Jurnal Inovasi Teknologi Pendidikan
Volume 10, No. 3, September 2023 (255-264)
Online: http://journal.uny.ac.id/index.php/jitp

Improving integrated thematic learning outcomes using the numbered head together cooperative mode

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ARTICLE INFO

Article History
Received:
14 July 2023;
Revised:
2 August 2023;
Accepted:
11 August 2023;
Available online:
30 September 2023.

Keywords
Learning outcomes;
Integrated thematic;
Numbered head together (NHT)

ABSTRACT

This study used a classroom action research method by applying qualitative and quantitative approaches carried out in 2 cycles through the stages of planning, implementation, observation, and reflection. This study aimed to observe the improvement of student learning outcomes in class VB SDN 13 Kuranji by applying the Numbered Head Together (NHT) Model. The research data obtained were analyzed using qualitative and quantitative techniques with the instruments of the Teaching Implementation Plan (RPP) assessment sheet, teacher and learner activity observation sheets, evaluation question sheets, attitude journals, and skill rubrics. Teachers and students became the subjects of this study. According to the results of the study, there was an increase in each cycle. In the lesson plan assessment in Cycle I, the score was 85%, and 95% in Cycle II. Regarding teacher activity, the value reached 84.3% in Cycle I and 93.7% in Cycle II, while the learner aspect in Cycle I was 83% to 94% in Cycle II. In addition, students' learning outcomes increased from 78.4 in Cycle I to 87 in Cycle II. The results showed improved student learning outcomes after applying the Numbered Head Together model. The improvement is also seen in the lesson plan and the implementation of learning regarding teachers and students.

How to cite:
Aulia, F. & Lena, M.S. (2023). Improving integrated thematic learning outcomes using the numbered head together cooperative mode. *Jurnal Inovasi Teknologi Pendidikan*, *10*(3), 255-264.
https://doi.org/10.21831/jitp.v10i3.60057

INTRODUCTION

Curriculum 2013 in primary schools combines several subjects into a theme as the main focus or integrated theme. Integrated thematic learning makes a theme a binding concept for various materials or competencies to integrate knowledge and skills (Artapati & Budiningsih, 2017). The application of integrated thematic learning aims to provide opportunities for students to become the main actors or centers of learning to build concepts that are interconnected with other concepts that are already understood so that they can understand the problems that exist in the surrounding environment and can use the information obtained meaningfully (Tirtoni, 2018). Integrated thematic learning aims to support the achievement of learner-learning outcomes aligned with specific competencies, namely attitude, knowledge, and skills competencies. The success of achieving these

goals can be seen from the results of learning achievements obtained after going through the learning procedures that have been determined (Fauzana & Lena, 2020). Substantially, learning can be defined as changes in individuals who learn from thoughts and behavior regarding attitudes, knowledge, and skills after following a series of learning processes (Dahuri & Desyandri, 2021).

The ideal integrated thematic learning begins with developing a Learning Implementation Plan that follows the correct writing rules and their components. In implementing learning, wherever possible, teachers create good and pleasant learning conditions to attract attention and make students actively involved and able to think critically and creatively to make learning meaningful. Furthermore, in conducting learning assessments, teachers are guided by the Learning Implementation Plan, designed to determine the objectives of the assessment and make grids and assessment instruments (Yuza & Reinita, 2021). Furthermore, the characteristics of integrated thematic learning, among others, are that students become the center of learning, provide authentic experiences, the separation between subjects is not too clear and flexible, the learning process presents concepts from several subjects, adapts to the interests and needs of students (Amelia, 2019).

Based on reality, implementing thematic learning in the field has yet to be maximized. According to the results of observations in class VB SDN 13 Kuranji Padang City on September 23-24, 2022, several obstacles were still found. These obstacles are reviewed from the Learning Implementation Plan, the learning implementation aspect, and the student learning outcomes. 1) In the Learning Implementation Plan, indicators must still follow the guidelines for formulating correct indicators. The Operational Verbs (KKO) formulated by the teacher have decreased the cognitive level. Then, there is also no assessment grid for assessing the knowledge aspect. 2) In the implementation of learning, several obstacles were still found, including a) the teacher is still the center of learning where the teacher dominates the learning, b) when moving the material, the teacher still mentions the identity of the subject so that it seems that there is still a separation between subjects, c) teachers do not develop learning resources and materials or only focus on teacher and student books, d) in high grades teachers still tend to use them and students, d) in high grades teachers still tend to use a scientific approach, e) the Learning Implementation Plan does not thoroughly guide the implementation of learning, f) rarely use learning media due to time constraints.

Some of the above obstacles affect students, such as: 1) quickly feeling bored because of monotonous learning, so they tend to be passive in learning. 2) Students' thinking is still compartmentalized due to the separation of subjects, 3) Most students still do not dare to express their opinions, 4) students are rarely allowed to learn in groups, 5) students are less enthusiastic because of limitations in using learning media, 6) as well as the learning outcomes of students who have not reached the predetermined Minimum Completeness Criteria (KKM). It can be seen from the results of the Midterm Assessment that 1 out of 20 people, only eight or 40%, managed to reach the KKM.

Looking at the problems, it is necessary to make an innovation in carrying out learning, one of which is by applying a model in learning that is innovative and adapted to the characteristics of students. Applying innovative learning models following learning materials indirectly impacts students' understanding and learning achievement. Teachers are required to be good at sorting and choosing learning models that are tailored to the material and characteristics of students, as well as making students the center of learning so that they are motivated to be serious, creative, and enthusiastic in learning (Afriyanti & Hamimah, 2022). However, the learning model used by the teacher is not suitable for the material and characteristics of the learners. In that case, this can hurt the achievement of learning outcomes in line with the predetermined learning objectives (Wulan & Reinita, 2021).

Based on what has been described above, researchers in this study chose the Numbered Head Together (NHT) type cooperative learning model to be applied in the learning process to improve students' learning achievement. The Numbered Head Together model is a learning model that allows collaboration between students in small groups and builds on each other's ideas (Haerullah & Hasan, 2017). In addition, the Numbered Head Together model is also characterized as a learning model that aims to improve students' understanding of the subject matter through intense interaction to learn together in groups with the characteristic of using head numbers (Leonard et al., 2019). The application of the Numbered Head Together model in learning will motivate students to actively

learn, foster an attitude of cooperation, foster a sense of responsibility, be required to have the same understanding when working on their group assignments, and have the courage to convey their ideas to others (Kholis, 2017). In its implementation, this Numbered Head Together model forms students into several small groups. The teacher will call one of the head numbers, and the number called will represent the group at the front of the class without any notification of which head number will be called (Majid, 2022). In its application, the Numbered Head Together model is designed as a pattern of interaction between students and forms students into several small groups as a means of completing tasks that will be thought of together and answer the task according to the head number that each group gets (Septrima & Lena, 2021).

This Numbered Head Together model also has advantages, namely: (a) making it easier for students to understand learning materials, (b) students trained to explore their knowledge, (c) creating interaction between students in completing tasks, (d) creating peer tutor activities where less intelligent students can learn from their clever friends, (e) creating an attitude of cooperation in solving problems (Dadri et al., 2019). The Numbered Head Together model also has the potential to make students play an active role during learning and create a fun atmosphere by learning in groups by involving all students (Petriza & Eliyasni, 2020).

Learning that is carried out using the Numbered Head Together model is expected to improve students' conceptual understanding of the material. The novelty of this research is the use of the Numbered Head Together model in learning that combines the use of PowerPoint technology in learning to make learning less tedious and can focus the attention of students because the subject matter explained through PowerPoint shows will attract the attention of students more than the explanation of material using only words (Humairah, 2022). By combining technology and the Numbered Head Together model, this research can provide a new alternative to improve the quality of learning. This research emphasizes the importance of using a suitable learning model in the learning process to achieve maximum learning outcomes.

The success of the Numbered Head Together (NHT) model in improving learning outcomes is reinforced by research conducted by Desyandri and Adha (2022) that there was an increase in thematic learning outcomes in class VB SDN 18 Koto Hilalang after the application of the Numbered Head Together model in the learning process.

Based on the description presented, this study aims to determine the improvement of integrated thematic learning outcomes in students in class VB SDN 13 Kuranji using the Numbered Head Together model. This objective involves three aspects: learning planning, learning implementation from the perspective of teachers and students, and learning outcomes. This research contributes to educators implementing the Numbered Head Together model to improve student learning outcomes.

METHOD

This research used the Classroom Action Research (CAR) method, which combined qualitative and quantitative approaches. Classroom Action Research is research conducted collaboratively and sustainably to improve learning practices (Asdar, 2018). Classroom Action Research aims to improve the quality and learning outcomes by improving teaching methods (Fauzana & Lena, 2020). The research was carried out based on the Classroom Action Research cycle, which refers to the model developed by Kemmis and MC Taggart where the research procedure begins with the planning stage, secondly implementation, observation, and ends with reflection activities carried out in at least two cycles (Rahayu & Lena, 2021).

The research was conducted in class VB SDN 13 Kuranji Padang City, in the second semester of the 2022/2023 school year, involving 19 students consisting of 9 boys and ten girls. This study involved researchers as practitioners and teachers as observers. The research took place over two cycles. Cycle I was carried out in 2 meetings on Wednesday, January 11, 2023, and Thursday, January 12, 2023. While cycle II consisted of one meeting on Wednesday, January 18, 2023.

The data source in this study was obtained during the learning process, including the Learning Implementation Plan, the implementation of learning in terms of teachers and students, and the assessment of learning outcomes. The research data came from teachers and class VB SD Negeri 13

Kuranji Padang City students, who became the research subject. In the aspect of the Learning Implementation Plan, the document analysis technique was used. The instrument used was a Learning Implementation Plan assessment sheet using indicators adjusted to the Learning Implementation Plan components. Furthermore, in the aspect of learning implementation, using an observation sheet instrument to observe the course of learning in terms of teacher activities and participant activities with indicators tailored to the steps of the Numbered Head Together model in the introduction, core, and closing stages. Based on the observation sheet, the observer directly saw what happened during the learning process while giving a checkmark in the designated column. The observer observed what happened or what appeared and did not appear during learning. Furthermore, the aspect of learning outcomes used an evaluation question sheet consisting of 10 items in multiple-choice questions covering the content of the Indonesian language, social studies, and civics—as well as attitude journals and skill rubrics.

The data analysis technique applied in this research combined qualitative and quantitative techniques. Qualitative data analysis uses analysis techniques referred to as the Miles and Huberman model, where the data obtained is initially reduced, then presented, and finally, conclusions are drawn (Farhana et al., 2019). The data was obtained from the assessment of the Learning Implementation Plan and the results of observations of the implementation of learning from the perspective of students and teachers, as well as the results of the attitude journal. Meanwhile, quantitative analysis was used to measure learning outcomes from knowledge and skills using the calculation formula explained in Formula 1 (Kemdikbud, 2018). The range of success predicates can be observed in Table 1.

$$P = \frac{f}{n} \times 100\% \quad (1)$$

Table 1. Range of Success Predicates

No.	Predicate	Rated
1	A (Very Good)	$93 < A \leq 100$
2	B (Good)	$86 < B \leq 93$
3	C (Enough)	$80 < C \leq 86$
4	D (Needs Guidance)	$D < 80$

RESULTS AND DISCUSSION

Results

This research was conducted for three sessions in 2 cycles. Based on the research, the results can be seen from 3 aspects: the aspects of the Learning Implementation Plan, the aspects of learning implementation in terms of teachers and students, and the aspect of obtaining learning outcomes by applying the Numbered Head Together model. This model consisted of several steps. The first step was to divide the learners into small groups and assign different head numbers within a group. Then, the teacher would give out tasks, and each group would collaborate to complete the task. After that, each group member would discuss and ensure that all group members understood the correct answer. The teacher would call a head number, and the member who had that number would report the results of their group discussion. Next, the members of other groups would comment on the report; then, the teacher would call a different number of heads. Moreover, it ended with a conclusion (Nourhasanah & Aslam, 2022). The research results can be described as follows:

Aspects of the Learning Implementation Plan

A learning Implementation Plan is a guideline containing the teacher's learning steps to achieve predetermined competencies (Juanda, 2019). Before conducting research, researchers designed a Learning Implementation Plan that was adjusted to the learning implemented by applying the Numbered Head Together model. The researcher also gave the Learning Implementation Plan assessment sheet to the observer to find the deficiencies, which would then be reflected or improved in the next cycle to obtain a good Learning Implementation Plan. This lesson plan assessment referred to the components that should be in a lesson plan. The components of the Learning Implementation Plan included 1) identity, 2) essential competencies and indicators, 3) learning objectives, 4)

materials, 5) models and methods, 6) media, 7) learning resources, 8) learning stages, and 9) assessment (Jaya, 2019). According to the observer's assessment of the Learning Implementation Plan devised by the researcher in each cycle, the scores can be seen in Table 2.

Table 2. Assessment Results of Learning Implementation Plan for Each Cycle

No.	Rated Aspect	Cycle I	Cycle II
1	Identity of Lesson Plan	4	4
2	Indicators	3.5	4
3	Learning Objective	4	4
4	Learning Materials	2	3
5	Learning Resources	3	3
6	Learning Media	3	4
7	Learning Model and Method	4	4
8	Learning Activities	3	4
9	Assessment Design	3.5	4
10	Lesson Plan Layout	4	4
	Total	**34**	**38**
	Percentage	**85%**	**95%**
	Qualification	**C**	**A**

The result shows in Table 2 that the Learning Implementation Plan assessment in each Cycle has improved. This Learning Implementation Plan assessment referred to the components that should be in a Learning Implementation Plan. In Cycle I, the Learning Implementation Plan design needed to be improved in Cycle II. Ten aspects were assessed from the lesson plan, each with four descriptors. Cycle I only fulfilled 34 of the 40 descriptors and scored 85% (C). Furthermore, in Cycle II, it could fulfill 38 out of 40 descriptors with a score of 95% (A). It indicated that the researcher had designed the Learning Implementation Plan well after conducting reflection activities with the teacher in the first Cycle. However, there were still shortcomings in selecting materials and learning resources that fulfilled only some of the required descriptors.

Aspects of learning implementation from the teacher's perspective

The learning implementation was based on the Learning Implementation Plan designed based on the steps of the Numbered Head Together model. The researcher provided an observation sheet related to the implementation of learning, starting with the introduction, core, and closing stages. Observers observed the implementation of learning by the researcher as a practitioner teacher. The purpose of this was to observe the suitability between the implementation and the design of the Learning Implementation Plan that had been made and to know what activities were carried out and activities that were not carried out. Observers observed the researcher as a practitioner teacher in implementing learning in each cycle in Table 3.

Table 3. Results of Observation of Learning Implementation of Teacher Aspects of Each Cycle

No.	Rated Aspect	Cycle I	Cycle II
1	Preliminary Activity	3	4
2	Step 1: Students are Divided Into Groups and Assigned Head Numbers	3.5	4
3	Step 2: The teacher gives the task, and each group works on it	2.5	3
4	Step 3: Students discuss and unify opinions and ensure that each group member knows the answer	4	4
5	Step 4: The Teacher Called One Number, and The Number Called Reported The Results of Their Group Discussion	4	4
6	Step 5: Members of Other Groups Give Responses, and The Teacher Calls Out Different Numbers	3.5	4
7	Step 6: Conclusion	3.5	4
8	Closing Activity	3	3
	Total	**27**	**30**
	Percentage	**84.3%**	**93.7%**
	Qualification	**C**	**A**

As presented in Table 3, there was an improvement in the implementation of learning from the teacher's aspect in each cycle. Based on Table 3, in Cycle I, a score of 27 out of 32 descriptors was obtained with a score of 84.3% (C). Then, in Cycle II, a score of 93.7% (A) was obtained, with a score of 30 out of 32 descriptors requested. The improvement was inseparable from the corrective efforts in cycle II, where the learning was adjusted to the learning steps in the Learning Implementation Plan. However, descriptors still had not appeared in the core activities of giving assignments and closing activities.

Aspects of learning implementation from the student's perspective

Aside from the teacher's aspect, the observer also observed the implementation of learning regarding students. The descriptors assessed in this aspect of students used the same descriptors as the observations on the teacher's aspect. Observations of student aspects in Cycle I and Cycle II are presented in Table 4 below.

Table 4. Results of Observations of Learning Implementation of Student Aspects of Each Cycle

No.	Rated Aspect	Cycle I	Cycle II
1	Preliminary Activity	3	4
2	Step 1: Students are Divided Into Groups and Assigned Head Numbers	3.5	4
3	Step 2: The Teacher Gives The Task, and Each Group Works On It	2.5	3
4	Step 3: Students Discuss and Unify Opinions and Ensure That Each Group Member Knows The Answer	4	4
5	Step 4: The Teacher Called One Number, and The Number Called reported The Results of Their Group Discussion	4	4
6	Step 5: Members of Other Groups Give Responses, and The Teacher Calls Out Different Numbers	3	4
7	Step 6: Conclusion	3.5	4
8	Closing Activity	3	3
	Total	26.5	30
	Percentage	82.8%	93.7%
	Qualification	C	A

As presented in Table 4, there was an improvement in the implementation of learning from the learners' aspect for each cycle. In the implementation of learning in Cycle I, there were differences in the scores obtained regarding teachers and students, even though they used the same descriptors. In Cycle I, a score of 26.5 out of 32 descriptors was obtained with a score of 82.8% (C), and the score increased in Cycle II, which was 93.7 (A) with a score of 30 out of 32 descriptors. The improvement in the quality of learning was due to the utilization of the Numbered Head Together model, which can motivate and make students more active and earnest when participating in learning activities (Desvianti et al., 2020).

Aspects of learning outcomes

Learning outcomes are the actual achievements of students in thinking and acting that can be measured and observed (Ananda & Abdillah, 2018). Based on the research, the student's learning outcomes after applying the Numbered Head Together model in the learning process in each cycle can be observed in Table 5.

Table 5. Learning Outcomes for Each Cycle

No.	Cycle	Average	Number of Students Who Completed	Percentage
1	Pre-cycle	73	8	42.1
2	Cycle I	81	12	63.1
3	Cycle II	87	16	84.2

The data recorded in Table 5 shows an improvement in the average score of students in each Cycle. In addition, there was an increase in the number of learners who exceeded the set minimum score limit. In the previous pre-cycle, the average score was still far from what was expected, where it had yet to reach the minimum completeness of 80. Only a small number of students (8 people) succeeded in getting scores exceeding the minimum score because the learning carried out had yet

to apply various models, such as the Numbered Head Together model. However, in Cycle I and Cycle II, there was an improvement in students' learning outcomes, which exceeded the minimum completeness score. Cycle I obtained a score of 81 with a percentage of 63.1%, and Cycle II obtained a score of 87 with a percentage of 84.2%.

Then, the learning outcomes of the skills aspect in Cycle I obtained an average of 78.8, and in Cycle II obtained an average of 86.4 with a percentage of completeness of 94.7%. In addition, there was an improvement in learners' attitudes. It could be seen in each Cycle. There was an improvement in the number of students who showed a positive attitude, and the number of students who showed a hostile attitude decreased. In Cycle I, there were five students whose attitudes stood out, 2 of whom carried out negative attitudes. Whereas in Cycle II, three people had a positive, prominent attitude. The results of the overall improvement can be seen in Figure 1.

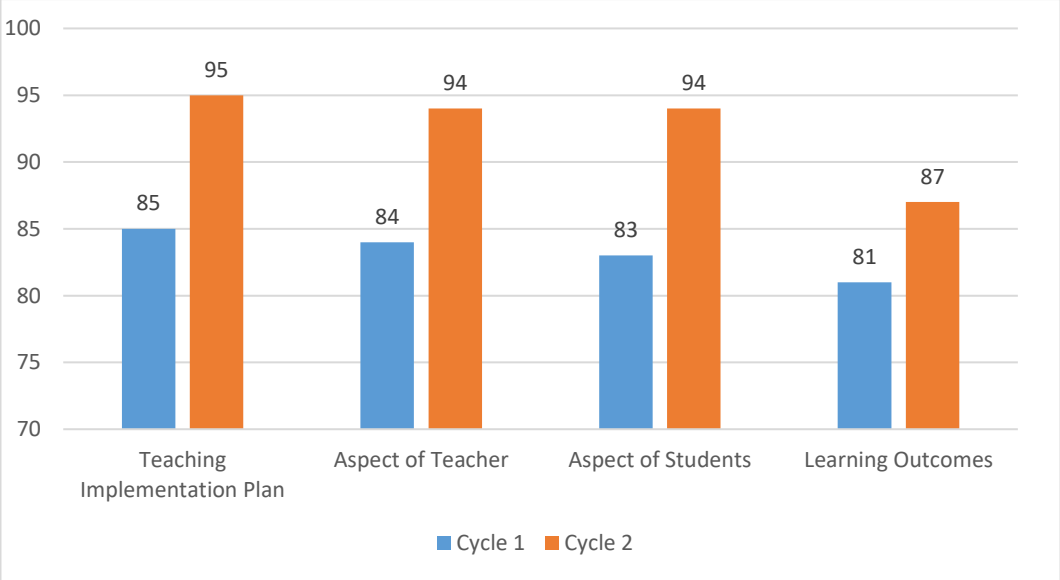

Figure 1. Average Improvement Results of Each Aspect

Figure 1 shows an average improvement in the aspects of the Learning Implementation Plan, teachers, students, and learning outcomes from Cycle I to Cycle II. This improvement indicated that the Numbered Head Together model positively impacted student learning outcomes. It could be seen from the average student score increased and the number of students who had yet to reach the minimum completeness value.

Discussion

Based on the findings of the research results, implementing the Numbered Head Together (NHT) model in the thematic learning process could improve the students' thematic learning outcomes, which could be reviewed from the research results in each cycle. From the research results, three things improved, including aspects of the Learning Implementation Plan, learning implementation in terms of teachers and students, and learning outcomes. This increase was due to reflection activities between researchers and observers after observing the shortcomings in implementing the first cycle. Based on the results of this reflection, improvement efforts had to be made in the next cycle to overcome the obstacles or shortcomings found during the implementation of cycle I. This result was in line with the findings of Hayyi & Indrawati (2021) and Desyandri and Adha (2022), which also show that implementing the Numbered Head Together model can improve students' learning outcomes.

The improvement in each cycle was also caused by applying the Numbered Head Together model that can train and prepare students thoroughly, produce productive discussions, train students to become peer tutors, encourage intense interaction between students, and prevent domination from

certain students (Nurbaiti et al., 2022). The Numbered Head Together model was also helpful in increasing students' involvement in sharing information about learning and working together to solve problems so it could increase a better understanding of the concept of integrated thematic learning (Widyawati et al., 2023). It was especially correct in the learning content of Bahasa Indonesia, IPS, and PPKn n class VB SDN 13 Kuranji on theme six learning "Panas dan Perpindahannya."

The improvement of learning outcomes was also inseparable from improvements in the design of the Learning Implementation Plan. The researcher tried to compile a Learning Implementation Plan adjusted to the components the Ministry of Education and Culture suggested. It could be seen in the Learning Implementation Plan assessment value in Cycle I of 85% (C); in Cycle II, it increased to 95% (A). Because indirectly, a well-designed Learning Implementation Plan could affect students' learning outcomes. Deviana and Kusumaningtyas (2019) mention that preparing a sound, systematic, and complete Learning Implementation Plan bridges teachers to realize excellent and successful learning. It can be proven through increased class average scores at each learning meeting.

Based on the research results, the implementation of learning had also been carried out well, which could be seen from the improvement of grades in each cycle. Regarding teachers, the score obtained in Cycle I was 84.3% (C) and increased to 93.7% (A) in Cycle II. Similarly, regarding students, the value obtained in Cycle I was 83% (C) and increased in Cycle II with a value of 94% (A). The quality and success of learning implementation could be measured by looking at the active participation of students during learning, where ideally, all or most students (80%) could be actively involved physically, mentally, and socially (Hayyi & Indrawati, 2021). To achieve this, as much as possible, the teacher must carry out learning that was adjusted to the steps in the Numbered Head Together model planned in the Learning Implementation Plan so all descriptors could be implemented in learning and get good results.

In the implementation of learning, students' activities were actively monitored using the observation sheet that had been provided so students were more serious about understanding the learning material. In assessing learning outcomes, researchers were guided by assessment sheets such as attitude journals, skill rubrics, and evaluation question sheets at the end of learning. In attitude assessment, it was seen as the most prominent attitude of students, whether it stood out in a positive or negative attitude during the activity using an attitude journal. Meanwhile, the improvement in knowledge and skill scores could be seen from the increase in the classical average, that during Cycle I, the score was 78.4, and during Cycle II, the score was 87.

Despite the improvement in learning outcomes that had been described above, there were still obstacles that occurred in its implementation. These obstacles were mostly found at the first meeting in cycle I. It could be seen from the design of the Learning Implementation Plan that it had yet to be maximized, and the implementation of learning was not entirely following the previously designed activities. It followed the research of Desyandri and Adha (2022), which explains that the first meeting on the Learning Implementation Plan and implementation needs to be improved in several aspects to achieve the expected goals optimally. The research was limited to one class and focused on thematic learning with Bahasa Indonesia, IPS, and PPKn content. Therefore, further research can involve more diverse subjects and research subjects to provide a more in-depth representation of the effectiveness of the Numbered Head Together model to improve learning outcomes.

CONCLUSION

According to the results and discussion previously presented, thematic learning using the Numbered Head Together (NHT) model in class VB SDN 13 Kuranji could improve students' overall learning outcomes. The improvement could be observed in acquiring the average score of students who mostly exceeded the minimum passing standard of 80, where the percentage of classical completeness reached 84.2% from the previous 42.1%. In addition, the improvement could be seen from the increase in the results of the assessment of the aspects of the lesson plan, the implementation aspects in terms of teachers and students at each stage, as well as the improvement of student learning outcomes in each learning cycle, both in the attitudes, knowledge and skills aspects. This improvement was also affected by the active involvement of teachers and students during learning in the classroom.

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