

Efforts to Improve Science Learning Outcomes and Student Activity with a Contextual Teaching and Learning Model in Grade III SDN Bangka 3 Bogor City

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Abstract: This research moves from the phenomenon that occurs in the classroom that low student learning outcomes in science learning on the subject of energy and its changes. Therefore, through this research, it is hoped that it will obtain the right way to improve the quality of science learning at SDN Bangka 3 in increasing the activeness and learning outcomes of science on the subject of energy and its change by using a contextual teaching and learning model. This research aims to 1.) Describing the Contextual Teaching and Learning (CTL) Model in the process of making windmills to improve student learning outcomes about energy and its changes in science subjects in grade III SDN Bangka 3 Bogor City. 2.) Measuring how much the increase in activeness and student learning outcomes about energy and its changes using the Contextual Teaching and Learning (CTL) Model in science subjects in grade III SDN Bangka 3 Bogor City. The results of this study show that using the Contextual Teaching and Learning Model can be a fun variety of learning for students so that it is proven to improve student learning outcomes in grade III SDN Bangka 3 Bogor City. Before using the Contextual Teaching and Learning Model, the results of the student teaching bell only reached an average score of 70 then there was an increase after using the assignment learning method to 74 in cycle I, 78 in cycle II and 82 in cycle III. From the description above, the researcher concluded that the use of the Contextual Teaching and Learning Model adapted to the learning material can create a pleasant learning situation so that there is an increase in the learning outcomes of grade III students at SDN Bangka 3 Bogor City.

Keywords: Contextual, Model teaching and learning, Activeness and student, Learning outcomes

Introduction

Education is one of the musts for humans, especially immature children. Like the presence of the world, it seems that a child has to obtain an education. To achieve maturity of the newborn child needs to get an education. Therefore, the newborn child must be educated, guided and directed to reach maturity. Education can be done by learning.

The main purpose of learning is to mature the child. The form of maturity that you want to be vilified is generally social, namely in the form of independence in social life. Self-sufficiency means being able to take responsibility for his deeds, both towards and alone. Family, community and towards God. Schools are one of the elements of education, as educational institutions, the existence of schools is directly related to the role of education in the formation of human resources.

Schools are expected to be able to make a major contribution to the readiness of the Indonesian nation to face the era of globalization, be able to transform advances in science and technology, and be able to equip students with independent skills and attitudes. The essential educational process is an effort to various potential personalities of students so that they grow up optimally and reasonably so that they can be useful for their lives in the future.

Science subjects are related to how to find out about nature systematically, so that science is not only a mastery of a collection of knowledge in the form of facts, concepts, or principles only but is also a process of discovery. Science education is expected to be a vehicle for students to learn about themselves and the surrounding nature, as well as the prospect of further development in applying it in the realm of daily life. The learning process puts pressure on providing hands-on experience to develop competencies in order to explore and understand the surrounding nature scientifically.

In science subjects, especially about energy matter and influence. The predetermined KKM is 74 but the student's score is below the KKM. Based on the daily test that has been carried out on average, obtaining a score of 63.17. Out of 30 people, only 12 people or 40% have a score above the predetermined KKM and 18 students or 60% have a score below the KKM, this is because the teacher explains about the energy and changes using the lecture method, students are used as objects of hearing only. In this learning, the teacher acts as a teacher center while students look more passive, and there are even students who fall asleep in the classroom. Therefore, researchers replaced the existing learning model by using the Contextual Teaching and Learning (CTL) Model to improve student learning outcomes and activity.

The Contextual Teaching and Learning (CTL) model aims to enable students to improve learning outcomes that are even better in their understanding of the material provided by the teacher because students carry out exercises during task performance, so that the student's experience in learning something becomes more integrated. In another sense, this task is much broader than homework because the Contextual Teaching and Learning (CTL) Model uses the Assignment Method given by the teacher to students to be completed and accounted for. Students can complete at school, at home and even in other places that can support the completion of the task, either individually or in groups. Tugas set a time limit, collected, examined, assessed, and discussed the results to determine the level of understanding of students in mastering the material that has been given. Based on the background above, there is a gap between the expectations of the existing curriculum and the scores obtained by students on the daily science test which is still considered quite low and the learning model is not appropriate in delivering teaching materials.

Theoretical Studies

Science Learning Outcomes

Learning and Learning

Learning is a complex student action and behavior. As an action, then learning is experienced only by the students themselves. Students are determinants of whether or not the learning process occurs. Ernis ER. Hilgard in Riyanto (2010:4) a person can be said to be a teaching bell if he can do something by means of exercises so that the person concerned becomes changed. The learning process occurs thanks to the student acquiring something that is in the surrounding environment. On the other hand, if he does not learn, the response decreases. Menurut Gagne in Anni & Rifai (2012:66) learning is a change in human disposition or proficiency that lasts for a certain period of time, and the change in behavior does not come from a natural process of growth, after learning people have skills, knowledge, attitudes and values. The emergence of these changes is from stimulation derived from the environment, and cognitive processes carried out by the learner Suprijono (2011: 3) learning is a change in behavior that behaves permanently as a result of the experience of While Surya (1997) in Rusman (2015: 13), explains that learning as a process carried out by individuals to obtain changes in behavior overall, as a result of personal experience itself in interaction with its environment. Suraya explained that learning is a process, meaning that learning is the result of an action that is performed or does not suddenly change. Further learning is an intentional act. That deliberate action is to achieve purposeful change. Rusman (2015: 12) argues that learning is one of the influencing factors and plays an important role in the personal formation and behavior of individuals. This opinion places learning as a factor in the formation of character and behavior. The formation of a person's personal and behavior is greatly influenced by his learning activities, for example, he cannot learn well, it will result in personal formation and bad behavior and vice versa.

Howard L. Kingskey in Rusman (2015: 13) says that "learning is process by which behavior (in the broader sense) or originated or changed through practice or training." Learning is the process by which the practice (in a broad sense) is elicited or altered through practice or practice. This opinion is almost the same as the opinion of Surya who explains that learning is the result of the process. The process referred to by Howard L. Kingskey is latihan atau practice.

Based on the expert opinion above, it can be said that the most important thing in learning is the occurrence of behavior changes.

Furthermore, the change in behavior in each individual varies depending on the experience they have experienced. Meaningful experiences will shape much stronger behaviors. Similar to the learning process in students, when the learning process is less meaningful, it will result in temporary changes in behavior. Therefore, a variety of learning homework is needed that is able to provide opportunities for students to ask questions, find and try for themselves what they are learning. This kind of activity gives a special impression for students as an interesting and not boring thing that leads to the meaningfulness of a learning. Thus, the change in behavior as a result of the learning process will be maximum.

Learning events accompanied by a learning process will be more directed and systematic than learning that is solely from experience in social life in society. Because learning with the learning process involves the participation of teachers, learning materials, and a conducive environment that is deliberately created. So it can be concluded that learning is a process that is carried out to achieve goals, learning is characterized by a complete change in behavior caused by interactions individually and in groups.

Djahiri (1986:20) stated that in essence learning is as follows:

"Learning contains the meaning of two process activities, namely student learning activities (KBS) and planning activities and implementing / teaching educators (KGM). In contrast to the old understanding that established KGM as a learning mecca; then in the current educational renewal, KBS is the most important thing and is the cornerstone of all teaching design as well as the process and obtaining results".

In line with the above opinion, Ibrahim (2002:48) suggests that "learning is essentially a transactional communication process that is reciprocal, both between education and students, students and students to achieve the goals that have been set" . Hamalik (2001:57) further stated that "learning is a combination composed of humane elements, materials, facilities, equipment, and procedures that influence each other's achievement of learning objectives". The human element involved in the learning system consists of students, educators and other personnel, including laboratory personnel. While the material elements include: books, whiteboards, chalk, photography, slides, film, audio, and video tape. Elements of facilities and equipment consist of classrooms, audio-visual equipment, and computers. The last is a procedure that includes schedules and methods of conveying information, study practices, exams and so on.

Meanwhile, according to the MKDK Development Team, the Learning Curriculum (2002: 48) basically learning is a causal process. Educators who teach are the main cause for the occurrence of student learning processes, although not every student's learning actions are the result of teaching educators. Learning objectives are predetermined behavioral formulations to belong and must be visible to students as a result of the learning actions carried out.

Based on some of the explanations above about the meaning of learning, the author can conclude that learning involves more students in participating in martial arts activities than educators. Where educators have a role as mentors to direct the process of learning activities to students so as not to deviate from the expected learning objectives.

Student learning outcomes are essentially changes in behavior. Behavior as a broad sense covers the cognitive, affective and psychomotor fields of Sudjana (2005:3). According to Benjamin Bloom, dividing learning outcomes into three domains, namely Nana & Rifai (2012:70), including the following:

Cognitive Realm, related to the results in the form of knowledge, abilities and intellectual proficiency. The cognitive realm includes the categories of knowledge, synthesis and evaluation.

The realm of Afektive, relates to feelings, attitudes, interests, and values. Its purpose category reflects a hierarchy that contradicts the desire to accept to the formation of a pattern of life. The objective categories of affective students are acceptance (receiving), handling (responding), assessment (valuing), organizing (organization), and formation of a lifestyle (organization by a value complex)

The Realm of Psychomotor, deals with physical abilities such as motor and nervous skills, object manipulation, and nerve coordination. The realm of psychomotor includes seven aspects, namely: perception aspects, readiness (set), guided response, accustomed movements (mechanisms), complex movements (complex overt response), adjustments (adaptation), and creativity (originality).

Then, Musfiqon (2012: 19) stated that student learning outcomes are essentially changes in behavior that affect the cognitive, affective and psychomotor fields. According to the opinion of Nana Sudjana (2000: 13) learning outcomes are the abilities that students have after they receive their learning experience.

There are five types of learning outcomes, namely:

- a. Intellectual skill, that is, an ability to make a person competent towards a subject so that they can group, identify a symptom,
- b. Cognitive strategy, that is, the ability of a person to be able to control his intellectual activity in overcoming the problems that the person faces
- c. Verbal information, that is, a person's ability to use both spoken and written language in expressing a problem,
- d. Attitude, that is, the tendency to accept or reject an object
- e. Motor skills, that is, the ability of a person to coordinate muscle movements regularly and smoothly in a conscious state.

Elementary science learning activities are more directed at learning (learning) than teaching (teaching). This situation places the situation of a teacher as a facilitator or guide for students, so that the learning process can take place with students who are more creative. Creative in the sense of being directly involved in learning.

Science is a concept of natural learning and has a very broad relationship related to human life. Science learning plays a very important role in the educational process. Learning IPA is expected to be a means for students to learn about themselves and the surrounding nature, as well as further development in the application of daily life. This is in line with Trianto (2011:136), that "Science is a collection of theories that are systematic, the application of which is generally limited to the symptoms of nature, born and developed through scientific methods such as observation and experimentation and demands scientific attitudes such as curiosity, openness, honesty and so on". So science is a collection of theoretical knowledge about the phenomena of living things, life processes, objects, energy, the earth and the universe.

So it can be concluded that the results of learning science are the ability of students to master science lessons on energy materials and their changes are based on experiences after participating in learning in class and are seen in the cognitive realm on the dimensions of knowledge, understanding, and application. The learning process is essentially to develop student activities and creativity through various interactions and learning experiences. Student learning activity is a basic element that is important for the success of the learning process. According to A.M.Sardiman (2001:98) Active learning is an activity that is physical or mental, namely doing and thinking as an inseparable series. Successful learning must go through a variety of activities, both physical and psychological activities. Physical activity is an active student with limbs, making things, playing or working, he is not just sitting and listening, seeing or just passive. A student who has psychic (psychiatric) activity is if his mental power works as much as possible or functions a lot in the context of learning.

The activeness of students in learning activities is nothing but to construct their own knowledge. They actively build an understanding of the problem or everything they have in the learning process. In the Big Dictionary of Indonesian, active means enterprising (work, strive). Active learning is defined as a thing or situation where students can be active in participating in learning. Rousseau in (Sardiman, 1986: 95) suggests that everyone who learns must be active on their own, without any activity the learning process will not occur. Thorndike stated that students' active learning in learning with his "law of exercise" law states that learning requires exercises and Mc Keachie stated with regard to the principle of active learning suggests that individuals are "active learning human beings always curious" Dimiyati and Mudjiono, (2009:45). All knowledge must be acquired by one's own observations, own experiences, own investigations, by working alone with self-created facilities, both spiritually and technically. It can be concluded that learning activity is all activities that are physical and non-physical students in the process of optimal teaching and learning activities so that they can create a conducive classroom atmosphere.

Student activity in the learning process can stimulate and develop their talents, students can also practice critical thinking, and can solve problems in everyday life. In addition, teachers can also engineer the learning system systematically, thereby stimulating student activity in the learning process. The activeness of student learning is influenced by several factors. Factors that affect student learning activity are:

- a. Provide motivation or attract the attention of students, so that they play an active role in learning activities;
- b. Explaining instructional objectives (basic abilities to students);
- c. Remind students of learning competencies;
- d. Providing stimulus (problems, topics, and concepts that akan learned);

- e. Instruct students on how to learn;
- f. Bringing up activities, student participation in learning activities,
- g. Provide feedback;;
- h. Billing bills to students in the form of tests so that students' abilities are always monitored and measured;
- i. Summing up each material presented at the end of the lesson.

Definition of Contextual Teaching and Learning (CTL) Model A model is a pattern (example, reference, variety) of something to be created or produced (Departments of P and K, 1984:75 in Sujianto, 2008:7).. According to Asep Herry Hernawan et al (2006; 9.5) in Suwarno (2009:32), "Learning in hakekatnya is a cause-and-effect process.

Ahmad Sudrajad (2008:5) stated that, "The learning model is basically a form of learning depicted from beginning to end that is presented distinctively by the teacher. According to Joyce & Weil, a learning model is a plan or pattern used to form a curriculum (long-term learning plan), design learning materials, and guide learning in the classroom or others. (Joyce & Weil, 1980:1).

The learning model is a unity between approaches, strategies, methods, techniques and even learning tactics that are fully assembled. So, the learning model is basically a form of learning that is depicted from beginning to end that is presented characteristically by the teacher. In other words, the learning model isa form of application of an approach, method, and learning technique. In other words, the learning model is a wrapper or frame of application of an approach, method and learning technique."

According to Udin Winataputra (1994) in Rachmad Widodo (2009:2), "The learning model is a conceptual framework that describes a systematic procedure in organizing learning experiences to achieve certain learning goals and serves as a guide for teaching designers and planning and implementing teaching and learning activities."

From the definition above, it can be concluded that the learning model is a form of learning that is depicted from beginning to end that is presented distinctively by the teacher, to help students make it easier to receive the subject matter.

Furthermore, according to B. Johnson (History, 2008), contextual learning is a system that stimulates the brain to compose patterns that embody meaning. Elain said that textual learning is a learning system that is suitable by connecting academics with the context of students' daily lives.

According to Sanjaya (2005:109) in Sukarto (2009:3), Contextual Teaching and Learning (CTL) is an approach that emphasizes the process of full student involvement to be able to find the material being studied and connect it with real-life situations so as to encourage students to be able to apply it in their lives.

According to the Ministry of National Education, contextual learning is a learning concept that helps teachers relate the learning material taught to the real situation of students which encourages students to make connections between the knowledge they have and the application in everyday life(Sumiati, 2008: 14).

Johnson, an educational figure, stated that CTL is a teaching process that aims to help students understand the subject matter they are studying by connecting the subject matter of the study with its application in everyday life (Supinah, 2009: 40).

Contextual Learning is a concept that helps teachers to relate the material taught to students' real-world situations and encourages students to make connections between the knowledge they have and their application in brand a life as a family member and society (Nurhadi, 2001).

According to Nurhadi in Sugianto (2008: 146) "Contextual teaching and learning (CTL) is a learning concept that encourages teachers to connect between the material being taughtand the real-world situation of students. And encourage students to make connections between the knowledge they have and their application in their own lives. The student's knowledge and proficiency are gained from the student's efforts to construct his own new knowledge and skills when he or she is studying".

Meanwhile, according to Jhonson in Sugianto (2008:148) "(contextual teaching and learning-CTL) is an educational process that aims to help students see the meaning in the academic material that is learnedly connecting academic subjects with the context of their personal, social and cultural circumstances."

According to Akhmad Sudrajad (2008:3), "The learning model (contextual teaching and learning-CTL) is an educational process that is holistic and aims to motivate students to understand the meaning of the subject matter they are studying by relating the material to the context of their daily lives (personal, social, and cultural contexts) so that students have knowledge / knowledgeability and can flexibly be applied (transferred) from one problem / context to another problem / context".

Elaine B. Johnson (2007:14) in Sukarto (2009:3) explains that Contextual Teaching Learning (CTL) is a learning system based on the philosophy that students are able to absorb lessons if they capture meaning in the academic material they receive, and they capture meaning in schoolwork if they can relate new information to the knowledge and experience they have had before.

Based on the description of the theories above, it can be synthesized that the Contextual Teaching Learning (CTL) Model has a relationship between each learning material or topic and real life. Contextual Teaching Learning (CTL) is a learning strategy that emphasizes the process of fully engaging students to be able to find the material being studied and relate it to real-life situations so as to encourage students to be able to apply it in their lives.

Research Method

The subjects in this study were class III B students totaling 30 children with a total of 18 boys and 12 girls. Class III B which is a sub-k of research that will receive class action research treatment to improve activeness and learning outcomes using the Contextual Teaching and Learning (CTL) Model. This class action research was carried out at class III B of SDN Bangka 3 which is located at Jalan Otto Iskandardinata No. 78 Baranangsiang Village, East Bogor District, Bogor City, West Java Province. Researchers teach at the school so that they are directly involved in the learning process in the classroom, especially in observing various problems that arise in learning so as to facilitate technical data collection. The type of research is PTK (Classroom Action Research). This is because the research is based on the problems faced in the field, namely the learning of energy materials and their changes and affects the mastery of the concept of science. The problems that arise are reflected and analyzed based on supporting theories, then actions are taken to seek understanding of energy matter and its changes. Researchers carry out learning actions and motivate students to be active in learning.

Data collection techniques in class action research are carried out through:

1) Observation

Observation is a complex process, a process composed of various biological and psycho-logical processes. Two of the most important are the processes of observation and memory. Hadi Sutrisno in Sugiyono (2010: 203). In this study, observations were used for direct observation in the science learning process in class III B, researchers participated and jumped directly into observing the process of implementing science learning. Observation is used to take data when the subjects do group work, which is in the form of observations of student activity and student performance carried out through an observation sheet.

2) Documentation

Documentation is a record of past events, documentation can take the form of writings, drawings, or monumental works of a person. By using documentation researchers can find out an overview of the process learning carried out by students. This documentation is used to obtain data from all existing documentation. Written, printed, or recorded documentation used as evidence or information. The documentation data in this study are photos of learning activities, children's observation sheets and teacher observation sheets.

3) Performance

Data collection by test method and student observation sheets. How students can show their ability to participate in play and learning activities with the teacher. Whether students are able to achieve the expected indicator ability with a predetermined grid of questions.

Research Results

Based on the research conducted, the results of the study were obtained as follows: Before taking action in the study, the researcher made preliminary observations in the classroom. The results of the observations showed that when the teacher taught about energy and its changes the average score result was 70 while the specified

KKM was 74. Students who scored above KKM were only 12 students (40%) while students who scored below KKM 18 students (60%). So it was decided to use the Contextual Teaching and Learning (CTL) Model in science subjects in the subject of Energy and Change. Learning begins by looking at the results of the science lesson test in Class III to find out the students' initial ability to energy matter and its changes. The test result scores are used as a reference to determine the learning outcomes of grade III students after using Model Contextual Teaching and Learning (CTL). The initial test questions are in the form of material related to the material that has been taught. The acquisition of this daily test score will be used as a reference to determine the improvement of student learning outcomes after using the Contextual Teaching and Learning (CTL) Model.

Based on the initial conditions, it was found that students only obtained an average score of 70 with the highest score of 85 and the lowest score of 50. Students whose learning outcomes are above KKM are only 12 students or 40% of the KKM score set at 74 and only 18 students or 60% have passed KKM even with grades that are not so different. This gives an idea that student learning outcomes in science subjects are still relatively low.

From the results of the observations of cycle I, it was found that in carrying out science learning on the subject of energy and its changes using the Contextual Teaching and Learning (CTL) model in cycle I, teachers have applied in accordance with the Learning Implementation Plan (RPP) that has been prepared. Based on the results of observations made by the observer, the teacher was too quick in explaining. Data on student learning activity can be obtained using an observer sheet. The activeness of learning siswa can be seen in terms of asking and answering questions from teachers and their enthusiasm in working on student worksheets during the learning process. At this observation stage, data on student learning activity in the first cycle showed that 12 students (40%) were already well active in participating in learning. Meanwhile, 11 students (36.67) were quite active in participating in learning and 7 students (23.33) were less motivated in learning.

Then to find out the amount of students' learning, then at the end of the first cycle a learning outcomes test was carried out and the results were found that the average student's score was 74 with the highest score of 100 and the lowest score of 55. Students whose learning outcomes are above KKM there are 15 people or 50% of the set KKM score of 74, while students whose learning outcomes are below KKM 15 people or 50%. This gives an idea that there is an increase in student learning outcomes from pre-cycle to cycle I. Based on the analysis of the data above, there are still shortcomings in cycle I. These shortcomings include teachers not motivating students and teachers not using learning media in the learning process. Meanwhile, the teacher's ability to optimize the implementation explains the energy and changes, the time change, and the teacher's spirit has not been optimal. Then 11 students (36.67%) students have not focused on paying attention to the lesson and 7 students (23.33%) students do not pay attention to the lesson. With these shortcomings, there is a need for improvements in learning for cycle II. The improvement is in a more detailed way in explaining and motivating students more. In addition, the teacher must further condition the students, so that the students are really engaged in learning.

In this second cycle the teacher has made improvements. The improvement in learning is that the teacher motivates students more, so that students are more enthusiastic in participating in learning. With a higher spirit, learning can be better, in addition to motivating students, teachers provide more opportunities for students to ask questions that are not yet clear. Data on student learning activity can be obtained using an observer sheet. The activeness of the student's learning can be seen in terms of asking and answering the teacher's questions. Regarding the activeness of student learning in cycle II, it was obtained that 19 students (63.33%) had good activeness in participating in learning. Meanwhile, 7 students (23.33%) are quite active in participating in learning and 4 students (13.33%) are still less motivated in participating in learning.

Furthermore, to find out the amount of student learning outcomes, at the end of cycle II a written test with learning outcomes was carried out and it was obtained that the average student's score was 78 with the highest score of 93 and the lowest score of 64. Students whose learning outcomes are above KKM there are 23 students or 77% of the set KKM score of 74, while under KKM there are only 7 students or 23%. This gives an idea that there is an increase in student learning outcomes from cycle I to cycle II. Based on the analysis of the data above, there are still shortcomings in cycle II. The shortcoming is that there are still students who have not been completed in learning, this is because the teacher's ability to explain energy and changes, the use of media assisted by concrete objects and the teacher's enthusiasm to activate students has not been optimal. Then 7 students (23.33%) students have not focused on paying attention to the lesson and 4 students (13.33%) these do not pay attention to the lesson. With these shortcomings, there is a need for improvements in learning for cycle III. The improvement is in a more detailed way in explaining and motivating students more. In addition, the teacher must further condition the students, so that the students are really engaged in learning. In this third cycle, the teacher has made improvements. The improvements in learning are that the teacher is more active in breastfeeding and activating students, so that students are more enthusiastic in participating in learning. With a

higher spirit, learning can run better, in addition to motivating students, teachers use concrete object media assisted by rik list switches and water faucets in the school environment to explain about energy materials and their maintenance and teachers give more opportunities for students to ask questions that are not yet clear. Teachers also give rewards (awards) to outstanding students and groups. Data on student learning activity can be obtained using an observer sheet. The activeness of student learning can be seen in terms of asking and answering teacher questions, and regarding student activities in the second cycle I, it was obtained that almost all of them were 83.33% or 25 students active in participating in learning, while 16.67 or 5 students were quite active in participating in learning.

Furthermore, to find out the amount of student learning outcomes, at the end of cycle III, a written test with learning results was carried out and it was obtained that the average student score was 82.24 with the highest score of 100 and the lowest score of 71. Students whose learning outcomes are above KKM there are 28 people or 93% of the specified KKM score of 74, while under KKM only 2 people or 7%. This gives an idea that there is an increase in student learning outcomes from cycle II to cycle III. From the data above, it can be informed that almost all students like and are active in learning using a contextual teaching and learning (CTL) model with evidence of an average score above the predetermined KKM of 74, while the lowest score is 71 and the highest score is 100. Almost all 28 students in the subject matter of Energy and the changes have been completed. While the activeness of student learning in following this material, almost all students 83.33% or 25 students out of 30 students are very good at following the lesson. Only 16.67 % or 5 students are sometimes less active. Then the teacher's activity is that 100% of the teacher is able to motivate and direct students in the subject matter of energy and change. This is because students feel interested and motivated in learning that uses a contextual teaching and learning (CTL) model, especially when disputing with props.

Discussion

From the learning results using the contextual teaching and learning (CTL) model using observation sheets on student learning activity in learning and answers to evaluation questions given, then the author uses the results of these observations and answers to find out whether with the contextual teaching and learning (CTL) model can increase student activity and learning outcomes on the subject of energy and its changes in the eyes of science students in grade III SDN Bangka 3 Bogor City. Based on the results of a three-cycle study that aims to improve student activity and learning outcomes on the subject of energy and its changes. It can be seen that the implementation of the first, second, and third cycles has shown improvements in the science learning process. With the contextual teaching and learning (CTL) model, the interaction of students and teachers is started by the teacher by creating a small group of 5 students, with his group siswa conducting discussions to make a windmill, followed by a presentation, it is intended so that students can learn happily. Then the teacher directs and explains how the students learn well. During the learning process, GuRu manages classes interactively, guides students and motivates students to play an active role in learning activities. At the end of the lesson, the teacher and the students conclude the lesson that has been carried out. Then the teacher evaluates by giving the relevant questions. Based on this, it can be concluded that there has been an increase in student activity in science learning.

The increase in the average student's score is also supported by the increase in the lowest and highest scores of students in each cycle which is obtained that the lowest score in the pre-cycle is 50 then increases to 55 in cycle I, increases to 64 in cycle II, and increases again to 71 in cycle III. Furthermore, the highest value in the pre-cycle is 85 to 100 in cycle I, decreases to 93 in cycle II and increases again to 100 in cycle III. This proves that the contextual teaching and learning (CTL) model is suitable to be applied to the subject matter of energy and change. In addition to the increase in student average scores, the use of contextual teaching and learning (CTL) models can also increase the percentage of student learning completion. In this case, it was obtained that the completion in the pre-cycle was only 43% or 13 students who were other than the specified KKM, then in the first cycle it increased to 50% or 15 students whose scores were above the KKM. Furthermore, in cycle II it became 77% or 23 students whose scores were above KKM and in cycle III it became 93% or 28 students whose grades were above KKM. And student learning activity shows that in the first cycle there were 12 students who were active or 40% and 36.67% or 11 students who were quite active. Meanwhile, 7 students or 23.33% were less active during learning. After the teacher corrected the reflection results on skills I, in cycle II, 63.33% or 19 students were active, 23.33% or 7 students were quite active and only 13.33 or 4 students were inactive. Then the teacher again improves and improves the quality of learning based on reflection on cycle II. And the results we can see are 83.33% or 25 active students, 16.67% or 5 students who are quite active, and 0% or no students who are not active.

With so many students who are active at the time of learning, it shows that teachers when learning using the contextual teaching and learning (CTL) model have succeeded in involving students in learning. Teacher activity data shows that the first cycle is generally good, but there are some assessment components from observers that are still lacking in their suboptimal time management skills and less motivating students so that student enthusiasm in cycle I in general is still lacking. The shortcomings in cycle I were then corrected in cycle II and the teacher's activities in cycle II were good, there were only shortcomings in the use of learning aids media. And the deficiencies in cycle II are corrected in cycle III and the teacher's activity in cycle III is generally good. Learning using the contextual teaching and learning (CTL) model can increase student activity and learning outcomes because in learning students become more active, creative, and fun for students. In addition, learning with the appropriate method becomes more effective. As a result, the information that students receive will be remembered longer. Significant increase in activeness and learning outcomes between before and after learning using the contextual teaching and learning (CTL) model, because in learning using the contextual teaching and learning (CTL) model, students experience fun learning. This makes the lesson stick longer and both directly and indirectly, makes students understand the subject matter of energy and its changes.

Conclusion

Based on the results of the research and discussion above, the following conclusions can be drawn:

1. The Contextual Teaching and Learning (CTL) model can improve science learning outcomes when viewed as a whole from the pre-cycle showing a percentage of completed students as much as 43%, in cycle I shows a percentage of students who are completed 50%, in cycle II the percentage of students who are completed is 77% and in cycle III the percentage of students who are completed is 77% and in cycle III the percentage is completed students were 93%. Thus the three cycles above can be concluded that the Contextual Teaching and Learning (CTL) Model can improve science learning outcomes in grade III students with the subject matter energy and its changes.
2. The Contextual Teaching and Learning (CTL) model can increase student learning activity on Energy material and its changes are seen in cycle I there are 12 students (40%), cycle II there are 19 students (63.33%) and cycle III terdapat 25 students (83.33%) based on these data student activity is seen to have increased.

Recommendations

Based on the background of the problems described earlier as well as the data and concrete evidence obtained after the use of the Contextual Teaching and Learning (CTL) Model in science learning the subject matter of energy and its changes which turned out to be able to increase student activity and this also affects learning outcomes, researchers have the following suggestions:

1. For Students
For grade III students at SDN Bangka 3 Bogor City, in order to further increase their activities and participation in the learning process so that the value of learning outcomes can be increased.
2. For Teachers
Variations in learning methods are needed by teachers to avoid student saturation. One of them applies various kinds of learning methods or approaches, one of which is by assigning tasks or projects.
3. For Schools
The results of this study can be used as material for the dal am school development program in order to improve the ability of teachers to carry out the learning process in each class, so that SDN Bangka 3 becomes a pilot school in developing efficient and effective methods or models.
4. For Future Researchers
The results of the method can be developed and applied to other subjects. So there needs to be further research as a development of this research.

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