The Effect Of Guided Note Taking Learning Model Using Macromedia Flash 8 On Students' Chemistry Learning Outcomes On The Periodic System Of Elements In Grade X

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Abstract

This research or study aims to determine the effect of the Guided Note Taking Learning Model Using Macromedia Flash 8 on Student Chemistry Learning Outcomes on the Periodic System of Elements for Class X at SMA Kampus Nommensen Pematangsiantar. This type of research is experimental research using a pre-test and post-test research design. The population of this study was all class X of SMA Swasta Kampus Nommensen Pematangsiantar consisting of 3 classes. The sample taken was a random sampling technique. The sample in this study was students in class X - 1 as the experimental class and students in class X - 3 as the control class. Data on learning outcomes can be collected using an instrument in the form of an objective test in the form of multiple choice consisting of 25 questions. Furthermore, the data analyzed by testing the research hypothesis using the independent sample t-test using SPSS 24 was obtained based on the results of the hypothesis test data from learning outcomes with sig (2tailed) of 0.000 < 0.005, then H0 can be rejected and Ha accepted. And there is also data analyzed using the N-Gain test from learning outcomes showing an average value in the experimental class of 73% while the average value in the control class was 43%. This means that there is a significant difference in the guided note taking learning model using macromedia flash 8 on students' chemistry learning outcomes in the periodic system of elements material in class X of SMA Swasta Kampus Nommensen Pematang Siantar in the 2024/2025 Academic Year.

Keywords: Guided Note Taking, Macromedia Flash 8, And Learning Results

INTRODUCTION

In this sophisticated era, education is the main thing for every individual. Education is a basic planned effort to create a learning atmosphere and learning process so that students actively develop their potential to have spiritual religious strength, self-control, personality, intelligence, morals, knowledge. life, general knowledge and skills required by society based on the Law (UU/20/2003).

The term learning is a word that is inseparable from the education process, even society understands learning as a school property. Learning is essentially a process that is marked by changes in a person. To ensure that education can continue to develop, the next generation should be prepared to understand learning outcomes and have the ability to think intelligently and creatively. For this reason, the educational pattern that is carried out must create competent humans to be able to continue development in this modern era.

Learning is a process of interaction between students and educators and learning resources in the learning environment. In addition, concerns about chemistry subjects in schools underlie this study. Chemistry subjects are often considered as very complicated subjects among students (Riani et al., 2021) .

Several things are thought to be factors that cause chemistry subjects to be very difficult to understand, one of which is because the way chemistry material is delivered to students is less touching and learning chemistry requires a lot of reading and memorizing related subject matter (Sasmitha, 2022) .

Chemistry lessons are considered uninteresting so they are less popular and avoided by most students. Chemistry learning in schools should prioritize a strong understanding and comprehension of concepts and their application in everyday life so that chemistry learning in schools becomes more meaningful learning. The chemistry learning process can run effectively if students do not just listen to the material presented by the teacher but also participate in every problem solving with learning outcomes, are able to work together in teams and argue with each other in the classroom (Yuliah, 2021) .

Macromedia Flash 8 is the latest version of *Flash* . Since being acquired by Adobe, its capabilities and features have become so powerful and complete that it can be used to create various applications such as web animations, interactive multimedia cartoons, to applications for mobile phones. In addition, Flash 8 is also compatible with other design and animation software. (Andrisa, 2007) .

Guided Note Taking is a model used in the learning process by the teacher preparing a chart/scheme or something else that can help students in making notes according to the material that has been delivered. There are many forms or patterns that can be done for this strategy, one of the simplest is filling in the dots. (Rifqi Ardhiansyah et al., 2023) .

In the world of education , teachers hold role important and strategic as teachers , educators , trainers for participants educate , teachers are agent change social *(agent of*

social change) who changes pattern thoughts , attitudes and behavior people man going to a better life Good more dignified and more independent,Process learning will in progress in a way maximum if the teacher masters material lessons , methodology lessons and can using appropriate and expected learning media capable help participant educate in reach results maximum learning . (Wahyu bagia sulfemi, 2019) .

Frequent learning models used by teachers in schools is a learning model conventional . Learning model conventional is approach learning nature traditional that focuses on activity learning from teachers. Learning model conventional that can carried out by the teacher, namely give material through lectures , exercises question , then give task (Jusrianto et al., 2019) . With use method learning conventional delivered through lectures and giving the assignments given by the teacher are lacking effective Because Lots participant less educated pay attention and be busy with friends on the same bench matter this is a learning model not enough interesting attention participant educate so that results learning not enough maximum .

Learning outcomes in the field education is results from measurement to participant education that includes factor cognitive , affective , and psychomotor after follow the measured learning process with using relevant test instruments and instruments . (Pane, E. P, 2022) influence module learning stem based on results learning and motivation Study students in the eyes studying chemistry general .

According to Ulfah and Arifudin, (2021) , results Study is changes that occur in oneself participant educate both concerning affective and psychomotor as results from activity Study (Wijaksono et al., 2022) .

that researcher This The same with journals that have been published. Such as The Influence of the Talking Stick Learning Model with Assisted Media *Question Card* Regarding Interest and Learning Outcomes Students in System Material Periodic Elements in Class X of SMA Negeri 3 Pematang Siantar , but differences in learning models , media, and only in results Study just in the researcher this . (Batubara N. et al., 2023)

According to Simangunsong, (2023) , *Implementation of the Problem Based Learning (PBL) Learning Model to Improve the Skills and Creative Thinking of Students on the Material Colligative Properties of Solutions* is one of the chemicals that is considered difficult in the colligative properties of solutions. Difficulty understanding the properties of colligative material solutions can hinder students' understanding of other concepts (Nurhayati, 2020) .

Independent curriculum is an educational approach that gives students the freedom to explore their potential and interests more broadly. In this curriculum, not only academic aspects are emphasized, but also the development of students' social, emotional, and spiritual skills. Independent curriculum aims to create graduates who are competitive and contribute positively to society.

One of the materials considered difficult in chemistry learning is the periodic system of elements. The periodic system of elements is a table containing a list of names

of chemical elements that are classified based on the similarity of the properties of the elements (Hasanah & Nurhasanah, 2020) . The elements contained in the periodic table are classified into eight main groups, namely group IA to group VIIIA and the transition group, namely from group IB to VIIIB. These elements are divided into several forms, namely solid, liquid, and gas (Hastuti et al., 2019) .

One way to overcome this is to raise student learning outcomes that aim to get good learning outcomes. Therefore, researchers need to conduct observations as an initial step to find out the problems that occur related to student learning outcomes at school, and consider alternative solutions at school. In order for education to understand the concept of students, educators must be able to understand the learning model in such a way that it is appropriate. The learning model functions as a guideline for learning designers and teachers can plan teaching and learning activities. One alternative that can be chosen to improve student learning outcomes in the subject of "Periodic System of Elements" is to use the *Guided Note Taking learning model* using *Macromedia Flash 8* to explain the material (Ferdian & Arifin, 2019) .

As we know that so far teachers have paid less attention to the models used during the learning process. The use of varied learning methods can create appropriate and efficient learning, thus having an impact on improving the quality of education.

Good learning outcomes can be achieved by using the right method. The right method must be adjusted to the material to be delivered, facilities and infrastructure, and the condition of the students. Learning must involve the activeness of the students and not be centered on the teacher alone.

In the *guided note taking learning model* , there is one method that is appropriate to use according to the problem. (Silberman, 2017:123). *Guided note taking* is a learning method by providing handouts *to* students and instructing them to take notes during the learning process. Guided note taking method

(guided notes) is a learning method that uses a scheme, chart, or handout containing important points from a lesson that can help make it easier for students to take notes when the teacher delivers the material. (Suprijono, 2014:105).

From the problems carried out by researchers at SMA Kampus Nommensen Pematangsiantar on class X students, the following results were obtained: Students can write down the definition of the theory Periodic Table of Elements and can also present group assignments regarding groups, periods and others. Students are assessed using the Criteria for Achieving the Learning Objectives of Chemistry for Class X of SMA Kampus Nommensen Pematangsiantar in the Independent Curriculum which acts as a benchmark for assessment guidelines allocated as a threshold for each competency taught to students using a Rubric, using a value Interval, and a Description of the criteria in creating an assessment table.

Therefore, the results of the students' answers obtained the fact that students still have difficulty answering questions that will be given by the researcher so that it can be concluded that students' systematic *guided note taking abilities* are still low. In addition, it

was found that students only presented the results of group discussions in front of the class but did not know their meaning, students forgot about the lesson material that had been studied even though the lesson material was related to the lesson material that would be discussed, students had not been able to apply the results of the lesson to their lives and if students were given difficult questions from the examples given by their teachers, the students would have difficulty solving the questions. This happened due to the lack of understanding of students about *the Guided Note Taking* that was taught and of course made the learning process carried out successful. Therefore, the ability of learning outcomes regarding *guided note taking* of students at SMA Swasta Kampus Nommensen Pematangsiantar should be given more attention for the success of the learning process (Yastiari, 2019) .

Based on the results of observations conducted on a chemistry teacher at SMA Private Nommensen Campus Pematangsiantar, students have relatively low learning outcomes, this is indicated by the results of interviews with chemistry teachers at SMA Private Nommensen Campus Pematangsiantar, KKM is 70, the lack of student learning outcomes can result in a decrease in learning outcomes by 30%. According to the results of observations of learning activities in class X SMA Private Nommensen Campus Pematangsiantar, it shows several symptoms of lack of student learning outcomes in chemistry lessons, including: (a) class X students seem to still have difficulty in completing the pre-test and post-test questions, (b) only 3 or 4 students pay attention to the teacher's explanation, while the other students are busy with themselves, (c) Rarely do assignments given by the teacher, (d) Some students often go in and out of class. Therefore, the researcher is interested in conducting a study entitled " The Effect of *Guided Note Taking* Learning Model Using *Macromedia Flash 8* on Students' Chemistry Learning Outcomes on the Periodic System of Elements Material Class X at Nommensen Campus High School, Pematangsiantar."

METHODS

The research conducted is a quantitative method using experimental research and control research. This model is used to determine the influence of learning media used by teachers in efforts to improve student learning outcomes at school.

According to Sugiyono, (2023) the experimental research model is a research model used to find the effect of certain treatments on others under controlled conditions. Sugiyono, (2023) to argue that study quantitative is a research model based on philosophy positive (concrete data), used For research on population or sample specific, data collection uses instrument research , data analysis is quantitative / statistical with objective For describe or test hypothesis that has been set .

Form research used in study This is experimental design. It is called a true experiment . Because in design This researcher can control all variable external influences

the way experiment , with thus internal validity (quality) implementation design (research) can become tall (Nurhaedah & Nur, 2022) .

Study This done with use design *Pretest-Posttest Control Group Design* . Where the group experiment given treat (X) namely treat learning chemistry with using a learning model *Guided Note Taking* with use *Macromedia Flash 8* and class control that applies learning models conventional (Agustini et al., 2022) .

This research will be conducted at SMA Kampus Nommensen Pematangsiantar Martoba, Siantar District, Simalungun Regency, North Sumatra 21138. And will be implemented in August, odd semester of the *2024/2025 academic year.*

Population is a generalization area consisting of: objects & subjects that have certain qualities and characteristics that are determined by researchers to be studied and then conclusions drawn (Sugiyono, (2023) .

Data analysis techniques are models or methods that can be used to process data from information results so that it is easy to understand by yourself and others.

According to Sugiyono, (2023) data analysis techniques are activities after data from all respondents are collected. The data analysis techniques used are clear, namely to answer the problem formulation and test the hypothesis that has been formulated in the proposal. Data from *the pretest* and *posttest* are processed to obtain conclusions about the influence of the *Guided Note Taking learning model* using *Macromedia Flash 8* on students' chemistry learning outcomes.

RESULTS AND DISCUSSION

Description of Research Results

Data Description

This research was conducted at SMA Negeri Nommensen Campus Pematang Siantar on August 19 - September 12, 2024. This study aims to determine whether there is an effect of the Guided Note Taking learning model using Macromedia Flash 8 on Students' Chemistry Learning Outcomes in the Periodic System of Elements Material of Class X SMA Negeri Nommensen Campus. The population used in this study was in class X. The sample in this study consisted of 2 classes, namely class X-3 as a control class with a total of 25 students, and X - 1 as an experimental class with a total of 22 students.

Normality Test of Experimental and Control Class Tests

For an explanation of the results of the normality test for the experimental group and control group with the results of the SPSS 24 program calculations, see the following table:

Table 1. Normality Test of Experimental Class and Control Class Tests

		Tests of Normality					
		Kolmogorov-Smirnov [a]			Shapiro Wilk		
		Statistics	df	Sig.	Statistics	df	Sig.
	class	s	df	Sig.	s	df	Sig.
results Study student	Experimental pretest	.169	22	.100	.902	22	.033
	Posttest experiment	.182	22	.057	.927	22	.106

Pretest control	.157	25	.113	.907	25	.026
Posttest control	.128	25	.200 *	.963	25	.469

*. This is a lower bound of the true significance.
a. Lilliefors Significance Correction

Based on the results of the calculation in the SPSS 24 program, all experimental class data and control class data, both pre-test and post-test, can be seen that the results of the Kolmogorov Smirnov normality test show that the pre-test results have significant values. Where all four are > 0.05, therefore it is concluded that the data is normally distributed.

Table 2. Homogeneity Test of Experimental and Control Classes

Test of Homogeneity of Variance				
	Levene Statistics	df1	df2	Sig.
Experimental Class and Control Class Determined Student Learning Outcomes Pre-Test and Post-Test	Based on Mean	.532	1	42	.470
	Based on Median	.507	1	42	.481
	Based on Median and with adjusted df	.507	1	41,593	.481
	Based on trimmed mean	.534	1	42	.469

Based on the table above, it can be concluded that the Sig Based On Mean is 0.470 > 0.05 so that it can be applied significantly and is homogeneous.

Research Hypothesis Testing

Independent sample t-test is used to determine whether there is an influence of the average of two unpaired samples. The main requirement in the independent sample t-test is that the data is normally distributed and homogeneous (not absolute)

Table 3. Results of the Independent Sample T-Test

Independent Samples Test									
		Levene's Test		t-test for Equality of Means					
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Lower	Upper
Learning outcomes student	Equal variances assumed	.532	.470	4.100	42	.000	9,000	2.195	4,571	13,429
	Equal variances not assumed			4.100	41,355	.000	9,000	2.195	4,569	13,431

Discussion

In this study, the influence of the guided note-taking learning model using Macromedia Flash 8 on the material of the periodic system of elements on the chemistry learning outcomes of class X students of SMA Swasta Kampus Nommensen Pematang Siantar has been carried out with the following results:

In class X there are 3 classrooms, where class X - 1 is used as an experimental class and class X - 3 as a control class. The experimental class is a class that is given treatment with the Guided Note Taking learning model using Macromedia Flash 8, while the control

class is a class that is not given treatment with the Guided Note Taking learning model using Macromedia Flash 8, each of the two classes uses a very different learning model on the periodic system of elements. So related to the learning implementation time, it is 2 x 45 minutes / meeting.

Before the implementation of the learning process begins, students are given a pre-test first to determine their initial abilities, before the material is delivered, namely the material on the periodic system of elements. After that, the learning process begins, then the researcher first gives a pre-test in the control class and in the experimental class to see if the abilities of the two classes are the same. The researcher gives a pre-test with 25 multiple-choice questions to measure student learning outcomes. Then given a pre-test and post-test to both groups of classes that will be taught using different learning model strategies.

The researcher conducted the learning process, namely in the experimental class treated with a guided note taking learning model and the control class treated with a conventional learning model. After different treatments were carried out between the two classes. The researcher gave a post-test and pre-test with the same questions consisting of 25 multiple choice questions.

Based on the table of normality test results, both pre-test for the experimental and control classes in the pre-test and post-test showed the results of the Kolmogorov Smirnov normality test, namely the sig value in the control and experimental classes, all four were > 0.05. Based on the homogeneity table, it can be concluded that the Sig Based On Mean is 0.470 > 0.05 so that it can apply significant homogeneously.

Based on the table of hypothesis test results, the sig. value (2 tailed) is 0.000 < 0.005, so it can be concluded that there is a difference in the average learning outcomes of students for the post-test of the control class and the post-test of the experiment (Guided Note Taking Learning Model). It can be concluded that the significant value < 0.005 then Ha is accepted.

Based on the results of the N-Gain test calculation, it shows that the average N-Gain value for the experimental class is 72.9746 or 73%, including the fairly effective category, then with a minimum N-Gain value of 48.00 or 48% and a maximum of 90.48 or 91%. While the average N-Gain value for the control class is 42.7428 or 43%, including the fairly effective category, then with a minimum N-Gain value of 0.00 or 0% and a maximum of 85.71 or 86%.

So it can be concluded that the use of the guided note taking learning model is an effective category for improving students' learning outcomes on the material on the periodic system of elements in class X of SMA Swasta Kampus Nommensen Pematang Siantar.

The difference between previous researchers and what I made is: Previous researchers entitled the influence of interactive learning models based on macromedia flash 8 on student learning outcomes while what I made was entitled the influence of guided note taking learning models using macromedia flash 8 on student chemistry

learning outcomes on the material of the periodic system of elements of class X of SMA Swasta Kampus Nommensen Pematang Siantar.

CONCLUSION

Based on the research results obtained, it can be concluded that: The effect of guided note taking learning model using macromedia flash 8 on student learning outcomes in the material of the periodic system of elements in class X of SMA Swasta Kampus Nommensen Pematang Siantar. From the test data, student learning outcomes achieved an average value of the N-Gain test for the experiment and control, the results of the N-Gain test calculation showed that the average value of N-Gain for the experimental class was 72.9746 or 73%, including the effective category. While the average value of N-Gain for the control class was 42.7428 or 43%, including the fairly effective category. This proves that the experimental class has increased learning outcomes after being given treatment with the guided note taking learning model compared to the control class which was not given treatment with the guided note taking learning model but provided a conventional learning model.

REFERENCES

Agustini, R., Herlindyah, H., Juliana, R., Rosmaimuna, R., Gaja, R. H., & Yuisman, D. (2022). Penerapan Model Pembelajaran Talking Stick Berbantuan Media Papan Flanel Untuk Meningkatkan Kemampuan Mengenal Huruf Anak Pada Raudatul Athfal Arafah. *Al-Muaddib: Jurnal Ilmu-Ilmu Sosial Dan Keislaman*, 7(1), 99–144.

Andrisa. (2007). *Macromedia Flash 8*. Pt. Elex Media Komputindo.

Batubara, N., Yanti, F., & Pane, E. P. (2023). Pengaruh Model Pembelajaran Talking Stick Dengan Berbantuan Media Question Card Terhadap Minat Dan Hasil Belajar Peserta Didik Pada Materi Sistem Periodik Unsur Di Kelas X Sma Negeri 3 Pematang Siantar. *Innovative: Journal Of Social Science Research*, 3(6), 9158–9171.

Ferdian, F., & Arifin, Z. (2019). Penerapan Metode Artikulasi Sebagai Upaya Peningkatan Pemahaman Siswa: *El Bidayah: Journal Of Islamic Elementary Education*, 1(1), 17–30. Https://Doi.Org/10.33367/Jiee.V1i1.678

Hasanah, L., & Nurhasanah, A. (2020). Kemampuan Membaca Permulaan Melalui Penggunaan Media Papan Flanel Anak Usia 4-5 Tahun. *Jurnal Paud Agapedia*, 2(1), 12–22.

Hastuti, H. W., Baedowi, S., & Mushafanah, Q. (2019). Keefektifan Model Pembelajaran Numbered Heads Together Berbantu Media Panelpa (Papan Flanel Ipa) Terhadap Hasil Belajar. *International Journal Of Elementary Education*, 3(2), 108–115. Https://Doi.Org/Https://Doi.Org/10.23887/Ijee.V3i2.18513

Jusrianto, J., Zahir, A., & Muthmainnah, A. (2019). Pembuatan Aplikasi Media Pembelajaran Pendidikan Jasmani Dan Olahraga Berbasis Android Pada Sma Negeri

5 Palopo. *Prosiding Semantik*, 2(1), 73–83.

Nurhaedah, N., & Nur, N. (2022). Penerapan Model Pembelajaran Kooperatif Tipe Artikulasi Untuk Meningkatkan Keterampilan Berbicara Siswa Kelas V Upt Spf Sd Negeri Sipala Ii Kecamatan Biringkanaya Kota Makassar. *Global Journal Teaching Professional*, 1(3), 330–337.

Nurhayati, E. (2020). Eksperimentasi Model Pembelajaran Kooperatif Tipe Artikulasi Dan Tipe Stad Terhadap Hasil Belajar Matematika Siswa Kelas Vii Smp N 3 Kajen. *Delta: Jurnal Ilmiah Pendidikan Matematika*, 4(1), 25–34. Https://Doi.Org/Http://Dx.Doi.Org/10.31941/Delta.V4i1.1020

Pane, E. P., Manurung, H. M., Simangunsong, A. D., Mobo, F. D., Siahaan, T. M., & Manurung, S. (2022). The Effect Of Stem-Based Learning Module On Students Learning Outcomes And Motivation In General Chemistry Courses. *Ijeca (International Journal Of Education And Curriculum Application)*, 5(2), 211–218.

Riani, A., Utomo, E., & Nuraini, S. (2021). Development Of Local Wisdom Augmented Reality (Ar) Media In Elementary Schools. *International Journal Of Multicultural And Multireligious Understanding*, 8(6), 154–162. Https://Doi.Org/Http://Dx.Doi.Org/10.18415/Ijmmu.V8i6.2735

Rifqi Ardhiansyah, G., Surya Hutama, F., Ayu Puspitaningrum, D., Zahroul Fitriyah, C., & Aguk Wardoyo, A. (2023). Pengaruh Metode Guided Note-Taking Berbantuan Powerpoint Interaktif Terhadap Hasil Belajar Peserta Didik Kelas V Sekolah Dasar. *Jurnal Gentala Pendidikan Dasar*, 8(2), 238–252. Https://Doi.Org/10.22437/Gentala.V8i2.27190

Sasmitha, W. (2022). Desain Video Pembelajaran Blended Learning Mata Kuliah. *Jurnal Patriot*, 4(2), 170–181. Https://Doi.Org/10.24036/Patriot.V4i2.842

Simangunsong, A. D. (2023). Implementation Of The Problem Based Learning (Pbl) Learning Model To Improve Skills Creative Thinking Of Students On The Material Coligative Properties Of Solutions. *Edunesia: Jurnal Ilmiah Pendidikan*, 4(2), 483–494. Https://Doi.Org/10.51276/Edu.V4i2.396

Sugiyono. (2023). *Metode Pnelitian Pendidikan*. Alfabeta.

Ulfah, Ulfah And Arifudin, O. (2021). Pengaruh Aspek Kognitif, Afektif, Dan Psikomotor Terhadap Hasil Belajar Peserta Didik. *Jurnal Al-Amar: Ekonomi Syariah, Perbankan Syariah, Agama Islam, Manajemen Dan Pendidikan*, 2, 1–9.

Wahyu Bagia Sulfemi. (2019). Model Pembelajaran Kooperatif Mind Mapping Berbantu Audio Visual Dalam Meningkatkan Minat, Motivasi Dan Hasil Belajar Ips. *Jurnal Pendidikan Ilmu Pengetahuan Sosial Indonesia*, 4, 13–19.

Wijaksono, A. S., Subarinah, S., Hikmah, N., & Azmi, S. (2022). Efektivitas Model Pembelajaran Kooperatif Tipe Artikulasi Terhadap Hasil Belajar Matematika Kelas Viii Smp. *Griya Journal Of Mathematics Education And Application*, 2(2), 567–576. Https://Doi.Org/10.29303/Griya.V2i2.187

Yastiari, I. D. M. (2019). Penerapan Model Pembelajaran Artikulasi Dengan Media Gambar Guna Meningkatkan Prestasi Belajar Ipa. *International Journal Of Elementary Education*,

3(4), 431. Https://Doi.Org/10.23887/Ijee.V3i4.21748

Yuliah, E. (2021). Optimalisasi Program Pengembangan Keprofesian Berkelanjutan Untuk
Meningkatkan Kinerja Guru Pendidikan Agama Islam. *Jurnal At-Tadbir : Media Hukum
Dan Pendidikan*, *31*(2), 120–138. Https://Doi.Org/10.52030/Attadbir.V31i2.105