

## Improved Science Learning Outcomes of SD Integral Hidayatullah Tuban Students in Online Learning (on-line) through zoom, Whatsapp, Google classroom

Fendi Andianto<sup>a\*</sup>, Tabitha Sri Hartati Wulandari<sup>b</sup>

<sup>a</sup>Program Pascasarjana pendidikan Biologi, Universitas PGRI Ronggolawe, Tuban, Indonesia

<sup>b</sup>Universitas PGRI Ronggolawe, Tuban, Indonesia

\*e-mail address: fendiandianto90@gmail.com

---

### Abstract

The background of this research is the existence of decreased learning outcomes with the online learning model (on-line). This study aims to improve student learning outcomes in online-based science learning during the Covid-19 pandemic at Islamic elementary school in semanding. This research is a classroom action research with the research subjects of grade V Islamic elementary school in semanding total of 20 students. The online learning method used is through Zoom, Whatsapp and Google classroom. This research was conducted from July to December 2020. The study was conducted in 2 cycles, each of which consisted of planning, implementing, observing, and reflecting. Data collection techniques using descriptive analysis techniques. Data collection in the form, a list of student learning outcomes and observation sheets. The results showed that there was an increase in student learning outcomes shown in cycle I an average of 67.50 learning outcomes, which experienced completeness of 10 people (50%) and an increase in cycle II is shown an average learning outcomes of 78.63, which experienced completeness of 18 people (90%). This shows an increase in learning outcomes. The conclusion is that online learning with the Zoom, Whatsapp, Google Classroom method can improve learning outcomes for learning science at SD Integral Hidayatullah Tuban.

*Keywords* : Learning outcomes, online learning;

---

### 1. Introduction

The Covid-19 pandemic has an impact on the world of education, including junior secondary education. The existence of this corona virus outbreak hinders teaching and learning activities that usually take place face-to-face. Even so, this pandemic was able to accelerate education 4.0. The learning system is carried out remotely by utilizing information technology. However, there are major challenges in implementing the distance learning model. One of them is that many teachers are not used to using a blended and completely online learning system.

The online learning system (in a network) is a learning system without face-to-face learning between teachers and students but is carried out online using the internet

network. Teachers must ensure teaching and learning activities continue, even though students are at home. The solution, teachers are required to be able to design learning media as an innovation by utilizing online media (online).

This is in accordance with the Minister of Education and Culture of the Republic of Indonesia regarding Circular Number 4 of 2020 concerning Implementation of Education Policies in the Emergency of the Spread of Corona Virus Disease (Covid-19).

The learning system is implemented through a personal computer (PC) or laptop connected to an internet network connection. Teachers can learn together at the same time using groups on social media such as WhatsApp (WA), telegram, zoom applications or other media as learning media. Thus, the teacher can ensure students take part in learning at the same time, even in different places. (Harnani, 2020).

All sectors feel the impact of corona. Education is one of them. Judging from the surrounding events that are happening, both students and parents who do not have cellphones to support online learning activities feel confused, so the school is also looking for solutions to anticipate this. Some students who do not have cellphones learn in groups, so they do learning activities together. Start learning through video calls that are connected with the teacher in question, being asked questions one by one, to taking attendance through VoiceNote available on WhatsApp. The materials are also given in the form of a video which is less than 2 minutes long.

Online learning cannot be separated from the internet network. Internet network connection is one of the obstacles faced by students whose living quarters are difficult to access the internet, especially since these students live in rural, remote and underdeveloped areas. Even if someone uses a cellular network, sometimes the network is unstable, because the geographical location is still far from the range of cellular signals. This is also a problem that often occurs in students who take online learning so that the implementation is not optimal.

SD Integral Hidayatullah Tuban also carries out online learning for the 2019/2020 academic year odd semester by following Circular Number 4 of 2020 of the Ministry of Education and Culture, in this circular it is stated that the purpose of implementing Learning From Home is to ensure the fulfillment of students' rights to get educational services during the Covid-19 emergency, protecting education unit residents from the adverse effects of Covid-19, preventing the spread and transmission of Covid-19 in educational units and ensuring the fulfillment of psychosocial support for educators, students, and parents.

Constraints faced by students of SD Integral Hidayatullah Tuban, especially grade V based on the reflection of the learning process that has been running, found several obstacles, namely: 1) the learning model applied was not appropriate for online learning; 2) the unavailability of student worksheets that can be accessed by students so that learning is more focused; 3) assignments that do not vary, so that students feel overwhelmed by assignments; 4) the learning model applied is not based on activating students; 5) expensive internet network; 6) there are some students who do not have cellphones; 7) students are not prepared to learn independently, because sometimes parents do not have time to guide students to study.

Appropriate learning during the Covid-19 pandemic is learning that carries out collaboration, innovation and experimentation. Furthermore, the Minister of Education and Culture also gave seven tips for learning from home which included dividing the class into small groups and trying the Project Based Learning (PjBL) model / method

because it trains students to collaborate, mutual cooperation and empathy. (Yuliana, 2020). The project-based learning model or Project Based Learning mentioned by the Minister of Education and Culture is a learning model that makes students active and independent in learning. Project-based learning model is a learning model that can be used to apply existing knowledge, train various thinking skills, attitudes, and concrete skills. Whereas in complex problems, learning is needed through investigation, collaboration and experimentation in making a project, as well as integrating various subjects (materials) in learning. By applying a project-based learning model it is expected to train independence, collaboration and experimentation in students. As stated by Sucilestari and Arizona (2018) project-based learning is an in-depth investigation of a topic from the real world. Well-designed projects ask students to solve real problems and important issues that occur in everyday life, especially in the learning process. Thus, the projects built by students are based on observations of real-world problems around them that will provide meaning to them. Arizona, et al. (2020). Project-based online learning systems provide many opportunities to access teaching materials by learning citizens. Abidin (2020) also explains that through project-based online learning, students can have meaningful learning so that their knowledge and knowledge can be of benefit as a problem solver. It is hoped that by applying the PjBL learning model students can create something new, which is an ability that is developed through acquisition from the teacher during the learning process so that they are able to create new combinations (Sari, 2018). students can have meaningful learning so that the knowledge and knowledge they have can be of benefit as a problem solver. It is hoped that by applying the PjBL learning model students can create something new, which is an ability that is developed through acquisition from the teacher during the learning process so that they are able to create new combinations (Sari, 2018). students can have meaningful learning so that the knowledge and knowledge they have can be of benefit as a problem solver. It is hoped that by applying the PjBL learning model students can create something new, which is an ability that is developed through acquisition from the teacher during the learning process so that they are able to create new combinations (Sari, 2018).

Based on this, there is a need for effective learning to be applied to students to increase their competence. Moreover, the impact of the Covid-19 pandemic that hit so that learning did not run optimally because they had to stay at home and apply physical distancing. So that project-based online learning becomes one of the solutions to the problems faced to answer this problem.

The objectives of this classroom action research are: 1) To find out the scenario of implementing the PjBL learning model to improve science learning outcomes in online learning ecosystem material in Class V SD Integral Hidayatullah Tuban TP 2020/2021; 2) To determine the increase in science learning outcomes after the application of the PjBL learning model to improve science learning outcomes in ecosystem material in online learning in Class V SD Integral Hidayatullah Tuban TP 2020/2021

## **2. Research Method**

This research is a type of classroom action research or Classroom Action Research. In action research it is divided into four stages, namely planning, action and observation, and reflection. The PTK model that will be used in this research is the Kemmis and Mc

Taggart models, which are carried out using 2 cycles with Subject as many as 20 students at SD Integral Hidayatullah Tuban.

The method used to obtain data is by using tests, namely in the form of giving questions or a series of tasks that must be done or answered by students in this study. The test is given to students with the intention of getting answers which are made into scoring numbers. The test contains problem solving questions that are used to measure students' knowledge. In this study, the questions in the first cycle were 10 choices and 3 essays, and in the second cycle 10 multiple choice and 2 essays.

### 3. Research Result and Discussuion

Research on improving science learning was carried out by Class V SD Integral Hidayatullah Tuban TP 2020/2021 with online learning during the Covid-19 pandemic, on ecosystem material. The learning improvement activities were carried out in two cycles, where the first cycle was carried out in two meetings for the second cycle, all learning was carried out online through the Whatsapp class group application and zoom.

#### 3.1 Results of Cycle I Improvements

The results of the improvement of learning cycle I carried out by Class V SD Integral Hidayatullah Tuban TP 2020/2021 in the even semester, on ecosystem materials by applying the Project Based Learning (PjBL) learning model. The results of the implementation of learning in cycle one can be seen in Fig 1.

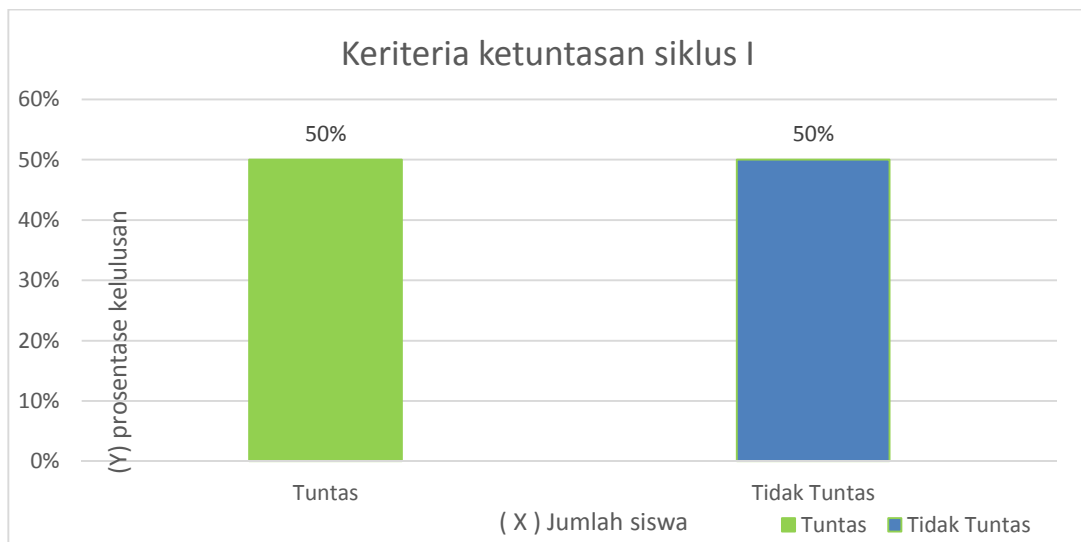


Fig. 1 The science learning outcomes are obtained Cyle I

Class V SD Integral Hidayatullah Tuban TP 2020/2021 by applying the Project Based Learning (PjBL) learning model in online learning during the Covid-19 pandemic, 50 students obtained in cycle I or around 50% and 10 people did not complete (Learning Criteria Minimum / KBM = 75) or about 50%. The findings of this study have not yet reached the classical completeness determined by the Ministry of Education and Culture 75% of students have completed. The obstacle faced at this first meeting was that students were not ready to learn independently, for that it was necessary to improve students' independent learning abilities so that students felt responsible, In line with the opinion of Rusman (2012), this learning independence needs to be given to students so that they have the responsibility to organize and discipline themselves and in developing learning abilities on their own accord. This finding is in line with the research findings of Tirtawati (2020). Students are not familiar with the online learning process, so they are mostly not independent in doing assignments, they still need a lot of guidance. Even though according to Brata, et al. (2019) learning outcomes are influenced by student independence, especially the aspect of self-control. Siswanto, et al (2012) stated that one of the factors that influence learning is readiness. Readiness is the willingness to respond, so it must be considered in the learning process. With the readiness to learn,

The next obstacle needs to be increased by whatsapp and zoom group discussions led by the teacher, teacher-led discussions are expected to make it easier for students to solve problems faced in the teaching and learning process, according to Sanjaya (2009) states that the discussion method is interpreted as a strategy to deliver learning materials that involve students actively discuss and find alternative solutions to a topic of discussion. In the conversation, the speakers must not deviate from the subject, namely the problem that they want to find an alternative solution to. According to Gunawan. et al (2020) The obstacles that most often arise during the implementation of online learning are internet packages that are not owned by students, limited internet access by lecturers and students, and being unfamiliar with online learning., but in this study it was not found in cycle I. It is hoped that in the improvement of cycle II learning, the increase in the role of teachers in guiding online learning is improved, according to Yuliana & Bahari (2020) Teachers have an important role in implementing e-learning because the teacher is the party who provides direction in the process. learning. Teachers strongly support the use of e-learning during the learning process, because it is considered to facilitate the teaching and learning process.

### *3.1 Results of Cycle II Improvement*

Cycle II is carried out based on the findings of learning weaknesses in cycle I, improvements in this second cycle include: 1) discussion on Whatsapp groups is more enhanced to help students who are constrained by the teaching and learning process; 2) systematic and clear LKPD improvement that fosters active learning of students, after making improvements to learning then given a test to measure the achievement of learning. The results of the implementation of learning in cycle II can be seen in Fig 2.

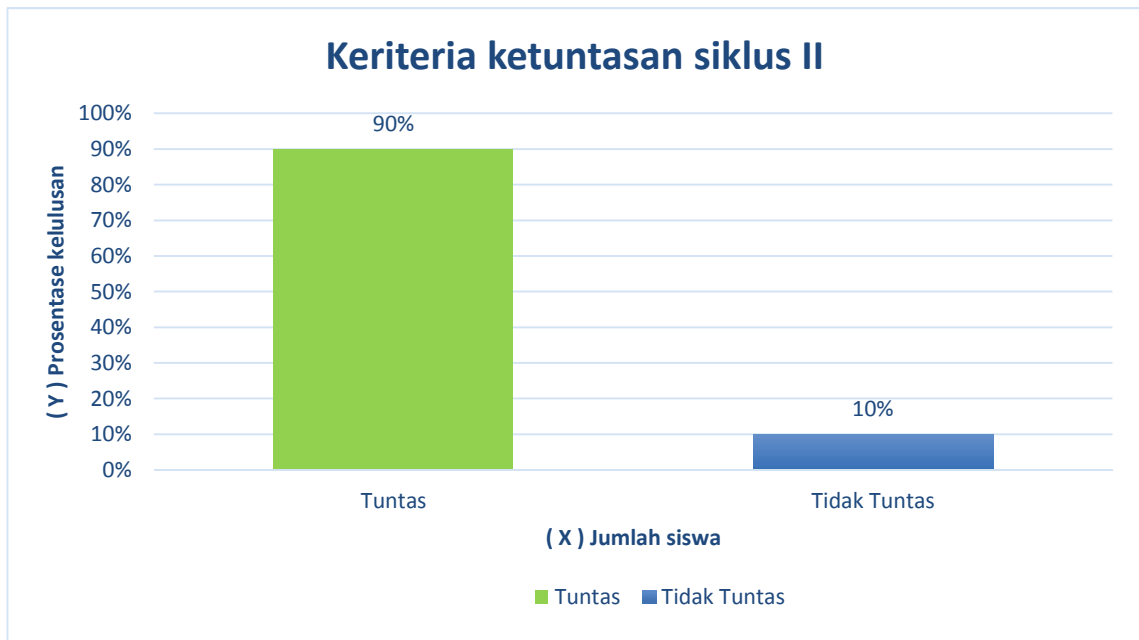


Fig. 2 The science learning outcomes are obtained Cyle II

The research findings in the second cycle obtained as many as 18 people completed or about 90% and as many as 2 people did not complete or about 10%, the findings of this study indicate that the learning in the second cycle has been completed classically by applying the project based learning (PjBL) learning model with online learning during the Covid-19 pandemic. The findings of this study that PjBL can foster students 'problem-solving skills, according to the findings of Simatupang & Ionita (2020) research there is a positive effect of the PjBL learning model on students' problem solving abilities. It can be concluded that the application of the project based learning (PjBL) learning model can improve student learning outcomes in Class V SD Integral Hidayatullah Tuban TP 2020/2021 with online learning during the Covid-19 pandemic, on ecosystem materials, by using the Project Based Learning model on Environmental Pollution material. Noor, et al. (2017) revealed that e-learning learning in project-based learning was significantly effective in achieving spiritual attitudes, social attitudes, projects, products and students' learning completeness. Based on the various research results presented above, project-based online learning can be a solution in optimizing learning, especially in the midst of the Covid-19 pandemic.

The project-based learning model is an alternative learning model that can be implemented to foster life skills of students in schools, especially in science-related learning. In line with the research results of Chasanah, et al. (2016) who found that learning with the PjBL model was effective than conventional learning models in improving learning outcomes in the form of students' creative thinking abilities and science process skills. Because according to Handayani, L (2020) students are motivated to carry out project work carried out, which is done without any burden and produces maximum results. Finally, it can be concluded that project based learning is

able to contribute to the development of students' creativity, internal motivation and interest, responsibility, communication skills with others, social skills, teamwork, and problem solving abilities. In addition, students who are involved in project based learning are given authentic projects that aim to help students create concepts that have been taught and how these concepts apply to the real world (Shin, 2018).

#### 4. Conclusion

The conclusions in this study are; In the first cycle as many as 10 people or about 50% and as many as 10 people were incomplete or about 50%; and In the second cycle as many as 18 people completed or about 90% and as many as 2 people did not complete or about 10%. It can be concluded that the application of the online learning model can improve the learning outcomes of Class V SD Integral Hidayatullah Tuban TP 2020/2021 with online learning during the Covid-19 pandemic, the ecosystem material has increased.

#### References

- Abidah, A., Hidayatullaah, HN, Simamora, RM, Fehabutar, D., & Mutakinati, L. 2020. The Impact of Covid-19 to Indonesian Education and Its Relation to the Philosophy of "Merdeka Belajar." *Studies in Philosophy of Science and Education*, 1 (1), 38-49. <https://doi.org/https://doi.org/10.15408/sjsb.s.v7i3.15104>
- Ali Sadikin, AH 2020. Online Learning Amid the Covid-19 Outbreak. *BIODIK: Scientific Journal of Biological Education*, 6 (2), 214-224.
- Bao, W. 2020. COVID-19 and online teaching in higher education: A case study of Peking University. *March*, 113-115. <https://doi.org/10.1002/hbe2.191>
- Chan, F. 2017. Teacher Implementation Using the Game On . *Method Science Lessons in School. Journal of Basic Education Gentala*, 2 (1), 106-123. <https://doi.org/10.22437/gentala.v2i1.6821>
- Dewi, WA 2015. The Impact of Covid-19 on the Implementation of Online Learning in Elementary Schools. *Educative: Journal of Educational Sciences*, 2 (1), 55-61.
- Fatimah. 2017. Improving Student Learning Outcomes in Natural Science Learning with the Demonstration Method in Class V SDN 10 Biau. *Tadulako Creative Journal Online*, 5 (4), 85-96.
- Khasanah, DRAU, Pramudibyanto, H., & Widuroyekti, B. 2020. Education During the Covid-19 Pandemic. *Journal of Synesthesia*, 10 (1), 41-48.
- Kumar, V., & Nanda, P. 2018. "Social Media in Higher Education." *International Journal of Information and Communication Technology Education*. <https://doi.org/10.4018/ijicte.2019010107>
- Lee, A. 2020. Wuhan novel coronavirus (COVID-19): why global control is challenging? *Public Health*, January, 19-21. <https://doi.org/https://doi.org/10.1016/j.puh.e.2020.02.001>
- Megawati. 2018. The Importance of Accomodating Learning Experiences in Science Learning. *Tunas Pendidikan Journal*, 1 (1), 21-30.
- Murfi, Ali. Fathurrochman, Irwan. Atika. Nora Saiva Jannana, 2020. "School Leadership in Covid-19 Crisis Situations in Indonesia," *Manageria: Journal of Islamic Education Management*, Volume 5, Number 1, May 2020
- Mustakim. 2020. The Effectiveness of Online Learning Using Online Media during the Covid-19 pandemic in Mathematics Subjects. *Al Asthma: Journal of Islamic Education*, 2 (1), 1-11.
- Obiakor, T., & Adeniran, A. 2020. Covid-19: Impending Situation Threatens To Deepen Nigeria's Education Crisis. *Center For The Study Of The Economies Of Africa*.

- Purwanto, A., Pramono, R., Asbari, M., Santoso, PB, Wijayanti, LM, Hyun, C. C., & Putri, RS (2020). Exploratory Study of the Impact of the COVID-19 Pandemic Against the Online Learning Process in Elementary Schools. *Journal of Education, Psychology, and Counseling*, 2, 1–12.
- Rachmawati, Y., Ma'arif, M., Fadhillah, N., Inayah, N., Ummah, K., Siregar, MN, Auliyah, A. 2020. Exploration Study of Science Education Learning During the COVID-19 Pandemic at UIN Sunan. *Indonesian Journal of Science Learning*, 1 (1), 32-36.
- Sun, L., Tang, Y., & Zuo, W. 2020. Coronavirus pushes online education. *Nature Materials*, 20200205. <https://doi.org/10.1038/s41563-020-0678-8>
- Triton. 2006. *SPSS 16.0 Applied, Parametric Statistical Research*. Yogyakarta: Andi.
- Verawardina, U., Asnur, L., Lubis, AL, & Hendriyani, Y. 2020. Online Reviewing Learning Facing the Covid-19 Outbreak. 12 (3), 385–392.
- Yurianto, Ahmad, Bambang Wibowo, KP 2020. Guidelines for the Prevention and Control of Coronavirus Disease (COVID-19). MI Listiana Azizah, Adistikah Aqmarina (ed.).
- Zhang, W., Wang, Y., Yang, L., & Wang, C. (2020). Suspending Classes Without Stopping Learning: China's Education Emergency Management Policy in the COVID-19 Outbreak. *Risk and Financial Management*, 13 (55), 1–6. <https://doi.org/doi:10.3390/jrfm13030055>