



## Increasing Interest and Learning Outcomes of Elementary School Students in Style Material Through Blended Learning

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<b>ABSTRACT</b> This study aims to increase student interest and learning outcomes in style material through a blended learning model for fourth grade students at SDIP Tunas Bangsa Banjarnegara. The research subjects were 24 grade IV students at SDIP Tunas Bangsa. This research method is a type of research that is collaborative classroom action research. This research was conducted in two cycles. Each cycle has 4 stages, namely planning, implementing, observing, and reflecting on actions. The indicator of success in this classroom action research is if the class average is $\geq 70$ with a classical completeness percentage of 85%. The results of the study showed that using the blended learning model in science lessons on Gaya could increase the interest and learning outcomes of fourth grade students at SDIP Tunas Bangsa Banjarnegara. It can be seen that the average interest score in cycle I was 64.9, increasing in cycle II to 81.22. While the score of student learning outcomes in cycle I was 63% complete KKM increased to 87% completed in cycle II. After implementing Blended Learning, the data on increasing interest in learning can significantly increase the interest and learning achievement of grade IV students at SDIP Tunas Bangsa, Banjarnegara district. <b>Keywords:</b> <i>Blended Learning, Learning Outcomes, Science.</i>			

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## INTRODUCTION

When compared to other industries, education is at the top. Education helps develop human resources, increase the nation's intelligence (DeNardo & Ruffell, 2019; Grigorescu dkk., 2020), and bring prosperity to all levels of society. The progress of a country can be determined using the phrase education.

According to Law Number 20 of 2003 concerning the National Education System (Ministry of National Education, 2003, p. 24), the aim of national education is to increase the success of students so that they become adults who believe, are pious (Yang dkk., 2020). God Almighty, exemplary, healthy, knowledgeable, capable, inventive, independent, democratic, and a good citizen. To improve or optimize the learning process, the goals mentioned above can be achieved. A wise place to prepare trusted resources is at

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the elementary school level. The results of education at the next level will be influenced by the effectiveness or quality of learning at the elementary school level. The next level of education will be stable and able to achieve its goals if the education provided in primary schools is of high quality.

The successful use of learning models will also be one of the most important factors in the learning process. The use of appropriate learning models will help support the achievement of learning objectives to the fullest and be able to provide a positive effect and an active response or response (Monro dkk., 2019; Sun dkk., 2020; Xiao & Jiang, 2019). The learning process does not only depend on the quality of the curriculum, education, and students. pupils to educational resources.

Following the emergence of the Covid 19 outbreak in several regions of the world, the education system began to look for new approaches in teaching and learning activities. In addition, the Minister of Education and Culture issued Circular No. 4 of 2020, which calls for all activities in educational institutions to be separated and all materials provided at each student's home (Isah, 2019; Moore dkk., 2021). As a result, SDIP Tunas Bangsa uses a powerful teaching strategy, known as blended learning. According to research findings from Sari et al. (2022, p. 2), blended learning can be applied in elementary schools through offline or hybrid learning. There are many online platforms that can be used for online learning, including the learning house portal, Google Classroom, Edmodo, the web, Kipin School, and others.

Blended learning is a teaching method that combines traditional systems with a computer-based learning environment. The use of the internet in learning or what can be called E-Learning helps students learn from home in a pandemic. The advantages of the blended learning learning model are that learning can be more flexible, cost-effective and time-effective, interactive material, effective and efficient (Davani-Davari dkk., 2019; El-Naggar dkk., 2019; Yuan dkk., 2019). Blended learning is considered more effective for increasing student interest in learning because it allows students to learn not only from various types of e-books and books but also from face-to-face systems which can still be done via video conferencing to increase student enthusiasm and function as direct supervision to students. Hassan, 2022).

One of the teacher's responsibilities is to foster an environment in the classroom that can arouse students' interest and lead to better learning outcomes. According to Kamaluddin's research findings, teachers can play an important role in helping students reach their highest levels of motivation by focusing on the elements and aspects that influence them (Tran dkk., 2019; Tsalamandris dkk., 2019). To ensure that students feel comfortable, satisfied, and motivated to participate in the learning process, instructors must be able to choose the best techniques to foster a positive learning environment. The capacity to choose the best learning model must be available to teachers . Students will be bored with the information offered and it will be more difficult to understand if the learning model used is wrong. However, teachers often experience problems. Low learning achievement is caused because students are still not able to master or understand the subject matter. This was encountered by researchers when studying the second

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semester of Natural Sciences (IPA) courses in Class IV of SDIP Tunas Bangsa, Banjarnegara Regency on the Competency Standards for Understanding Style to Change the Motion and Shape of Objects (Banggur et al., 2018).

According to observations and findings of teacher interviews conducted on March 8 2021, teachers still rarely incorporate fun learning activities into the science learning process and instead only assign students to complete LKS (student worksheets), which makes students less enthusiastic about taking lessons (Hu dkk., 2019; Huang dkk., 2019; Yan dkk., 2019). learning and perceiving science as unpleasant, resulting in a lack of interest in learning and a lack of active questioning on the part of students. Out of a total of 25 students, 12 students showed complete learning students did not meet the Minimum Completeness Criteria (KKM) set, namely a value of 65 and above, and only 8 students (52.5%) had fulfilled the KKM.

Education is a deliberate effort to prepare students for their future jobs by mentoring, teaching, and/or training activities. The majority of field learning activities are still carried out in the old way. Students usually do nothing but sit there, listening, recording, and memorizing (Wang dkk., 2020). Due to the lack of active participation of students in learning activities, these activities are viewed negatively. As a result, if the right learning model is used during the learning process, learning will be more meaningful (Puspita & Tirtoni, 2023).

During the pandemic, blended learning became a successful teaching and learning strategy (Wijoyo et al., 2020, p. 23). Students can still learn through this method even in a pandemic by utilizing various learning tools, including Zoom, Google Meet, and others. The advantage of the blended learning approach is that it allows lecturers and students to interact even when they are studying remotely. Students' cognitive skills can be improved with this technique.

Based on the explanation above, it can be said that this classroom action research (CAR) aims to improve the process and increase student interest and learning outcomes in natural science subjects using the Blended Learning learning model.

## **RESEARCH METHODOLOGY**

This study uses a quantitative method and takes the form of classroom action research aimed at collecting data by tracing how the fourth grade students at SDIP Tunas Bangsa Banjarnegara develop in scientific learning due to the application of the blended learning model.

Classroom action research, according to Wiraatmadja (2007, p. 13), is a way for a group of teachers to adjust their learning practice settings and gain knowledge from their own experiences. Burns offers a different perspective on action research in Sanjaya (2011, p. 25), stating that asking researchers and practitioners to work together improves the quality of their actions by applying various facts obtained to address problems in social settings.

With this in mind, it is important to emphasize that classroom action research (CAR) is a series of deliberate actions to improve the quality of teaching and learning. Fourth-

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grade students at SDIP Tunas Bangsa Banjarnegara are the focus of an action research project designed to enhance their scientific knowledge. This study followed the four-stage in-class cycle action research described by Kemmis and McTaggart. The subjects of this study were fourth grade students at SDIP Tunas Bangsa, which consisted of 25 students consisting of 13 female students and 12 male students.

In this study, researchers used several data collection techniques. Data collection techniques used are tests, questionnaires, and observation. The data collection instrument was in the form of questions regarding style material and student learning interest questionnaires.

Table 1. Student Learning Interest Assessment Instrument

No	Rated aspect
1	Seeking and providing information
2	Ask a teacher or friend
3	Submit opinions or comments to the teacher or other friends
4	Discuss or solve problems
5	Utilize existing learning resources
6	Assess and correct the work done
7	Make your own conclusions on the subject matter they receive
8	Do the assignments given by the teacher
9	Help other students who are having trouble
10	Happy and enthusiastic about learning
11	Paying serious attention to teacher learning
12	Answer the questions given by the teacher

The procedure for carrying out the research goes through stages or cycles, each cycle containing four steps, namely: the planning stage, the implementation stage, the observation stage and the reflection stage.

The planning stage starts with finding problems that occur in the field by observing the learning process and its results, then designing the actions to be taken. The implementation stage consists of initial activities, core activities, and closing activities. At the observation stage, the action is to observe the implementation of the action. Observations of the actions that take place in the classroom are carried out to document the effect of the actions carried out on problems in the class and provide a basis for reflection activities that refer to improvements and in the next cycle. Finally, the reflection stage is carried out as an effort by the teacher as a researcher to correct problems that arise during the implementation of the action in cycle I. In the reflection stage the researcher plans the next action lesson.

Success criteria are guidelines for determining the success of an action or program. An action or program is said to be successful if there is an increase in pre-action test scores with cycle I scores. The pre-action test scores are said to be good if the results reach the Minimum Completeness Criteria (KKM). The Minimum Completeness Criteria

(KKM) in science learning for deaf children in class IV at SDIP Tunas Bangsa Banjarnegara is 70 or achieving a presentation of 70%.

## **RESULT AND DISCUSSION**

### **Description of the Research Place**

This research was conducted at SDIP Tunas Bangsa, which is located at Jalan Kalisemi Indah No. 9-11 Parakancangah Banjarnegara. This school stands under the auspices of the An-Nahdla Foundation which is based in Banjarnegara district, Central Java Province (Gabriela dkk., 2022; Qureshi dkk., 2022). The condition of the school is good to support teaching and learning activities. This is shown by the school having 19 classrooms and adequate learning facilities.

The teaching and learning process carried out in this school is the same as in schools in general. Each class consists of 20 to 25 students and 2 class teachers. The learning process is carried out from Monday to Saturday starting at 07.30 WIB until it is finished in pre-pandemic conditions.

The teacher gives lessons in class according to the material in the curriculum. However, the pandemic conditions hampered learning, often the material was not conveyed to students due to limited face-to-face time (Dewi S dkk., 2022; Kartel dkk., 2022; Keshav dkk., 2022, hlm. 6). So that students and teachers will both experience difficulties in conveying and receiving subject matter, thus each teacher will make modifications by making various learning videos.

### **Cycle 1 Planning**

The purpose of this task is to choose learning scenarios, learning resources and media, learning activities, and evaluation designs. A lesson plan that serves as a guide for the learning process includes all of these elements. Understanding the interactions between force, motion and energy and their purpose is the focus of the learning exercise. Each meeting divided the material, and the first meeting discussed the topic of gravity. Magnetic force is the topic of the third meeting, while friction is studied in the second meeting.

The preparation of cycle I questions which are submitted at the beginning and end of the implementation of the action is one aspect of action planning. The subject matter that has been taught in the learning action forms the basis of the questions that have been prepared (Demina dkk., 2022; Hikmah dkk., 2022). After the action was taken, the ability of science learning achievement in style material was assessed using the pre-action and cycle I which consisted of 10 questions. Three meetings are needed to complete the task, plus one meeting for the cycle 1 test.

### **Cycle 1 Action Implementation**

The implementation of the action lasted for four sessions. Cycle I tests were completed at the end of the conference. The activity was described in three sessions for action and one meeting for the cycle I test. Each teacher meeting set aside 60 minutes for each lesson. Cycle I tests were then given for 60 minutes during class. The steps of the cycle 1 learning process are described as follows:

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Information about gravitational pull was conveyed at the meeting. During the first activity, the teacher prepares the necessary learning resources and prepares the class to engage in learning activities. By discussing educational videos sent to the WA group, discussing the gravitational force experienced by students after watching it at home, and encouraging students to use the knowledge they have learned in everyday life, students and teachers help students understand what is being learned (Anoum dkk., 2022; Firman dkk., 2022). the day is akin to getting used to the usual way of doing tasks such as sweeping floors, moving tables, and dragging trolleys.

Delivery of material or subject matter by the teacher initiates the main learning activities. This conversation lasted about 15 minutes. The teacher asks the class about an object that, when thrown, always lands on its back. By using paper and rubber erasers of varying weights, the teacher also does demonstration exercises by being dropped from the same height. The weight of an object impacts how fast it falls, which affects the rate at which it falls. Students were also instructed to record their findings from the demonstration activity in their respective books (Hartini dkk., 2022; Ilham dkk., 2022; Safitri dkk., 2022). Opportunity to ask about information that is not clear is given to students. The teacher then provides reinforcement, and students together bring material about the occurrence of gravitational forces to completion.

The teacher gives a summary of the subject matter at the end of the exercise. The teacher summarizes the lesson, encourages students to study carefully at home, and ends with greetings.

### **Cycle 1 Observation**

Using the blended learning method, observations of student behavior are made to measure their involvement in the learning process. Grade IV students at SDIP Tunas Bangsa took a learning achievement test to measure their ability to relate to the contents of the science curriculum. Observations were made using the observation sheet that had been prepared. The student activity sheet serves as an observation sheet. Following are the findings from activity observations, which will be displayed in the table. 2.

Table 2. Observation results of student interest in cycle 1

No	Rated aspect	Nilai
1	Seeking and providing information	61,6
2	Ask a teacher or friend	66,6
3	Submit opinions or comments to the teacher or other friends	62,6
4	Discuss or solve problems	70
5	Utilize existing learning resources	72,3
6	Assess and correct the work done	60
7	Make your own conclusions on the subject matter they receive	61,6
8	Do the assignments given by the teacher	65,6
9	Help other students who are having trouble	66,6



10	Happy and enthusiastic about learning	63
11	Paying serious attention to teacher learning	65,6
12	Answer the questions given by the teacher	65,6
	Average	64,9

Based on the data in table 1 above, it can be seen that the average value of student interest is 64.9 which is in the good range. After the action is given, a learning achievement test is carried out. Cycle I tests were made based on the information presented in the previous activity, namely an understanding of how force, motion, and energy are related and have different goals. Cycle I test consisted of 20 questions, including 10 multiple choice questions and 10 short answer questions. The following is the learning outcome data after the first cycle of action in table 3.

Table 3. Data on Learning Outcomes After Cycle I Actions

No	Description	Amount	Percentage
1	complete	15	63%
2	Not finished	9	37%
	Average	24	100%

Based on table 3 above, it can be seen that the number of students who completed reached 15 students and the number of students who had not completed reached 9 students. Data on the results of the science learning ability test results in class IV material are summarized in the table above. 24 fourth graders took the test after attending three teaching meetings. The results of the first cycle test showed that students obtained the lowest score, namely 50, placing them in the sufficient category. The child found it difficult to understand the teacher's information during the previous test. Only LK (worksheets) which are distributed once a week are taken by students. When the test is given, the classroom environment is not supportive; kids and go and still bored. As a result, the teacher creates a conducive learning environment for the next exam.

### **Cycle 1 Reflection**

After the reflection of the first cycle is complete, the first cycle is carried out. Classroom research implementation has not reached the set, according to the findings of the reflections made. As a result, cycle II, the next cycle, must be equipped with an improvement plan which includes:

a. In the first cycle, 9 out of 24 students had student learning outcomes below the 65 cut point, so that the student learning completeness level reached 63%. This happens due to the lack of attention of students to the teacher's explanation.

b. In general, cycle 1 has been running according to a predetermined plan. Changes that occur in learning outcomes and student learning interest. Students will be more involved in learning content independently by adopting a blended learning methodology, while still receiving direct and online supervision from teachers through various learning videos. The most important factor is that students are consistently excited about the work that will be given them next. This is because they understand the content, not just memorize it.

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By analyzing the information obtained from the results of observation and testing, reflection is carried out. The successes drawn in using the blended learning model, its advantages and disadvantages, and finally the student achievement test given after it is given must be taken into account in this reflection.

By comparing the results of the pre-action test and the results of the cycle I test, the science learning achievement on force loading increased. Then it is necessary to determine whether the improvements made meet the KKM that has been set, namely 65. This is intended so that cycle II activities are better than cycle 1 because cycle 1 problems can be taken into consideration for improvement in cycle II, but first the teacher and researcher must find a way to overcome what was found in cycle 1.

### **Cycle II Planning**

The follow-up of cycle I thinking is the plan for cycle II. Reflecting on the situation it was revealed that the deficiencies persisted even after improving science learning achievement in style materials had been offered. Because the plan for cycle II was implemented to overcome the shortcomings of cycle I, it is hoped that using a blended learning approach will make it possible to maximize student learning in science subject matter according to their preferred learning style (Najeed dkk., 2022; Nopiana dkk., 2022). Preparing sources (materials) and learning materials is an activity that must be carried out in cycle II planning (tools and media). The materials used are drinking bottles, coins, banknotes, scissors, pins, balls, small stones, blackboard erasers, markers, learning resources that contain content from textbooks and learning films.

### **Cycle II Implementation of Actions**

Cycle II was carried out with material on understanding the interaction between magnetic forces, frictional forces, and gravitational forces. The blended learning paradigm was modified in the first cycle 2, which asked students to review lessons under the direction of their teacher. By using various materials from cycle I, such as chicken feathers, small stones, blackboard erasers, markers, water bottles, coins, banknotes, scissors, safety pins, and balls, the teacher makes learning more interesting. So that students in the lessons being taught, the teacher also creates a more conducive classroom environment. Kids can get excited and committed to learning with a plan.

At the second meeting, information about friction was conveyed. With swipe information, the second meeting was conducted online using Google Meet. The teacher encourages the class to pray before starting the lesson at the opening. The teacher explains the objectives and teaching materials relevant to friction and engages students in conversation about the personal experiences they have had with friction (Dianovi dkk., 2022; Rohmalimna dkk., 2022). When the teacher explains the objectives and learning materials, students pay close attention.

The teacher's first task is to define and describe frictional force. Students are asked by the teacher about the friction force. The instructor presents information about contrasting how items interact with the floor. The film shows children wearing football boots and school shoes, but rubbing the football boots on the floor makes them more slippery than rubbing them on the grass. Students watch a power point video that discusses

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friction. The teacher and students examined the friction of objects in two pairs of school shoes and found that the soles of the new school shoes provided more friction than the old ones. Students use school shoes with new problems and to compare the friction of objects on the floor and record their observations. Opportunity to ask about information that is not clear is given to students. The teacher then provided support based on the findings of the friction demonstration, and the children and teacher came to the conclusion that school shoes with new soles had more friction than those with old soles. Because footwear with flat bottoms has long been formed.

The final stage Students clean learning materials and equipment. Master ended by congratulating everyone and encouraging them to study hard at home.

### **Cycle II Observation**

Researchers made observations of teaching and learning activities. All class activities that take place while applying the blended learning model are observed. Each teacher explained the topic clearly, and students always paid great attention. Students participate actively in learning activities. Students always solve problems quickly. The young people were very happy and excited during the demonstration. When the teacher asked them to write on the blackboard, the students also got excited. In cycle II, there is a greater sense of enthusiasm for student learning. When students pay attention to the teacher, they don't look lazy.

Table 4. Results of observations of student interest in cycles 1 and II

No	Rated aspect	Cycle	Cycle Value
		Value I	II
1	Seeking and providing information	61,6	74
2	Ask a teacher or friend	66,6	77,6
3	Submit opinions or comments to the teacher or other friends	62,6	77,6
4	Discuss or solve problems	70	81
5	Utilize existing learning resources	72,3	83,3
6	Assess and correct the work done	60	74,6
7	Make your own conclusions on the subject matter they receive	61,6	83
8	Do the assignments given by the teacher	65,6	84
9	Help other students who are having trouble	66,6	85
10	Happy and enthusiastic about learning	63	84,6
11	Paying serious attention to teacher learning	65,6	87
12	Answer the questions given by the teacher	65,6	82
	Average	64,9	81,22

An average score of 64.9 was achieved on the basis of students' motivation during the first cycle of instruction. In addition, the score in cycle II increased to 81.22. By rewarding consistent class participation with rewards and prizes, the teacher has aroused the curiosity of the most active students. Assessment of written learning outcomes as many as 20 questions. The questions on this test are very similar to the questions on the cycle II test.

Table 5. Data on Learning Outcomes After Action Cycle II

No	Description	Amount	Percentage
1	complete	15	63%
2	Not finished	9	37%
	Average	24	100%

The table above displays the results of the scientific learning mastery of the fourth grade students' learning styles. The results achieved by students after cycle II and cycle II tests greatly improved. The minimum student score was increased from 60 to 75 by 15% to meet the good criteria. After the implementation of cycle II was completed, reflection on cycle II was carried out.

Student learning outcomes in cycle II there were 21 out of 24 students who scored below 65 so that the overall level of student learning completeness reached 87.5% which fulfilled the success rate with 85% classical completeness. This is as a result of students at the best teacher's explanation.

The average score rose to 81.22 based on student involvement during cycle II learning. By rewarding students who are consistently engaged in learning, teachers have increased the number of students who do.

The results of learning interest carried out by researchers during teaching and learning activities take place. Observations made include all student activities in class during learning using the blended learning model. Students take part in learning activities well, each teacher explains the lesson, students always pay close attention. When given practice questions, students always work quickly. During the demonstration the students were very enthusiastic and felt happy. Students are also enthusiastic when the teacher asks to write on the blackboard. The sense of enthusiasm for student learning in cycles I and II increased from the average in cycle I of 4 to after cycle II of 4.5.

### **Cycle II Reflection**

In the second cycle, reflection is carried out again by analyzing the data collected from the post-test and observation. Along with observing the second cycle in the first cycle, the researcher looked at how well the blended learning model helped children in fourth grade learn science. Pre-action test, cycle I, and cycle II can be compared to show improvement. In order for this activity to be considered effective, the student's second cycle test score must be at least 65. It is clear from table 4.6. On top of that all students experienced an increase. The results of the second cycle test also met the KKM that had been set, which was 65. It even exceeded the KKM achieved by each student. This cycle II test showed a slight increase in student problems such as slow learning, distracted focus, daydreaming, and students who prefer to disturb their classmates who are studying. It can be said that almost all actions and learning outcomes tests function effectively.

Conveying the objectives of the learning model that will be used is very important for students because it can increase their willingness to accept assignments related to learning (Khoerunnisa & Aqwal, 2020). Due to the teacher's unbalanced direction, some couples struggle to complete their assignments correctly (Mariyaningsih & Hidayati,

2018). In cycle I, time management is also less effective. Due to less time for face-to-face meetings, presentations by the assessment team and teacher explanations of student responses can be completed in less time (Sumiharsono & Hasanah, 2017; Mustofa et al., 2020). In the next cycle, the teacher's task is to manage time effectively. Students must be strongly encouraged by their teachers to work harder on the content being taught (Arifin & Setiawan, 2020).

Because they only study alone at home and read boring textbooks, teachers feel that students' interest in students' scientific learning cycles is inadequate. so that learning becomes boring for children (Syam et al., 2022).

Students' interest in science lessons in style material in cycle I was felt to be lacking because students only studied independently at home and were monotonous just by reading textbooks. So that students experience boredom in learning. Interest in learning increased in cycle II seen in better student activity.

Student achievement obtained in the first cycle is quite good. The average grade of 70th grade increased by 9.88 points from the pre-research average score of 60.12. The percentage of classical completeness was 62%, up 21% from the percentage before the study, which was 41%. However, these results are not as expected, because these results need to be improved in the next cycle.

In this second cycle, the teacher's time management was good. The division of time for face-to-face and online learning has been going well (Amado-Alonso dkk., 2019; Rahmah dkk., 2022). Student achievement obtained in cycle II increased. The grade 80 average score rose 10 points from the pre-research average score of 70. The percentage of classical completeness was 87%.

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## **CONCLUSION**

Based on the results of the research and discussion it can be concluded that (1) the Blended Learning learning model can improve science learning outcomes, with an average pre-cycle score of 64.9 increasing to 81.22. Students who scored to fulfill the KKM increased from 63% to 87%. Selection of the right learning model can affect the achievement of student learning outcomes. Student motivation has an influence on science learning outcomes. Students with high learning motivation certainly have better learning outcomes than students with moderate or low learning motivation. It is hoped that teachers can foster learning motivation in students in various ways according to the abilities of the teacher and are attractive to students.

The results of learning interest carried out by researchers during teaching and learning activities take place. Observations made include all student activities in class during learning using the blended learning model. Students take part in learning activities well, each teacher explains the lesson, students always pay close attention. When given practice questions, students always work quickly. During the demonstration the students were very enthusiastic and felt happy. Students are also enthusiastic when the teacher asks to write on the blackboard. The sense of enthusiasm for student learning in cycles I and II increased from the average in cycle I of 4 to after cycle II of 4.5.

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