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**THE USE OF GADGET-BASED INTERNET TO IMPROVE LEARNING  
INDEPENDENCE, MOTIVATION AND OUTCOMES  
FOR ELEMENTARY SCHOOL STUDENTS**

**Yosepha Armiyati, Hairida, Antonius Totok Priyadi**

Universitas Tanjungpura, Pontianak, Indonesia

E-mail: [atiyosephaarmiyati01@gmail.com](mailto:atiyosephaarmiyati01@gmail.com)

**Abstract**

This study explained the increase in learning independence, learning motivation, and learning outcomes in science learning through gadget-based internet for fifth-grade students. The study was a classroom action research conducted at an elementary school. The number of participants was 25 students. Data collection was carried out using an observation sheet, test questions, questionnaires, and documentation. The results and data analysis indicated that the use of gadget-based internet could improve learning independence, motivation, and outcomes in science learning. The increase in student's learning independence can be seen from the first cycle as much as 16%, second cycle 36%, and third-cycle students who have high learning independence again increased to 60%. The increase of student's learning motivation can be seen from the first cycle as much as 36%, second cycle 48%, and third-cycle students who have high learning motivation again increased to 64%. The increase in student's learning outcomes can be seen from the first cycle. It was obtained that 60% had reached learning standard, the second cycle 76% had reached learning standard, and the third cycle, 88%, reached learning standards.

**Keywords:** *Internet, Gadgets, Learning Independence, Learning Motivation, Learning Outcomes*

**Introduction**

Education is an absolute necessity for humans to build the civilization of their nation. One of the efforts that must be continuously improved is in the field of education. Education can develop knowledge and increase the potential of individuals to maintain their lives and increase their dignity. It is in accordance with Law no. 20 of 2003 concerning national education, which functions to develop capabilities and shape the character and civilization of a dignified nation in the context of the nation's intellectual life. In addition, Hartoyo (2015) also explained that good deeds, upholding justice, maintaining decency, behaving wisely and acting honestly as values that must be adhered to by humans need to be material for thought to be taught to students (p.9). For the implementation of education to take place properly, this needs serious attention by the government, the community, teachers and parents.

Education is inseparable from science and technology. Education in the current era must take advantage of advances in science and technology to achieve learning objectives effectively and efficiently. Advances in technology bring the younger generation, especially elementary school students, to develop and do better. Gadgets are one of today's technological developments that are consumed by middle school age or students and at elementary school age. Elementary school students can use gadgets for communication and be used to browse the internet, watch interesting learning videos, read e-books, and various other features that can

help students' activities in learning. However, it is often found that elementary school students use gadgets only to play games and watch videos that do not lead to education. To overcome these problems, the teacher's role is vital to educate students that gadgets can be used to play games and be used for fun learning. Sabri (2017) "The role of teachers to improve the quality of education is important because teachers are the front spearhead in the process of learning in the classroom. Knowledge, attitudes, and skills of teachers to be a factor supporting the success of students in learning" (p.192). The teacher's role in improving the quality of education is essential because the teacher is the spearhead in the learning process in the classroom. The knowledge, attitudes, and skills of teachers are factors that support student success in learning.

Through the Ministry of Education and Culture (Kemendikbud), the government anticipates technological developments through the school digitization program by distributing gadgets for learning facilities to 36,000 schools (Harususilo, 2019). This program aims to encourage student achievement. In 2019 Elementary Schools in the Kubu sub-district, Kubu Raya district received government assistance in the form of gadgets and devices that can be used to support the learning process. Because today learning in schools is starting to be adapted to the development of information technology, resulting in changes and shifts in the educational paradigm (Hujair, 2009). The role of media in the learning process is crucial because it can help the learning process become more meaningful, interactive, and fun. Learning is a process of interaction between students and educators and learning resources in a learning environment to exchange information in achieving the desired goals (Rahimah, Priyadi, and Syambasril, 2018).

The interviews with colleagues who taught fifth-grade students at Public Elementary School (SDN) 01 Kubu found that some students did not respond well to the teacher's explanation. Students tend to wait for information or directions from the teacher when giving questions or group assignments. Students also rarely asked and expressed ideas or opinions. In group discussions, only a few students were active, while the others were waiting for the results from their friends. The interest of students to complete the tasks given by the teacher independently is still lacking. The results of our interview with students also obtained information that the explanations received by students in learning were still not clear, so that when they were asked to answer teacher questions or did group assignments, they became less confident. We want to improve the learning process in fifth grade at SDN 01 Kubu based on these problems. Hence, the students are interested and easy to accept the subject matter and become independent individuals and do not depend on others.

According to Rafika et al. (2017), students who have high learning independence will be motivated to learn something with their abilities without asking for help from others (p.116). According to Mudjiman (2008), student's learning independence is an active learning activity driven by the intention or motive to master a competency to overcome a problem and is built with the knowledge or competence possessed (p.1). Suppose students are guided to seek and develop their knowledge of Natural Sciences using gadget learning media. In that case, students will be independent and in accordance with students who have high curiosity to increase student motivation in learning. Motivation is a change in energy in a person marked by the emergence of feeling and preceded by a response to the existence of a goal (Sardiman, 2006, p.198).

Based on the results of the researcher's discussion with colleagues in the Teacher Working Group (KKG) of Kubu District, the researchers are interested in utilizing government aid gadgets to improve the learning process to improve independence, motivation, and student's learning outcomes increased. For this reason, it is essential to research the use of internet-based gadgets to increase independence, motivation and learning outcomes in K-13 thematic learning of science materials for fifth-grade students of SDN 01 Kubu. Through this classroom action research, it is hoped that students' independence, motivation, and learning

outcomes in K-13 thematic learning of science materials in fifth grade of SDN 01 Kubu will increase.

The aims of this study are to 1) Explain increasing learning independence in the thematic learning of K-13 through the use of gadget-based internet for fifth-grade students at SDN 01 Kubu, 2) Explaining the increase in learning motivation in K-13 thematic learning through the use of internet-based gadgets for fifth-grade students of SDN 01 Kubu, 3) Explaining the improvement of learning outcomes in K-13 thematic learning of science materials through the use of internet-based gadgets for fifth-grade students of SDN 01 Kubu.

### Research Method

The research method used in this study was classroom action research. Classroom Action Research, which means action research conducted in the classroom. This study aims to solve a problem that exists in the learning process and improve learning outcomes in the classroom. Classroom action research is research conducted by teachers in their classrooms through self-reflection to improve performance as teachers so that student's learning outcomes increase (Wardani and Wihardit, 2008). The idea of action research was first developed by Kurt Levin in 1946, who introduced four steps: planning, action, observation, and reflection (Sani & Sudiran, 2016).

Moleong (2013) stated that the research subjects are informants providing information, which means people who are empowered to provide information about the place/research variables. The subjects in this study were fifth-grade students at SDN 01 Kubu, totalling 25 students, consisting of 11 boys and 14 girls. This study was conducted at SDN 01 Kubu, Kubu Raya, Indonesia.

The data collection technique is the method used by researchers in recording the required data (Suyadi, 2010). In this study, the data collection techniques used were observation, tests, indirect communication, and documentation. The instruments used to obtain data were observation sheets, test questions, questionnaires, and documentation.

To determine the level of learning independence and learning motivation, it will be classified based on the classification of categories based on the normal curve distribution using the hypothetical standard deviation formula (Azwar, 2004). it can be seen in the following table.

Table 1. Distribution Categorization

Category	Formula
Tinggi	$X \geq (\mu + \sigma)$
Sedang	$(\mu - \sigma) \leq X < (\mu + \sigma)$
Rendah	$X < (\mu - \sigma)$

Information	:	
X	:	subject score
$\mu$	:	Hypothetical mean
$\sigma$	:	Hypothetical Standard Deviation (SD)
Range	:	$X_{\max} - X_{\min}$
Hypothetical Mean	:	$(X_{\max} + X_{\min}) / 2$
Hypothetical SD	:	Range / 6

### Result and Discussion

#### Result

##### Description of Research Results in Cycle I

Based on the results of the learning independence category that has been carried out in the first cycle, it could be seen that there were 4 (16%) students who had high learning

independence, 18 (72%) students had moderate learning independence, 3 (12%) students had low learning independence. The results of the learning motivation category that had been carried out in the first cycle, it can be seen that there were nine people (36%) students had high learning motivation, 15 students (60%) students had moderate learning motivation, 1 person (4%) students had low learning motivation. Data on student's learning outcomes showed that the average score achieved by students in Cycle I reached 70.6. There were 15 (60%) students who finished studying (reaching the Minimum Completion Criteria (KKM)), while the students who did not complete studying (below the KKM) were 10 (40%) students. The percentage result has not reached the classical success indicator, which was 85% of the total number of students.

#### Description of Research Results in Cycle II

Based on the results of the learning independence category that has been carried out in the second cycle, it can be seen that there are 9 (36%) students who have high learning independence, 15 (60%) students have moderate learning independence, 1 person (4%) students had low learning independence. The results of the category of learning motivation that had been carried out in the second cycle, it could be seen that there were 12 students (48%) students had high learning motivation, 13 people (52%) students had moderate learning motivation, 0 students (0%) had low learning motivation. Data on student's learning outcomes showed that the average score achieved by students in Cycle II was 74.80. There were 19 (76%) students who finished studying (achieving the KKM), while 6 (24%) students who did not complete their studies (below the KKM). The percentage result has not reached the classical success indicator, which was 85% of the total number of students.

#### Description of Research Results in Cycle III

Based on the results of the learning independence category that had been carried out in cycle III, it could be seen that there were 15 students (60%) students had high learning independence, 10 (40%) students had moderate learning independence, 0 students (0%) had low learning independence. The results of the category of learning motivation that had been carried out in cycle III, it can be seen that there were 16 students (64%) students had high learning motivation, 9 students (36%) had moderate learning motivation, 0 students (0%) had low learning motivation. Data on student's learning outcomes showed that the average score achieved by students in Cycle III reached 80.00. There were 22 (88%) students who finished studying (achieving the KKM), while the students who did not complete their studies (below the KKM) were 3 (12%) students. The percentage of success in cycle III presented that the learning outcomes had reached the classical success indicator, which was 85% of the number of students who got a score of 70 (KKM).

#### Discussion

Discussion of research results based on data collection analysis obtained data recapitulation of increasing learning independence, learning motivation, and learning outcomes.

Table 2. Data Recapitulation of Student's Learning Independence Cycle I-III

Cycle	Category	Frequency	Percentage
I	High	4	16%
	Moderate	18	72%
	Low	3	12%
II	High	9	36%
	Moderate	15	60%

III	Low	1	4%
	High	15	60%
	Moderate	10	40%
	Low	0	0%

Table 2 indicated an increase in student’s learning independence after the action was taken. Data obtained from student’s learning independence in the first cycle there were 4 students (16%) who had high learning independence, 18 students (72%) had moderate learning independence, and 3 students (12%) had low learning independence. Then in the second cycle, students who had high learning independence increased to 9 students (36%), moderate learning independence 15 students (60%), and low learning independence 1 student (4%). Furthermore, in the third cycle, students who had high learning independence again increased to 15 students (60%), moderate learning independence 10 students (40%), and low learning independence 0 students (0%).

The increasing learning independence in students can be seen in the following figure:

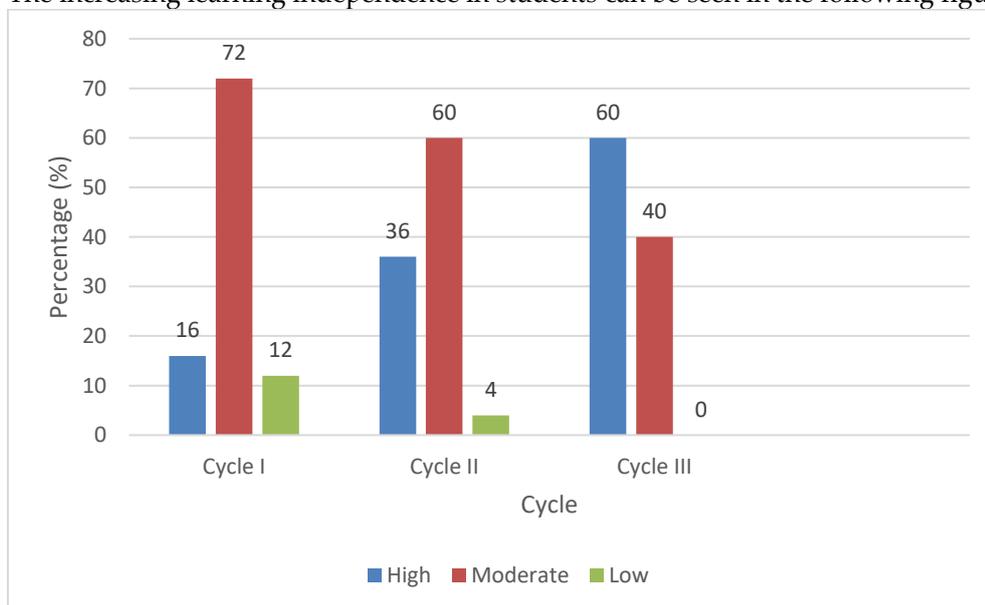


Fig.1 Improving Student’s Learning Independence Cycle I-III

Students' learning independence, which had increased each cycle, was evidence of using gadget-based internet to improve student’s learning independence. Students' learning independence increased in each cycle because, during learning activities in each cycle, teachers continued to improve the opportunities given to students to find additional information independently using gadget-based internet about science topic. Students were also given wider opportunities to discuss and compare the findings of the information they got from the internet with the results of their other friends so that students became more independent in learning and did not depend only on information obtained from the teacher.

Table 3. Data Recapitulation of Student’s Learning Motivation Cycles I-III

Cycle	Category	Frequency	Percentage
I	High	9	36%
	Moderate	15	60%
	Low	1	4%

	High	12	48%
II	Moderate	13	52%
	Low	0	0%
	High	16	64%
III	Moderate	9	36%
	Low	0	0%

The table above shows an increase in student’s learning motivation after the action. The data obtained from students' learning motivation in the first cycle there were 9 students (36%) who had high learning motivation, 15 students (60%) had moderate learning motivation, and 1 student (4%) had low learning motivation. Then in the second cycle, students who had high learning motivation increased to 12 students (48%), moderate learning motivation 13 students (52%), and low learning motivation 0 students (0%). Furthermore, in the third cycle, students who had high learning motivation again increased to 16 students (64%), moderate learning motivation 9 students (36%), and low learning motivation 0 students (0%). The increasing learning motivation in students can be seen in the following figure.

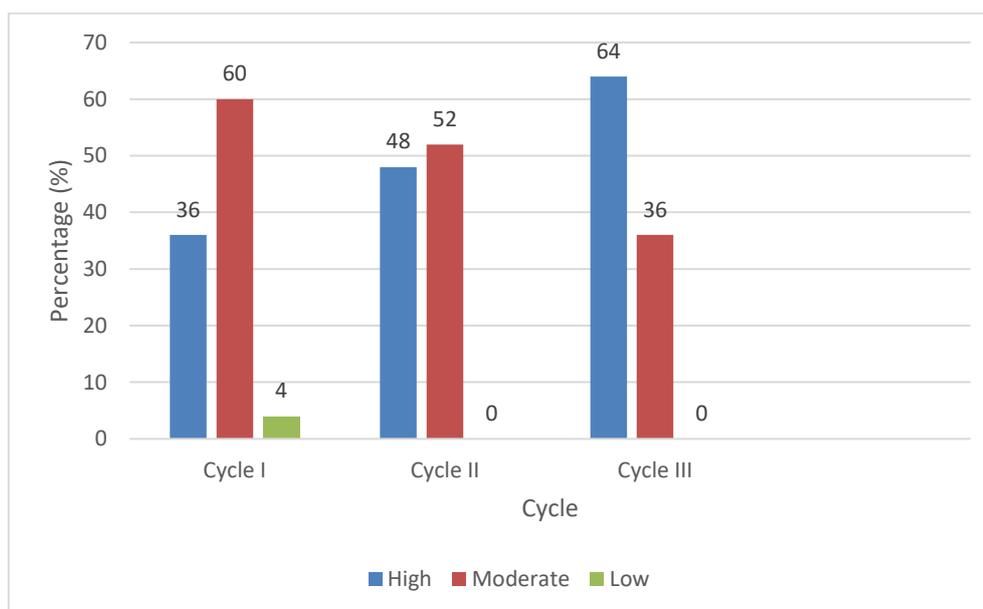


Fig. 2 Increasing Student’s Learning Motivation Cycles I-III

Student's learning motivation, which have increased in each cycle, was evidence of using gadget-based internet to increase student’s learning motivation. Student’s learning motivation increased in each cycle because during learning activities. The teacher continued to improve student’s interaction by continuously adjusting student’s discussion procedures to utilize gadget-based internet better so that students would more enthusiastic and motivated in learning.

Table 4. Data Recapitulation of Student’s Learning Outcomes Cycles I-III

Cycle	Average	Category	Frequency	Percentage
I	70.60	Pass	15	60%
		Not Pass	10	40%

II	74.80	Pass	19	76%
		Not Pass	6	24%
III	80.00	Pass	22	88%
		Not Pass	3	12%

Student's learning outcomes after using internet-based gadgets increased from the first cycle, which initially contained 60% of students completed learning, in the second cycle 76% of students completed the learning, to the third cycle 88% of students completed learning. The increase in students who complete learning from Cycle I to Cycle II is 16%, and Cycle II to Cycle III is 12%.

The mastery of student in learning during the use of gadget-based internet every cycle continued to increase. An illustration of the increase in mastery of student's learning outcomes can be seen in the following figure.

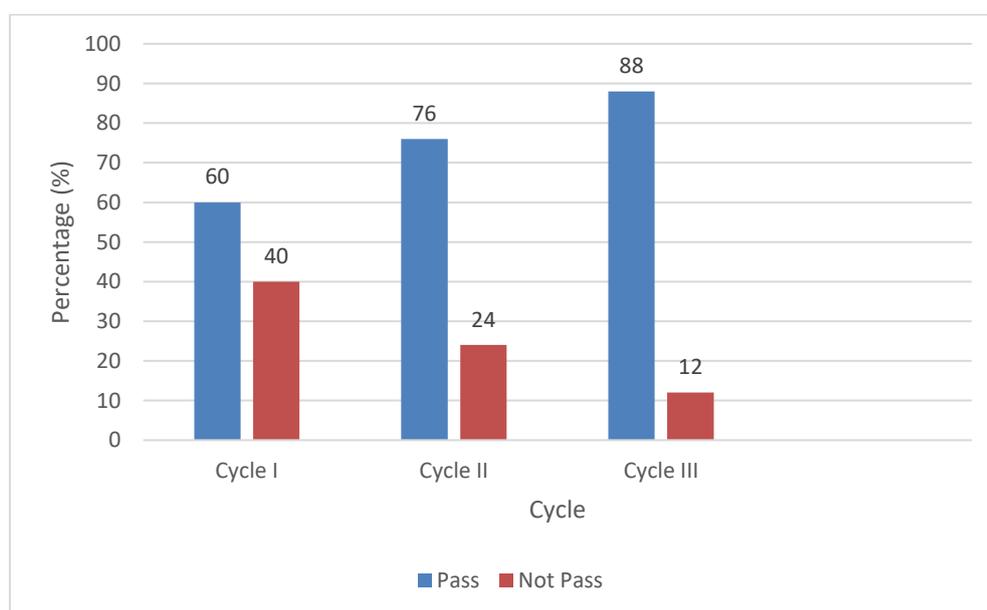


Fig. 3 Completeness of Student's Learning Outcomes Cycles I-III

Based on cycle I to cycle III research data, student's learning outcomes had improved from the beginning of learning when using gadget-based internet in K-13 learning of science and continuing to increase in each cycle. It was evidence of the success of using the gadget-based internet in improving student's learning outcomes. Student's learning outcomes increased in each cycle because, during learning activities in each cycle, teachers continued to use gadget-based internet to help students obtained the necessary information about science topic. Students were also given wider opportunities to discuss and compare the information they got with information found by other friends so that students' knowledge became wider and students increasingly master science topic.

## Conclusion and Suggestion

### Conclusion

The results showed that using the gadget-based internet could increase learning independence in learning K-13 science material in fifth-grade students of SDN 01 Kubu in the 2020/2021 academic year. Student's learning independence in the first cycle there were 4

students (16%) who had high learning independence, 18 students (72%) had moderate learning independence, and 3 students (12%) had low learning independence. Then in the second cycle, students who had high learning independence increased to 9 students (36%), moderate learning independence 15 students (60%), and low learning independence 1 student (4%). Furthermore, in the third cycle, students who had high learning independence again increase to 15 students (60%), moderate learning independence 10 students (40%), and low learning independence 0 students (0%).

The results showed that using the gadget-based internet could increase learning motivation in learning K-13 science material in fifth-grade students of SDN 01 Kubu in the 2020/2021 academic year. Student's learning motivation in the first cycle there were 9 students (36%) who had high learning motivation, 15 students (60%) had moderate learning motivation, and 1 student (4%) had low learning motivation. Then in the second cycle, students who had high learning motivation increased to 12 students (48%), moderate learning motivation 13 students (52%), and low learning motivation 0 students (0%). Furthermore, in the third cycle, students who had high learning motivation again increase to 16 students (64%), moderate learning motivation 9 students (36%), and low learning motivation 0 students (0%).

The results showed that using gadget-based internet improve learning outcomes in learning K-13 science material in fifth-grade students of SDN 01 Kubu in the 2020/2021 academic year. Completeness of student's learning outcomes in the first cycle obtained 15 students (60%) completed learning, the second cycle 19 students (76%) completed learning, and the third cycle 22 students (88%) completed learning. The increase in students who complete learning from cycle I to cycle II is 16%, from cycle II to cycle III is 12%.

### *Suggestion*

Based on the conclusions of the study, some suggestions can be given as follows. It is recommended for teachers to improve skills in using gadgets as learning media. Learning will be of higher quality and increase learning independence, learning motivation, and student's learning outcomes. It is recommended for students to use gadgets to find additional information on lessons and not only use them to play. For parents to supervise their children using gadgets while at home, students are proficient in using them for positive things such as finding information on children's subject matter. For the next researcher who will conduct research similar to this research, the results of this study can be used as a reference. It is recommended to add or look for other variables to add scientific insight about things that can increase learning independence, motivation, and student's learning outcomes.

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