Vol. 2 No. 3 Edisi Juli 2025 E. ISSN. 3032-2472
Multidisciplinary Indonesian Center Journal (MICJO)
Journal page is available to
https://e-jurnal.jurnalcenter.com/index.php/micjo
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THE EFFECT OF STRUCTURED ASSIGNMENTS USING THE NUMBERED HEADS TOGETHER (NHT) COOPERATIVE LEARNING MODEL ON STUDENT LEARNING OUTCOMES AT STATE SENIOR HIGH SCHOOL 5, WEST SERAM

PENGARUH PEMBERIAN TUGAS TERSTRUKTUR DENGAN MODEL PEMBELAJARAN KOOPERATIF TIPE NUMBERED HEADS TOGETHER (NHT) TERHADAP HASIL BELAJAR SISWA SMA NEGERI 5 SERAM BAGIAN BARAT

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DOI: https://doi.org/10.62567/micjo.v2i3.1255

Abstract

The purpose of this study was to describe how structured tasks from the Numbered Heads Together (NHT) cooperative learning model impacted the learning outcomes of grade X students at SMA Negeri 5 Seram Bagian Barat in the 2024–2025 academic year. This study was experimental and only used a control group for the posttest. This study involved 75 students from three classes at SMA Negeri 5 Seram Bagian Barat. Class X2 (experimental class), consisting of 25 students, and class X3 (control class) were included in the randomly selected sample. According to statistical analysis of the data, the control class obtained a score of 65.60 with a standard deviation of 13.25, while the experimental class obtained a score of 75.00 with a standard deviation of 10.40. The completeness of the experimental class was 84.00%, while the control class was 44.00%. Based on the results of the study, the structured task approach influenced the learning outcomes of grade X students of SMA Negeri 5 Seram Bagian Barat on the topic of chemical bonds.

Keywords: Number Heads Together (NHT) Model, Structured Tasks, Learning Outcomes

Abstrak

Tujuan dari penelitian ini adalah untuk mendeskripsikan bagaimana tugas-tugas terorganisir dari model pembelajaran kooperatif Numbered Heads Together (NHT) berdampak pada hasil belajar siswa kelas X di SMA Negeri 5 Seram Bagian Barat pada tahun ajaran 2024–2025. Penelitian ini bersifat eksperimental dan hanya menggunakan kelompok kontrol untuk posttest. Penelitian ini melibatkan 75 siswa dari tiga kelas di SMA Negeri 5 Seram Bagian Barat. Kelas X2 (kelas eksperimen), yang terdiri dari 25 siswa, dan kelas X3 (kelas kontrol) dimasukkan dalam sampel yang dipilih secara acak. Menurut analisis statistik data, kelas kontrol mendapat skor 65,60 dengan deviasi standar 13,25, sedangkan kelas eksperimen mendapat skor 75,00 dengan deviasi standar 10,40. Ketuntasan kelas eksperimen

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adalah 84,00%, sedangkan kelas kontrol adalah 44,00%. Berdasarkan hasil penelitian, pendekatan tugas terstruktur memberikan pengaruh terhadap hasil belajar siswa kelas X SMA Negeri 5 Seram Bagian Barat pada materi ikatan kimia.

Kata Kunci : Model Number Heads Together (NHT), Tugas Terstruktur , Hasil Belajar.

1. INTRODUCTION

Of course, there are guidelines and foundations for the system implemented in education today. The foundation of this education system is contained in Law Number 20 of 2023 concerning the National Education System. Providing an environment and learning process that allows students to actively build their capacity to face changes and challenges in a way that protects their identity is a directed and organized effort in education (E. Rachmadio et al., 2024).

For educators, efforts to improve educational standards both in terms of procedures and results are also very important. One such effort involves teaching with an emphasis on helping students reach their full potential to produce positive learning outcomes (R. E. Rachmadio & Nugraha, 2025).

Researchers interviewed students at SMA Negeri 5, West Seram, and found that some of them felt that chemistry lessons were boring and difficult to understand, preventing them from actively participating in the learning process. Without improving their own skills, students just listen to the teacher convey the topic and memorize the ideas they have learned (Amir & Nugraha, 2023). Student test scores in chemistry subjects, especially in chemical bonding subjects, show that this problem causes poor student performance. One solution to this problem is to improve learning outcomes by utilizing appropriate learning models and strategies (Syahlan & Nugraha, 2023).

One of these cooperative learning approaches is Numbered Heads Together (NHT). Based on their cognitive abilities, each student is assigned a number (numbered phase) by the NHT model, which then divides them into groups of four to six students. Then, a question and answer session begins, where students work together to understand the lesson material or answer questions. To show the results of their work in front of the class, each group member is selected randomly (response phase). Each student must be ready to understand what they have learned during this procedure because each group member has the same opportunity to receive a number (Syahlan et al., 2025).

Chemically bonded materials can benefit from applying the advantages of the NHT model. Students who study this material must actively participate in understanding the ideas and practice a lot. This material requires logic (Faridah et al., 2023), especially in terms of distinguishing between metallic, covalent and ionic bonds. By actively integrating students in learning, encouraging them to voice their thoughts, giving and receiving information, and encouraging collaboration in learning groups, the NHT model highlights a unique framework intended to influence students' interaction patterns and increase academic mastery (Wirati et al., 2024).

One of the shortcomings of the NHT model is that not all students in the group will be called to appear, so this can be overcome by applying other learning methods, namely in the form of giving structured assignments to students. Students who have not yet appeared are encouraged to play an active role in the next learning process through structured assignments given at the previous meeting. However, in this case, it also requires other students to be ready

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and responsible for their assignments because later they will be randomly selected based on the number of members of the previous group to work in front of the class. Means every Students will try to learn their assignments (understand the learning material). The structured assignments referred to here are assignments from teachers to students in the form of questions in the form of homework assignments, which are given at the end of each meeting. These structured tasks will be discussed at the next meeting.

Structured assignments are mandatory assignments for students that are given in a planned and systematic manner at each meeting and arranged or arranged based on sub-subs of the material in order to achieve learning objectives and are carried out outside class hours. Giving structured assignments aims to strengthen what has been obtained or learned. Students' perspectives can be broadened and their understanding of an idea can be deepened with this approach. As part of learning activities, students have to practice a lot by completing exercises or practical exercises. Regular practice fosters a student's innate desire to achieve certain goals and grow as an individual.

Understanding and completing structured assignments effectively can help students form habits that will improve their learning outcomes. Feedback is needed to determine students' strengths and weaknesses in completing assignments because assignments given continuously will be in vain if they are just given casually. Students are encouraged to repeat their comments when receiving positive feedback as it acts as an incentive and can make the experience enjoyable

Based on the description above, this research will examine how the learning outcomes of class X students at SMA Negeri 5 Seram Barat are influenced by structured activities in the Numbered Heads Together (NHT) cooperative learning paradigm. This research aims to find out how student learning outcomes are influenced by structured activities in the Numbered Heads Together (NHT) cooperative learning paradigm.

2. RESEARCH METHOD

This research is experimental (Amelia et al., 2023). The control group design of this research is only a posttest. On March 10 2025, this research was carried out at SMA Negeri 5 Seram Barat. In the odd semester of the 2024–2025 academic year, class X students of SMA Negeri 5 Seram Barat participated in this research. Fifty students were divided into two classes. They were distributed randomly into three classes, each consisting of 75 students. Class X2, consisting of 25 students as the experimental class, and class X3, consisting of 25 students as the control class, each became the sample for this research. The direct random technique of random sampling from the population was used to determine the sample. To ensure learning outcomes (cognitive, affective and psychomotor), a multiple choice test with 20 questions was used (Nugraha, 2025). Both item validity and test content validity were examined. The questions, covering chemical bonding, will be presented after all learning procedures are completed. Each student's score will be tested using descriptive and inferential statistical analysis techniques. Prior to statistical analysis, the structured assignment technique in the Numbered Heads Together (NHT) cooperative learning model was evaluated to see whether the technique had a significant effect on the learning outcomes of class X students at

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SMA Negeri 5 Seram Barat. Before testing the hypothesis, homogeneity and normality tests are carried out.

3. RESULTS AND DISCUSSION

The learning outcomes of class Table 1 shows findings of descriptive statistical analysis.

Table 1. Descriptive statistics of learning outcomes for the experimental class and control class.

Descriptive Statistics	Statistical Value	
	Experimental Class	Control Class
sample	25	25
The highest score	85	85
Teendah Value	50	40
Average value	75	65,60
Standard Deviation	10.4	13.25

"Results of a statistical study on student learning outcomes in the Numbered Heads Together (NHT) cooperative learning model taught using a structured assignment approach. In the Numbered Heads Together (NHT) cooperative learning paradigm, the experimental class outperformed the control class in terms of scores when a structured assignment approach was used. Criteria for students' learning completeness at West Seram State High School 5 on the topic of chemical bonds can be used to categorize the scores obtained by the experimental class and the control class." For chemistry subjects in class

Table 2. Completeness of Learning Results for Experimental Class and Control Class

Value Criteria	Value Frequency	Experimental Class		Control Class	
		Frequency	Percentage	Frequency	Percentage
Complete	≥ 70	21	84%	11	44%
Incomplete	≤ 70	4	16%	14	50%
Amount		25	100%	25	100%

The frequency of completion of student learning outcomes in the experimental and control classes is very different, as can be seen in Table 3 above. As can be shown, 21 of the 25 students in the experimental class completed their chemistry course, for a completion rate of 84%. In contrast, 11 students in the control group completed their chemistry course, for a completion rate of 44.00%.

Table 3. Attitude values in the experimental class and control class

Class	Student Attitude Learning Outcomes					
	Discipline	Courtesy	Honest	Liveliness	Cooperation	Responsibility

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Experimental Class	18.61	17.48	20.77	16.88	16.45	17.74
Control Class	15.62	17.5	16.25	16.56	16.87	17.18

Considering that the results of the Kolmogorov-Smirnov normality test show that the variables X (Structured Tasks) and Y (Learning Outcomes) have Asymp Sig values. (2-tailed) are 200 > 0.05 and 200 > 0.05 respectively, so it can be concluded that the two variables are normally distributed. There is a linear relationship between variables X (Structured Assignment) and Y (Learning Outcomes), according to the results of the linearity test, which shows a Sig. deviation from linearity is 0.823 > 0.05. Meanwhile, Ftable shows that the Fcount value is 0.666 < Ftable 2.09, which shows that there is a linear relationship between variables X (Structured Assignment) and Y (Learning Outcomes), according to the results of the linearity test. Student learning outcomes are influenced when they are given organized tasks, as seen by the t-test findings, which reveal a Sig (2-tailed) value of 0.011 <0.05 after giving structured tasks. The results of the F-test from the treatment of structured assignments on learning outcomes can be considered significant with a Sig (2-tailed) value of 0.011 <0.05. In contrast, giving structured assignments based on learning objectives produces a higher F value (7.545) than the table F value (1.708). It has been verified that the structured task method of the Numbered Heads

The purpose of this research is "to find out how structured assignment assignments in the NHT cooperative learning paradigm impact student learning outcomes. The NHT learning methodology is applied consistently in both classes, the experimental class is given structured assignments in the form of practice questions at home at the end of each subject in each meeting and will be discussed or given feedback at the next meeting. Meanwhile, the control class is given no structured assignments.

The experimental class outperformed the control class in terms of learning outcomes, as shown by the results of descriptive statistical analysis in Table 1. The structured homework assignments given at the end of each course were the cause of this difference. Providing this structured assignment will give students the opportunity to repeat themselves so that they strengthen their understanding of the material that has been taught and can have a positive impact on learning outcomes. Apart from that, giving structured assignments can also train students to take advantage of free time, foster a sense of responsibility and train students to learn independently because they try to find the right ways to complete tasks themselves.

Combining the NHT cooperative learning model with structured assignment techniques can improve student learning outcomes. Each student in the group is assigned a member number during the numbering phase, which is based on their cognitive level. This is done so that teachers can modify questions to suit students (allowing them to answer correctly) and increase their confidence because every student is unique. When the teacher presents material, students will try to pay attention to the teacher's explanation for each sub-sub-material because each part is interconnected and it is also ensured that there will be questions given for each sub-sub-material (questioning phase), especially practice questions in structured assignments. As evidenced by the observation sheet of student learning activities and the implementation of the learning process, this of course has a positive impact on student participation in the learning process. Because everyone in the group gets an equal opportunity to express (and take responsibility for their group's presentation), the "heads together" phase

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ensures that everyone is working together andSupport each other in understanding the discussion material. In the answering phase the teacher will call a certain member number to answer the question. Here, the same member number in each group must be ready to appear.

Based on the structured assignment scores obtained at each meeting, it can be seen that students' structured assignment scores are directly proportional to their post-test scores, where students whose average score on structured assignments is high has an effect on the post-test scores that are also high and vice versa. This shows that giving scheduled assignments in the NHT cooperative learning model improves student learning outcomes. Due to a lack of interest in the learning process, many students in the NHT cooperative learning model do not complete their learning activities when no assignments are given. Students only listen and take notes while studying. Due to their lack of experience with practice questions, some students feel overwhelmed when given the opportunity to do them, and others still cannot fully understand the material they are studying.

Learning outcome data for the two courses were found to be homogeneous and normally distributed using interference statistical analysis. As a result, the data is tested for the hypothesis, which results in acceptance of H1 and rejection of H0. This shows how the tasks planned in the NHT cooperative learning model improve student learning outcomes.

Student learning outcomes are influenced by various elements, not only the availability of structured assignments, but also IQ, environment, psychology, and other aspects. This is proven by the existence of several students who scored well on their structured assignments and were active in the learning process, but who got poor final test scores.

4. CONCLUSION

Based on the research I have carried out and the resulting analysis data, several statements can be concluded regarding the general picture in providing structured assignment activities to students in the class X chemical bond subject at SMA Negeri 5 Seram Barat. In the process, the activities carried out in providing structured assignments in improving students' learning outcomes in the process are very good. The process produced by students in the Chemical Bonds subject shows a significant influence..

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