

The Effectiveness of Using Google Form Assisted Student Worksheets in Increasing Learning Independence and Student Mathematic Communication Skills in SMP Negeri 5 Langsa

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Abstract

Changes in the way students learn which until now have decreased, especially in communicating story problems in the form of mathematics. This problem is increasingly seen when students have to study remotely due to the Covid-19 pandemic, the limited knowledge of parents or guardians of students at home who do not all go to school adds to these problems are more complete, so we need a method or method that can increase interest in learning and communication skills. Mathematical students. So that the goal in this study is to analyze whether the use of google form assisted student worksheets can increase student learning independence, and to accurately determine the level of mathematical communication skills of students taught using google form assisted student worksheets during the Covid-19 pandemic. The subjects in this study were all students of SMP Negeri 5 Langsa class VIII, totaling 87 students, and the object of this study was the effectiveness of using google form assisted student worksheets. This type of research is descriptive qualitative with qualitative and quantitative approaches. The results in this study indicate that there are 7 students (8.05%) the level of student independence is high, and 71 students (81.61%) are classified as moderate and 9 students (10.34%) are classified as low. For the mathematical communication skills of students who are taught using LKS media assisted by google form is classified as better compared to students before being taught with LKS media assisted by google form, overall students can solve problems properly, correctly and completely.

Keywords

independence, communication, mathematics, google form



I. Introduction

The spread of the corona virus in 2019 (Covid-19) is so fast that various countries must immediately take various policies, including Indonesia, the policies taken by the Indonesian government include limiting large allowances (PSBB) to closing all office and school activities. Zahrotunnimah, 2020) but over time with an increasingly deteriorating economy, Indonesia took a new normal step, meaning that people could carry out activities but still pay attention to health protocols, in contrast to companies or offices that must operate immediately, now schools still have to carry out distance learning in order to minimize its spread at the school level, however the problems that occur in the field are many students, Parents and teachers who complain about distance learning, ranging from network problems, quotas, devices to decreased student learning independence, often create gaps between students and parents often causing violence in learning at home.

Suddenly distance learning must be ready for all educational stakeholders, from students, parents, teachers and schools, schools must be ready to bridge the problems of teachers in delivering learning to students starting from providing internet quotas, gadgets or computers that can make it easier teachers in distributing questions and learning, and teachers must be able to use information and communication systems according to the times, so that students are more independent in distance learning. The use of student worksheets (LKS) is believed to be able to facilitate the learning process, creative and innovative worksheets in distance learning are expected to increase student learning independence.

Many factors can affect student learning independence, from the learning methods used by teachers to fun learning media such as the use of student worksheets (Trisna BN, et al. 2017). Student Worksheets (LKS) are one of the learning media that teachers can use in increasing student interest in learning, such as by adding learning lessons, to displaying images contextually (Bhakti YB and Haryonik Y, 2018). In addition to students 'interest in learning, an important thing in mathematics learning is students' mathematical communication skills.

Students' mathematical communication skills are needed because mathematics is a language which means that every student can communicate using mathematical language, when a student is able to communicate his ideas in mathematical form, then the student will find it easier to solve problems related to mathematics ranging from simple to complex (Priyanda R, 2019).

According to Hasbullah (2018) communication is the process of sending messages from one party to another through certain contexts such as intrapersonal communication, interpersonal or interpersonal communication, group communication or organizational communication and mass communication. When communication takes place in the context of group communication or organizational communication, it will have its own communication network or pattern.

Mathematics is an educational tool used to convey concepts so that humans more easily solve problems. By learning mathematics, humans increasingly know how to provide opportunities to develop good mindsets, increase self-confidence, beautify and improve the quality of life values, sharpen objective attitudes and be open to the times. Mathematics is generally formed from human experience in an empirical world. Then the experience is processed in the world of ratios, processed analytically by reasoning in the cognitive structure so that mathematical concepts are formed so that these concepts are easily understood by others and can be manipulated appropriately, so use mathematical language or mathematical notation of global value (Tarigan et al, 2020).

Teaching in the context of the standard educational process is not just about delivering subject matter, but also as a process of regulating the environment so students learn. Other meanings of teaching are often termed learning. This implies that in the teaching and learning process students must be used as the center of the activity. This is intended to shape the character, civilization, and improve the quality of life of students. Learning is a complex process that occurs in everyone and lasts a lifetime, from a baby (even in the womb) to a hole.

One sign that someone has learned something is a change in behavior in him. Changes in behavior are related to changes that are knowledge (cognitive) and skills (psychomotor) and those involving values and attitudes (affective). The learning process will occur well through interactive processes between students and teachers, students with students, and students with learning materials. Besides that students learn naturally, and

mental processes occur where students connect new information to relevant concepts (Rangkuti and Hasibuan, 2019).

Distance learning must also be able to improve student learning independence and students' mathematical communication skills, so a learning medium is needed that can bridge these problems. One of the learning media applications that can be used is the use of google form assisted student worksheets, using the help of google form In designing worksheets, it is hoped that it can improve students' learning independence, because it contains systematic and structured practice questions ranging from simple to difficult levels.

The use of google form is also expected to improve students' mathematical communication skills by providing descriptions of contextual questions that can be communicated into mathematical forms. Several previous studies on the use of google form in assigning assignments include mentioning, its attractive appearance so that it is easy to provide assessments can increase student motivation and interest in learning (Batubara H and Ariani, D, 2016), besides that it is also environmentally friendly because it does not use paper, and is efficient. And effective in its use (M. Iqbal, et al, 2018).

The original effectiveness of the word effective means that there is a change or result in an action as desired (Priyanda R 2019). Based on the above problems, the researcher wants to further analyze the use of student worksheets (LKS) assisted by google form in improving student learning independence and mathematical communication skills.

II. Research Methods

The subjects of this study were all students of class VIII SMP Negeri 5 in Langsa City and the number of which is 87 students, and the object of this research is the effectiveness of using student worksheets assisted by google form. This type of research is a qualitative descriptive study, by describing or explaining something that exists, both natural and man-made (Sukmadinata, Nana Syaodih. 2012). The approach taken in this research is qualitative and quantitative approaches. A qualitative approach is used in analyzing students' mathematical communication skills and to express narrative in words about phenomena that affect students' mathematical communication skills in learning (Sugiyono, 2010).

The research procedure consisted of three stages, the first stage was pre-field training, the second stage was implementation and the third stage was data analysis. The implementation procedure is further explained in Figure 1 below.

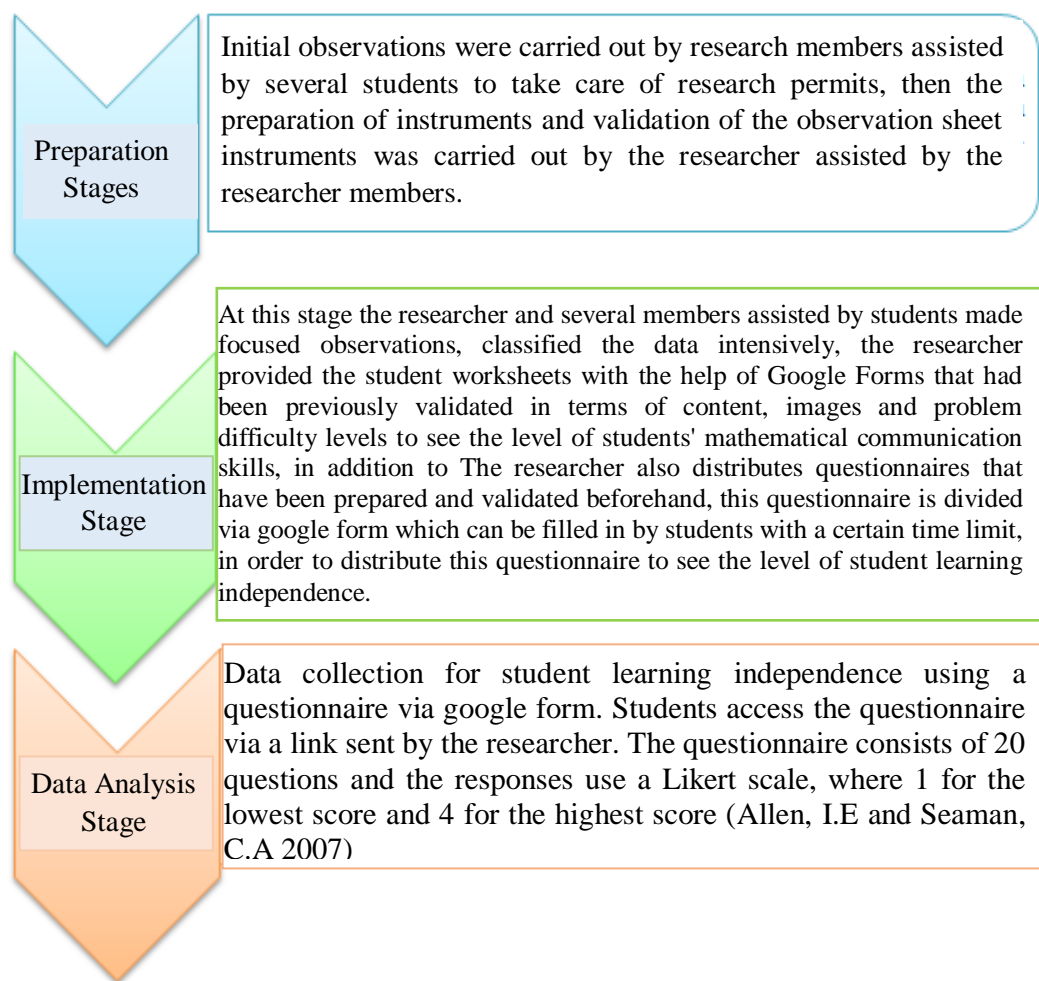


Figure 1. Research procedure

In figure 1 above, it can be seen that the implementation procedure is carried out with initial observations made by research members assisted by several students to then take care of research permits, then the preparation of instruments and validation of the observation sheet instruments is carried out by researchers assisted by members of the researcher, the next step is the implementation of researchers assisted by members and several Students make focused observations, classify data intensively, researchers also distribute questionnaires that have been compiled and validated previously, this questionnaire is used to see student responses about mathematics student worksheets assisted by Google Forms, the last step is that researchers perform data analysis according to data analysis techniques and then describe and compile the research results.

III. Result and Discussion

The results of student learning independence are tabulated in table 1 below.

Table 1. Results of Student Learning Independence

No.	Interval	Frequency	Cumulative Frequency (%)
1	30 - 34	9	10.34
2	34 - 39	10	11.50
3	40 - 44	12	13.79
4	45 - 49	10	11.50
5	50 - 54	12	13.79
6	55 - 59	27	31.03
7	60 - 64	7	8,05
Amount		87	100

Based on table 1 above, it can be seen that the average level of student independence is 48.49 which is classified as moderate. Furthermore, the data on student learning independence are categorized into high, medium and low, namely as follows:

Height: $x \geq 59$

Medium $34 \leq x < 59$

Low < 34

In more detail, the results of the data on student learning independence can be presented in table 2 below:

Table 2. Category Student learning independence

No.	Category	Frequency	Percentage (%)
1	High	7	8,05
2	Moderate	71	81.61
3	low	9	10.34
Total		87	100

In table 2 above it can be concluded that there are 7 students (8.05%) high level of student independence, and 71 students (81.61%) classified as moderate and 9 students (10.34%) students classified as low. Furthermore, student learning independence can be seen in figure 2 below:

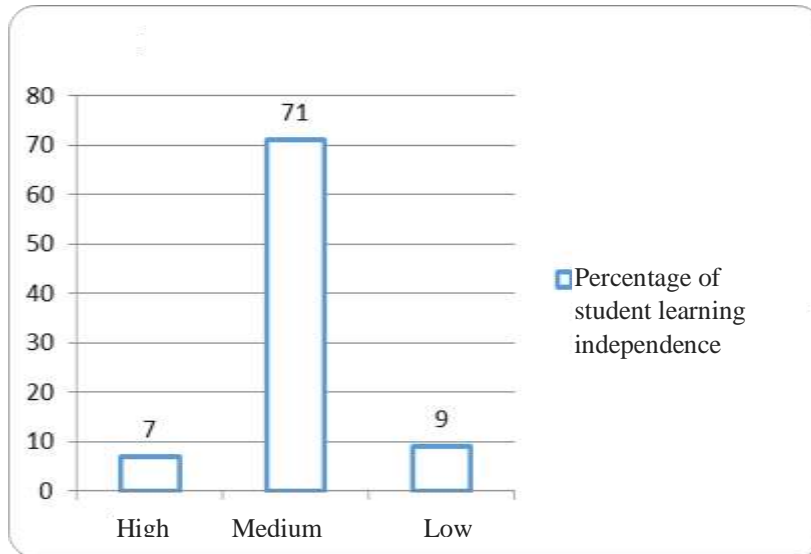


Figure 2. Percentage of student learning independence

In figure 2, it can be seen that the difference in student learning independence, where classically the students' learning independence is classified as moderate (good). In addition to seeing the independence of student learning, researchers also analyzed students' mathematical communication skills by looking at the processes for completing student answers as a whole and comparing with the student's answer process before using student worksheets assisted by google form. The result is that students can complete the questions correctly and completely compared to before using worksheets assisted by google form. Before using the LKS assisted by google form, students can solve the questions correctly but are incomplete and some students answer incorrectly in solving the questions

Google Forms Assisted Student Worksheet Products

The following is an example of using google form assisted student worksheets that have been validated and tested on students at SMP Negeri 5 Langsa

Perhatikan Lembar kerja berikut, ikuti prosedur dan lengkapi Data-data yang kosong *

LEMBAR KERJA SISWA 1

Topik : Sistem Persamaan Linear Dua Variabel

1. Dhién membeli tiga kue Timphan dan seKue Bhoi seharga Rp. 5.000,- sedangkan Muthia membeli dua Kue Timphan dan dua Kue Bhoi seharga Rp. 6.000,- Berapa harga kue Timphan dan kue Bhoi?

Cara Substitusi:
 Misalkan x = Kue Timphan dan y = Kue Bhoi
 $\dots x + y = 5.000$ (1)
 $\dots x + \dots y = 6.000$ (2)
 Diselesaikan dengan substitusi
 $\dots x + y = 5.000$
 $y = 5.000 - \dots x$ (1) substitusikan ke persamaan (2)
 $\dots x + \dots y = 6.000$ (2)
 $\dots x + \dots (5.000 - 3x) = 6.000$
 $\dots x + \dots - \dots x = 6.000$
 $\dots x = \dots$
 $X = \dots$
 Jadi harga Kue Timphan adalah

$\dots x + \dots y = 6.000$ (2)
 $\dots x = 6.000 - \dots y$
 $x = \dots$ substitusikan ke persamaan (1)
 $\dots x + y = 5.000$
 $\dots + y = 5000$
 $\dots y = \dots$
 $Y = \dots$
 Jadi harga Kue Bhoi adalah



Figure 3. Example of using google form assisted student worksheets

In figure 3, it can be seen that the solution steps have been arranged systematically and structurally which can make it easier for students to communicate in mathematical form, and students will also be more interested because the appearance presents the problem in actual form or contextually.

IV. Conclusion

The results in this study indicate that there are 7 students (8.05%) the level of student independence is high, and 71 students (81.61%) are classified as moderate and 9 students (10.34%) are classified as low. For the mathematical communication skills of students who are taught using LKS media assisted by google form is classified as better compared to students before being taught with LKS media assisted by google form, with the results of students being able to solve questions properly, correctly and completely.

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