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Peningkatan Hasil Belajar IPAS Melalui Pendekatan Contextual Teaching and Learning (CTL)
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# Improving Science and Science Learning Outcomes Through the Contextual Teaching and Learning (CTL) Approach

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**Abstract**

This research was motivated by the low learning outcomes in science and science subjects. This was discovered during the researcher's interview with the class teacher, that of the 28 students there were 11 students who passed the KKTP and 17 students who did not pass the KKTP so, it could be said that not all students had completed the subject. IPAS because there are still scores below the learning objective achievement criteria (KKTP), namely 70. The causal factors seen in the field are that many learning outcomes do not reach the KKTP because students actively talk with their friends and also carry out their own activities such as playing with stationery, scribbling. - scribbling on paper,. This research approach is Classroom Action Research (PTK) which follows the Kemmis and Taggart model. This research covers two cycles where each cycle includes four stages, namely planning, acting, observing and reflecting. The time of this research was from July-August 2023 with research subjects of 28 students, while data was collected through tests, interviews and observations. The results of the research showed that there was a significant increase in science learning outcomes for class IV students at SDS Taman Harapan, North Jakarta. This is proven by the average results of the science test each cycle increasing, namely in the first cycle of students who achieved KKTP 70 as many as 11 students (39%), in the second cycle it increased to 23 students (82%) and the results of the interviews concluded that learning science through the Contextual Teaching and Learning (CTL) approach is fun for students. This research concludes that learning using the Contextual Teaching and Learning (CTL) approach can improve science learning outcomes for class IV students at SDS Taman Harapan, North Jakarta, Tanjung Priok District.

Keywords: Science, Learning Outcomes, Contextual Teaching and Learning (CTL).

## 1 INTRODUCTION

Education during this period has experienced much progress. Learning is no longer teacher-centered, but student-centered. The learning system requires students to be active in the learning process. Today's teachers must be able to design interactive learning, in order to obtain maximum learning outcomes according to learning objectives.

Learning outcomes are a process of real change in student behavior after the teaching and learning process is carried out in accordance with the lesson objectives including cognitive, affective and psychomotor aspects. Learning outcomes are used to determine to what extent students can comprehend and comprehend the material. Learning outcomes are influenced by student abilities and the quality of teacher teaching, namely the level of expertise and professionalism possessed by the teacher. Learning outcomes are the goals to be achieved from a learning activity. Efforts to improve learning outcomes can be made by teachers by strengthening material and selecting learning approaches that are tailored to students' abilities, so that student learning outcomes can improve, especially in natural and social sciences (IPAS) education in elementary schools.

Science is one of the curriculum developments, which combines science and social studies material into one learning theme. Science, which studies nature, is of course also very close to the conditions of society or the environment, making it possible to teach it in an integrative way. This subject is still considered difficult by some students, from primary to secondary school levels. To improve science and science learning outcomes, especially in

elementary schools, teachers must of course try to think about learning approaches that are suitable for the teaching and learning process. In a lesson, students should directly experience what they are currently learning, not just know about it, this must also be supported by facilities and existing infrastructure at the school, but if the school does not have the facilities and infrastructure needed by the teacher when teaching, of course the teacher has to look for or make the media he needs himself or each student can also bring the tools needed from home.

One of the successes of a science learning process lies in the learning approach. Choosing the right learning approach will make teaching and learning activities in the classroom conducive, so that the desired learning objectives can be achieved well and can improve student learning outcomes, students at grade IV elementary school level are included in the concrete operational stage. Where students need concrete objects to understand abstract objects. The atmosphere that suits elementary school students is an interesting and fun learning atmosphere. So teachers are required to be able to create interesting and fun learning with interesting methods and media, so that students feel happy and motivated to be active during the science and science learning process and science and science learning will be more fun if it is done in a fun atmosphere. Therefore, teachers must try to create pleasant situations and conditions.

Based on the results of researchers' observations carried out on October 4 2022 in class IV SDS Taman Harapan, North Jakarta with a total of 28 students, namely 18 male students and 10 female students, it was found that there was a problem being faced, namely in the learning process students were actively talking to friends. their friends and also do their own activities such as playing with stationery, scribbling on paper, folding paper, students do not pay attention to the teacher when the teacher explains the lesson and the teacher does not actively involve students, the teacher rarely uses teaching aids or interesting and concrete learning media , students also do not repeat lessons at home that have been learned at school. The average grade IV science and science score at SDS Taman Harapan for the 2022/2023 academic year at the time of the interview with the class teacher was 9 (32%) students who passed the KKTP and 19 (67%) students who did not pass the KKTP, so it could be said that not all students complete the science and science subject because there are still scores below the Learning Goal Achievement Criteria (KKTP), namely 70%. Learning activities are still teacher-centered, because teachers still use innovative and fun learning media. Learning activities are still teacher-centered, because teachers still use the lecture method.

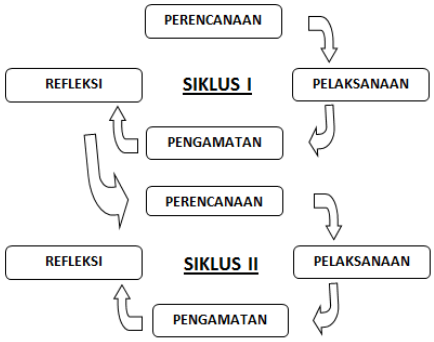
In connection with the above, the Contextual Teaching and Learning (CTL) approach would be suitable to use. Contextual Teaching and Learning (CTL) is a learning concept in which teachers bring the real world into the classroom and encourage students to make connections between their observations and their application in everyday life, namely with the context of their personal, social and cultural circumstances. According to researchers, Plant Breeding material is very suitable if delivered using a Contextual Teaching and Learn approach

## 1 RESEARCH METHODS

This research method uses Classroom Action Research (PTK). This research aims to improve the effectiveness of education or management systems in the world of education which can be used as a problem solving strategy to take appropriate action in order to improve and improve learning. The PTK cycle includes: planning, implementing actions, reflecting and improving, Uharsimi Arikunto, Suhardjono, Supardi., Classroom Action Research (Jakarta: Bumi Aksara, 2006).

This research is the development of learning methods and strategies followed by a study of classroom actions through several cycles, with the following Sugiyono design:

Figure 3.2
PTK Implementation Plan Chart, Suharsimi Arikunta et al. Classroom Action Research, (Jakarta: Bumi Aksara, 2009) h. 16.




At the planning stage, the research plans an action that is focused on improving student learning outcomes in learning science content with material on plant reproduction. The research created teaching modules (MA), research instruments (questionnaires and observation sheets), and instruments for monitoring teacher and student actions. The research action stage carries out implementation or actions as planned, as well as conducting research. The implementation of the actions carried out by the research was observed by the tutor as a collaborator which was recorded on the action monitoring sheet and field notes. Based on the results of the reflection, the researcher made improvements and re-planned the actions that would be implemented in the next cycle stage better.
Science is rational and objective knowledge about the universe
all contents, Usman Samatowa, Science Learning in Elementary Schools, (Jakarta: PT INDEKS, 2016) h. 2. Natural Sciences (IPA) is related to how to find out about nature systematically, so that science is not only mastery of a collection of knowledge in the form of facts, concepts or principles but is also a process of discovery, Amalia Sapriati et al., Learning Elementary School Science, (Banten: Open University, 2014) h. 8. Meanwhile, the definition of social science according to experts such as, according to Achmad Sanusi, Social Science consists of social science disciplines which are at an academic level & are usually studied at the tertiary level, the more scientific they are. Meanwhile, according to Peter Herman, social is something that is understood as a difference but is still a unity. Furthermore, according to Gross, social science is an intellectual discipline that studies humans as social creatures scientifically, focusing on humans as members of society & which he formed, Ahmad Sanusi, Peter Herman, and Gros. Understanding Social Sciences. Social science is an intellectual discipline that studies humans as social creatures scientifically, focusing on humans as members of society & which he formed, Ahmad Sanusi, Peter Herman, and Gros. Understanding Social Sciences. Reproduction is a process carried out by living creatures by multiplying or duplicating their species, Lina Listiana, et al, Natural Sciences I (Jakarta: LAPIS PGMI, 2008), First edition, Package 13, p. 112.
For example, the student approach views learning as consisting of elements that are interrelated and have a systematic relationship, the active student approach views learning will occur if students are active in learning, Sri Anitah, et al, Learning Strategies in Elementary School, (Banten: Open University, 2014 )h. 23. Approach can be interpreted as our starting point or point of view towards the learning process. An education-centered approach reduces direct, deductive or expository learning strategies. However, a student-centered learning approach reduces Discovery and inquiry learning strategies as well as inductive learning strategies, Zainal Aqib and Ali Murtadlo, Collection of Learning Methods, (Bandung: Satu Nusa, 2016) h. 5.
Contextual Teaching and Learning (CTL) is a learning system based on the philosophy that students are able to absorb learning if they grasp the meaning in the academic material they receive, and they

grasp meaning in school assignments if they can relate new information to the knowledge and experience they already have before, Elaine B. Johnson quoting A. Chaedar Alwasilah, (2010: 42-57).
The knowledge and skills that you have are not just to be memorized, but can be used or transferred to other situations and conditions, for example students' ability to solve new problems, Kokom Komalasari, Contextual Learning. (Bandung: Refika Aditama, 2014) h. 8

## 2 RESULT AND DISCUSSION

The results and discussion in this article contain learning outcomes and approaches to Classroom Action Research (PTK) related to learning outcomes in the science and science subject content on plant breeding that have been carried out. The discussion includes (1) the nature of learning outcomes, (2) Natural and Social Sciences (IPAS), (3) the Contextual Teaching and Learning (CTL) approach, and (4) the role of the Contextual Teaching and Learning (CTL) Approach in improving learning outcomes IPAS. These four points of discussion are explained as follows

## 3.1 Hasil Belajar IPAS

Based on the results of researchers' observations carried out on October 4 2022 in class IV SDS Taman Harapan, North Jakarta with a total of 28 students, namely 18 male students and 10 female students, it was found that there were problems being faced, namely in the learning process. This happens because during the learning process the teacher is still not appropriate in using the learning approach. With this, students pay less attention to the teacher and actively play on their own. It is appropriate that in this era an interactive and interesting learning approach is needed. Contextual Teaching and Learning (CTL) learning process is no longer centered on the teacher, but students are invited to actively construct their knowledge through observation activities, group work,
ask questions and discover

### *3.1.1 Hakikat Hasil Belajar*

Ni Nyoman, I Putu Pasek Suryawan, Ratih Ayu Apsari (2019) in Thorndike (1931), stated that one of the most impressive aspects of humans is their ability to learn, because with that they can change themselves. Mohamad Yamin (2015: 6) said that learning is an effort to realize oneself in real forms which are expected to change the situation from closed to essential. In line with what Jumanta Hamdayana said above, Thorndike stated that learning is a process of interaction between stimulus (which may be in the form of thoughts, feelings or movements) and response (which can also be in the form of thoughts, feelings or movements). From the explanation above, it can be concluded that learning is a process of gaining new knowledge which can be seen by changes in behavior.
Zainal Arifin (2016: 26) said that learning outcomes are a description of what students explore, understand and do. Meanwhile, Oemar Hamalik said that these learning outcomes reflect breadth, depth and complexity and must be described in a way that can be measured using certain assessment techniques. Proof that someone has learned is a change in behavior in that person, for example from not knowing to knowing, and from not understanding to understanding.
Based on this description, it can be concluded that learning outcomes are changes in knowledge and behavior obtained from the learning process as a result of experience and practice. So, learning will not produce results without going through the learning process. And learning outcomes will not produce results without going through the learning process.

Learning outcomes are not only seen in the cognitive domain, but also seen in the affective and psychomotor domains

### *3.1.2 IPAS*

Science and science learning in elementary school emphasizes providing direct learning experiences through the use of process skills and scientific attitudes. SI and SKL IPAS in elementary school are the minimum standards that students must achieve nationally and serve as a reference in curriculum development in each educational unit.
Achieving SI and SKL is based on empowering students to build their own abilities, scientific work and knowledge which is facilitated by the teacher. As stated in KOSP, the scope of IPAS study materials for elementary schools includes the following aspects;

- Natural sciences.

1. investigations related to self-knowledge are related to caring for the health of the body, objects, living creatures and the surrounding environment.
2. Analysis of qualitative and quantitative data and information to solve daily problems as a means of training high-level thinking, communication and scientific work skills.
3. Form, function, life cycle and reproduction of living things, relationships between living things, and the relationship between living things and their environment as well as the preservation of natural resources in the surrounding environment and their relationship to efforts to preserve living things.
4. Forms of substances, the process of changing the form of substances, and their use in everyday life.
5. Various types of forces, their influence on the movement of objects, and their use in everyday life.
6. Sources and forms of energy, the process of changing forms of energy in everyday life, saving energy, and alternative energy sources, including: heat, electricity, sound and light energy.
7. Various wave forms and their use in everyday life.
8. Use of electricity and magnetism in everyday life.
9. Changes in natural conditions on the earth's surface that occur due to natural factors and human actions as well as efforts to reduce the risk of disasters and the occurrence of the solar system as well as the influence of the earth's rotation and revolution.

- Social studies.

1. Introduction to oneself and one's environment as an initial process of socialization and interaction to get to know the values and norms that apply in society.
2. Geographical conditions around the house, school and area that influence biodiversity and its use in everyday life.
3. Human behavior to meet life needs and use of simple technology.
4. The struggle of the nation's heroes and the values that can be emulated in present and future life to build the Unitary State of the Republic of Indonesia (NKRI)

## 3.2 Contextual Teaching and Learning (CTL)

Contextual Teaching and Learning (CTL) is a learning system based on the philosophy that students are able to absorb learning if they capture meaning in the academic material they receive, and they capture meaning in school assignments if they can relate new information to their knowledge and skills. experiences they already had before, Elaine B. Johnson quoting A. Chaedar Alwasilah, (2010: 42-57).
The stages of Contextual Teaching and Learning (CTL) according to Ahmad Walid are as follows:

1. 1 Convey students' goals and motivation.

2. Presenting information about the problem and discussing it with friends, in this step the Contextual Teaching and Learning (CTL) component that appears is finding the problem and asking questions.
3. Organize students in study groups. After students understand the Contextual Teaching and Learning (CTL) problem given, students are asked to solve the problem of the Contextual Teaching and Learning (CTL) component which is carried out using the constructivism of inquiry learning communities and finding solutions to the problems given.
4. Guiding group work and learning evaluation is an authentic assessment (at this time students display the results of their work and the steps they take in front of the teacher and their friends after being discussed together with the teacher's guidance, students conclude what they have learned from the problems raised ).
5. Reflection at the end of learning students are asked to comment on the learning carried out.

Based on the explanation above, the Contextual Teaching and Learning learning approach is presented through the context of students' lives, so that learning will be more meaningful and enjoyable. Students will work hard to achieve goals
learning, they use previous experiences and knowledge to build new knowledge. Next, students reuse their knowledge and abilities in various contexts outside of school to solve complex real world problems, both independently and in groups. So it can be concluded that Contextual Teaching and Learning (CTL) is a learning concept where the teacher brings the real world into the classroom and encourages students to make connections between their observations and their application in everyday life, while students gain knowledge and skills from a limited context. little by little, and from constructing it himself, as a provision for solving problems in his life as a member of society. In accordance with the learning steps mentioned above.

### 3.3 Tabel Peningkatan Hasil Belajar

Learning activities have also increased, activities carried out are more dominated by students. A more enjoyable learning atmosphere can be created by using the Contextual Teaching and Learning (CTL) approach. The teacher asks questions to students and directs and observes learning activities and occasionally guides students who experience difficulties.

The data analysis of learning outcomes from giving questions to students in cycle II stage is shown in the table below:

Table 4.9

Recapitulation of Frequency Values Evaluation of learning in cycle II

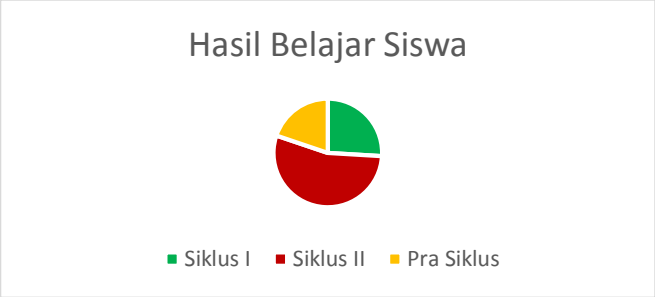
| No. | Nilai | Frekuensi | Presentase (%) |
|---|---|---|---|
| 1 | 40 | 0 | 0% |
| 2 | 50 | 0 | 0% |
| 3 | 60 | 5 | 17,85% |
| 4 | 70 | 7 | 25% |
| 5 | 80 | 6 | 21,42% |

| | | | |
|---|---|---|---|
| 6 | 90 | 2 | 7,14% |
| 7 | 100 | 8 | 28,57% |
| Jumlah | | 28 | 100% |

Figure 4.1
Student Learning Outcomes graph




Figure 4.2
Student Learning Outcomes Diagram




Information
Initial conditions:
The percentage of science and science learning outcomes for class IV students at SDS Taman Harapan, North Jakarta in the initial condition was 30%, this was because the teacher had not used the Contextual Teaching and Learning (CTL) approach in the learning process so that students still had difficulty understanding the subject matter which had an impact on student learning outcomes.
Cycle I
The percentage of student learning outcomes obtained in cycle I was 39.28%, this shows an increase in student learning outcomes before action was taken. The increase in student learning outcomes in cycle I occurred because the teacher had carried out learning effectively
Contextual Teaching and Learning (CTL) approach so that students can learn actively.
Cycle II
In cycle II, the value of student learning outcomes increased by 20% compared to the results in cycle I. The student learning outcomes obtained by students in cycle I were 60.71% and in cycle II were 82.14%, this was because the teacher had maximized the use

of the approach. Contextual Teaching and Learning (CTL) in the learning process, learning becomes more effective so that learning objectives can be achieved.

## 4 CONCLUSION

Based on the results of the research and discussion, it can be concluded that the Contextual Teaching and Learning (CTL) approach can improve students' understanding in Natural and Social Sciences (IPAS) subjects, especially Plant Breeding material in Grade IV Students at Taman Harapan Elementary School, North Jakarta, Academic Year 2022/2023. odd semester.
This can be seen from the results of observations made by the researcher during pre-action, then continued with cycle I, where in each cycle the researcher held 2 meetings. The first meeting was held on Tuesday 25 July 2023 and the second was held on Friday 28 July 2023.
Cycle II, the first meeting was held on Tuesday 1 August 2023 and the second meeting was held on Friday 4 August 2023.

## 5 ACKNOWLEDGEMENT

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Zainal Arifin (2016: 26)
Elaine B.Jhonson dalam pengutipan A.Chaedar Alwasilah, (2010: 42-57)