinking*, technique *Chunking* And Lecture technique.

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