

Development of Google Form-Based Learning Assessment to Improve Learning Motivation of Grade V Elementary School Students

Wahono, Tri^{1*}, Su'ad² & Madjdi, Achmad Hilal³

^{1,2,3}Faculty of Teacher Training and Education, Universitas Muria Kudus, Indonesia

*Corresponding author email: triwahono755@gmail.com

Received: 15 August 2022; Revised: 29 August 2022; Accepted: 31 August 2022; Available Online: 21 September 2022

Abstract: This study aims to determine the effectiveness, efficiency and practicality of the google form-based assessment model in the Sidotopo Cluster, Karangtengah District. This type of research is Research and Development with an experimental method of non-randomized subject pre-test post-test control group design. The number of student respondents at Public Elementary School Gugus Sidotopo, Karangtengah District, is 289. Data collection techniques with documentation, interviews, observations, and tests. Analysis of the data used is quantitative analysis. The results of this study showed that the highest score obtained in the control group was 84, and the lowest score was 55, with an average of 67. The highest score obtained in the experimental group was 93, and the lowest score was 67, with an average value of 80 indicating that the average value of the experimental group was greater than the control group, which experienced a significant difference. The data from the t-test shows that $t_{count} > t_{table}$ ($26.772 > 1.973$) and the N-Gain value is in the high category, and the interpretation is very effective. Based on this research, it is suggested that to improve student learning outcomes using google form-based learning assessment on affective assessment includes attitudes, interests, discipline and cognitive assessment includes four essential competencies. 973), the N-Gain value is in the high category, and the interpretation is very effective. Based on this research, it is suggested that to improve student learning outcomes using google form-based learning assessment on affective assessment includes attitudes, interests, discipline and cognitive assessment includes four essential competencies 973), and the N-Gain value is in the high category, and the interpretation is very effective. Based on this research, it is suggested that to improve student learning outcomes using google form-based learning assessment on affective assessment includes attitudes, interests, discipline and cognitive assessment includes four essential competencies.

Keywords: Google Form, Learning Assessment, Learning Motivation

1. Introduction

The development of science and technology in the 21st century is overgrowing. Teachers are expected to equip students with higher-order thinking skills, creativity, innovation, communication skills, problem-solving, and character. The urgency of planting these skills is expected that teachers can design learning that can accommodate these skills (Hakim et al., 2016). Therefore, to determine the success of the learning process, the teacher can be obtained through an assessment that measures students' cognitive, affective and psychomotor abilities (Astriani, Utaminingsih, & Surachmi (2021). However, in learning activities, several problems often encountered include inadequate learning facilities, inadequate quality and quantity of teaching staff, and systems that are still conventional. Teachers, as the key to learning, must always strive for innovation and self-improvement to achieve progress. One of the innovations that can be done is through technology, especially learning technology. Learning technology is theory and practice in the design, development, utilisation management, and evaluation of processes and resources for learning using Google Forms.

Teachers can do learning using the E-Learning method, namely learning to use information and communication technology to increase students' learning motivation (Mulatsih, 2020). Study Zaenap & Utaminingsih (2021), the use of technology in learning is considered appropriate in the technological era, where students are more interested, and learning becomes more fun. E-learning can be used as a learning innovation that can help teachers. Furthermore, Sofi & Laafon (2020) conveyed that teachers must choose the right online learning platform, especially in the new normal, so that learning can continue effectively. One of the things that teachers can use is to use Google Forms as a medium for learning. Google form is an application that is provided by Google in an accessible way to meet users' needs in the form of templates and has various functions and uses (Solihah & Guritno, 2017).

Google Form-based learning evaluation is highly recommended because it is easy and practical. Its use must always be connected to the internet (Sari & Ahsani, 2020). These results are also supported by the fact that the development of Google Forms is worthy of being used as an effective and efficient learning evaluation medium (MM, Asniati, & Anwar, 2020). Using Google Forms as a medium for evaluating student learning outcomes is effective during the Covid-19 pandemic, where learning cannot be done face-to-face. However, in the Sidotopo Cluster, there are still learning activities that have not optimised technology. One example is in evaluation activities. Most teachers still use the old method, namely a paper-based evaluation system. Learning technology as a discipline, study program, and profession continues to experience rapid development. Teachers in Sidotopo Gugus already rely on technology in their daily lives, but they have not been able to integrate this technology with learning. Some of the existing technologies that can be used for learning technology include smartphones and online computers/laptops. The low willingness of teachers and the lack of information are the causes of the lack of use of technology in learning.

Based on the results of a survey conducted by researchers on 102 5th grade student respondents in three elementary schools in the Sidotopo Cluster, Karangtengah District, Demak Regency, on March 3, the following data were obtained: Based on the results of a survey conducted by researchers on 102 5th grade student respondents in three elementary schools in the Sidotopo Cluster, Karangtengah District, Demak Regency on November 5, regarding ICT, the following data were obtained: knowing ICT was 86.28%, at home, there was a smartphone 89.21%, Smartphones owned by 90.20%, ICT as a means of information 84.31%, ICT as a learning resource 82.36, Students having their accounts 87.26%, Students having social media groups in class 88.24%, Whatsapp groups as a means study 88.24%. The purpose of this study was to disseminate google form-based assessment to improve the learning outcomes of grade 5 students in the Sidotopo Cluster, Karangtengah District.

2. Literature Review

Efforts to improve the quality of learning can be pursued by enhancing the quality of the assessment system. A good assessment system will encourage educators to determine good teaching strategies and motivate students to learn better. To see the success of the learning process, it is necessary to evaluate learning. Student assessment is one of the essential methods in the evaluation process in the education system. Various methods are adopted to understand students' learning capacity (Radha et al., 2020). Aspects of assessment include cognitive, affective, and psychomotor. This section discusses the advantages of using the Google Form platform as a medium for evaluation.

Research conducted by Simanjuntak & Limbong (2018), the results of the research carried out describes the procedure for making lecturers' performance appraisal questionnaires through Google Forms, starting from planning, manufacturing, publishing and providing instructions for use. In addition, students like the use of online surveys, which are considered easy to access, efficient, paper-saving, and have an attractive appearance. Google Form-based learning evaluation is highly recommended use because its use is easy and practical. It's just that in its use, it must always be connected to the internet (Sari & Ahsani, 2020). This opinion is also supported by Septiawan (2020) that this platform is generally used to fill data efficiently and effectively.

3. Methodology

This research design uses a nonrandomised experimental method of subject pre-test post-test control group design, where there is an experimental group and a control group that is not chosen at random (Sugiyono, 2016). This design is described as follows.

$$\begin{array}{ccccc} O_1 & & X & & O_2 \\ O_3 & & & & O_4 \end{array} \quad (1)$$

The research design carried out was a pre-test and post-test control group design. The population in this search is the 5th-grade students of Public Elementary School in the Sidotopo Cluster, Karangtengah Subdistrict, for the 2019/2020 academic year. The research samples were students of Public Elementary School No. 1 Donorejo, Public Elementary School No. 2 Donorejo, Public Elementary School Pidodo as a control class, and Public Elementary School No. 1 Batu, Public Elementary School No. 2 Batu, Public Elementary School Sampang, Public Elementary School Klitih, Public Elementary School Karangsari, Public Elementary School No. 1 Grogol, Public Elementary School No. 2 Grogol. The sampling option in this study is the Purpose sampling technique. The independent variable in the form of treatment is the use of google form-based learning assessment. The dependent variable is students' science learning outcomes. The research instrument is a test. Data collection techniques used were observation and written tests. Data analysis includes instrument test (validity and reliability test), data description, analysis prerequisite test (normality and homogeneity test), hypothesis testing using t-test and N-gain test.

4. Results

The results of the pretest and post-test can be seen in Table 1, which shows the data on the results of activities before and after learning activities in the control class and the experimental class.

Table 1: Description of Data Test

	Descriptive statistics				
	N	Minimum	Maximum	Means	Std. Deviation
Pretest	289	55.00	84.00	67.1073	5.35272
Posts	289	67.00	93.00	80.3322	5.53339
Class	289	1.00	2.00	1.6471	.47871
Valid N (by list)	289				

Based on Table 1, it is known that the control class with conventional learning with a sample of 289 students. the average was 67.1. the maximum value is 84, the minimum value is 84, and the standard deviation is 5.35. The average value of the post-test is 80.3, the maximum value is 93.0, the minimum value is 67 and the standard deviation.

4.1 Normality Test

Based on Table 3, the control class sig value is 0.014 for the experimental class of 0.93. The value of sig = 0.05. This means that all pre-test and post-test data values are normally distributed because the sig value for all classes is >0.05. So, all data are normally distributed.

Table 3: Pre-test Normality Test

		Normality Test Kolmogorov-Smirnov		
	Group Class	Statistics	df	Signature
Pre-test	Control Class	.100	102	.014
	experimental class	.086	187	.093
Posts	Control Class	.147	102	.200
	experimental class	.135	187	.081

4.2 Homogeneity Test

From the results of the homogeneity test obtained a significance of $0.808 > 0.005$, it can be concluded that H_0 is accepted and the data is homogeneous. Thus, one of the conditions (not an absolute requirement) free sample t-test, can be met. Hypothesis test T-test to test discovery learning with conventional learning on student achievement in science subjects. The result of the t-test is.

Table 4. T-test

		Paired Sample Test		
		t	df	Signature. (2-tail)
Couple 1	Pretest control	-24.121	101	.000
	Posttest control			
couple 2	Pretest Experiment	-26.772	186	.000
	Posttest Experiment			

The results of the calculations in the table are known that t-count > t-table is $26.772 > 1.973$, so it can be concluded that H_0 is rejected and H_a is accepted.

4.3 N – Gain Test

The gain test was used to compare the posttest and pretest scores. The strengthening test was carried out with the help of SPSS. The results of the gain test are shown in Table 5. Based on the results of the N-Gain score test calculation above, it shows that the average N-Gain score for the control class is 30.4480 or 30.45% is included in the medium category, with a minimum N-Gain score of 20% and a maximum of 67.5%. In comparison, the average value of N-Gain for the experimental class is 75.5411 or 75.5% in the high category. With a minimum N-Gain score of 16.00 or 16% and a maximum value of 80.95 or 81%.

Table 5: N-gain test results

		Descriptive				
N- Gain Present	Class Experiment				Statistics	Std. Error
		Means			75.5411	1.63534
		95% Confidence Interval for Mean	Lower limit	51.2970		
			Upper limit	57.7851		
		5% Trimmed Mean		55.2822		
		median		59.6875		
		Difference		272,782		
		Std. Deviation		16.51610		
		Minimum		16.00		
		Maximum		80.95		
		Means		30.4480		.96560
		95% Confidence Interval for Mean	Lower limit	28.5430		
			Upper limit	32.3529		
		5% Trimmed Mean		30.7072		
		median		31.2500		
		Difference		174.356		
		Std. Deviation		13.20438		
		Minimum		-20.00		
		Maximum		67.50		

5. Results

The results of the control class study with conventional learning with a sample of 289 students. the average was 67.1. the maximum value is 84, the minimum value is 84, and the standard deviation is 5.35. The post-test mean score is 80.3, the maximum score is 93.0, the minimum score is 67, and the standard deviation is 5.5. This shows that google form-based learning assessment can improve student learning outcomes in science subject content. It was found that $t\text{-count} > t\text{-table}$ that is $26,772 > 1.973$, it can be concluded that H_0 is rejected and H_a is accepted. This means that the google form-based learning assessment is effectively used to evaluate learning.

Research conducted by Rohatgi, Scherer, & Hatlevik (2016). The results showed the results of the t-test, the average value of learning outcomes obtained $t\text{-count} > t\text{-table}$ ($2.870 > 1.669801$, and the significance value (P) $0.006 < (0.05)$. Thus, H_0 is rejected, and H_a is accepted. This proves that the Google Form assessment media effectively improves the learning outcomes of class IX students at Public Junior High School No. 9 Purworejo. Subsequent research was conducted by Radhaswati & Santosa (2022) under the research title Development of Google Forms Based Learning Evaluation. Based on the results of research and development conducted by researchers, students gave a response of 84% very effective and efficient, 14% effective and efficient, and 4% less effective and efficient. Then 64% strongly agree, 34% agree, and 2% agree. Thus, the development of this Google Form is feasible to be used as an effective and efficient learning evaluation medium for students of the Islamic education management study program at Islamic High School Darunnajah Bogor.

The N-Gain score test above shows that the average N-Gain score for the control class is 30.4480, or 30.45% is included in the medium category, with a minimum N-Gain score of 20% and a maximum of 67.5%. In contrast, the average value of N-Gain for the experimental class is 75.5411 or 75.5% in the high category. With a minimum N-Gain score of 16.00 or 16% and a maximum value of 80.95 or 81%. This means that the google form-based learning assessment is very effectively used to improve science learning outcomes. This increased student motivation proves that learning uses media and an innovative approach. According to Carvalho et al. (2021), an innovative approach is of pedagogical importance in establishing its effectiveness in student learning, success rate and motivation.

Another opinion states that although the use of the internet has proven to be effective, teachers also need to consider the possibilities or weaknesses. Mollov (2019) argues that e-learning always depends on a strong internet connection with the high band. It is not succeeded always because of a lack of connectivity and an acute power shortage. Based on the results of research and discussion of google form-based learning assessment, it can be concluded that it can improve learning outcomes of second-semester science learning outcomes at the Public Elementary School Sidotopo cluster.

6. Conclusion

From the results of research on the development of google form-based learning assessments to improve student learning outcomes in the Sidotopo cluster, Karangtengah sub-district, it can be concluded that the test results of the effectiveness of the google form-based learning assessment on science subject matter proved effective in evaluating learning. The results of the t-test in the experimental and control groups were 26.772. The data from the t-test shows that the t-count > t-table is $26.772 > 1.973$, then H_a is accepted. Based on the t-test, it can be concluded that the use of google form-based learning assessment media has a significant difference, so the google form-based learning assessment is practical and feasible to use in science subject matter to improve student learning outcomes. in the Sidotopo Cluster, Karangtengah sub-district. The advice given by the author is that teachers should use google form-based assessment media to improve learning outcomes for science lesson content because it is effective and efficient and can be used repeatedly.

Acknowledgement

The authors would like to thank fellow authors and organizations whose intellectual properties were utilized for this study.

Conflict of Interest

The authors declare no conflicts of interest.

References

- Astriani, R. S., Utaminingsih, S., & Surachmi, S. (2021, March). Development of Ethno-mathematics based Mathematics Teaching Material Technology: A Needs Analysis. In *Journal of Physics: Conference Series* (Vol. 1823, No. 1, p. 012071). IOP Publishing.
- Carvalho, A., Teixeira, S.J., Olim, L., Campanella, S.d. and Costa, T. (2021), "Pedagogical innovation in higher education and active learning methodologies – a case study", *Education + Training*, 63(2), 195-213. <https://doi.org/10.1108/ET-05-2020-0141>.
- Hakim, A., Liliarsari, L., Kadarohman, A., & Syah, Y. M. (2016). Improvement of student critical thinking skills with the natural product mini project laboratory learning. *Indonesian Journal of Chemistry*, 16(3), 322-328. <https://doi.org/10.22146/ijc.21149>.
- MM, R. Y., Asniati, M., & Anwar, C. (2020, February). Development of google form based on scientific literacy principles for junior high school students in heat material. In *Journal of Physics: Conference Series* (Vol. 1467, No. 1, p. 012055). IOP Publishing.
- Mollov, M. A. (2019). Google classroom—an innovative approach to a more efficient organization of learning. *Математика и информатика*, 62(5), 509-516.
- Mulatsih, B. (2020). Application Of Google Classroom, Google Form And Quizizz In Chemical Learning During The Covid-19 Pandemic. *Ideguru: Jurnal Karya Ilmiah Guru*, 5(1), 16-26. <https://doi.org/10.51169/ideguru.v5i1.129>.
- Radha, R., Mahalakshmi, K., Kumar, V. S., & Saravanakumar, A. R. (2020). E-Learning during lockdown of Covid-19 pandemic: A global perspective. *International journal of control and automation*, 13(4), 1088-1099.
- Radhaswati, I. D. A. A., & Santosa, M. H. (2022). Teachers' Perceptions: the Use of Google Form as a Media to Assess Primary School Students. *EDUTEC: Journal of Education And Technology*, 5(4), 910-924.
- Rohatgi, A., Scherer, R., & Hatlevik, O. E. (2016). The role of ICT self-efficacy for students' ICT use and their achievement in a computer and information literacy test. *Computers & Education*, 102, 103-116. <https://doi.org/10.1016/j.compedu.2016.08.001>.
- Sari, N., & Ahsani, E. L. F. (2020). Pelaksanaan evaluasi pembelajaran berbasis google form selama masa pandemi pada peserta didik SD/MI. *TERAMPIL: Jurnal Pendidikan dan Pembelajaran Dasar*, 7(2), 107-118.
- Septiawan, F. (2020). The Effectiveness of the Use of Google Form in Linear Learning in Motorcycle Maintenance Lessons in Smkn 1 Koba. *Jurnal Pendidikan Teknik Mesin*, 7(2), 129-135.
- Simanjuntak, B., & Limbong, T. (2018). Using Google form for student worksheet as learning media. *International Journal of Engineering & Technology*, 7(3.4), 321-324.
- Sofi, A., & Laafon, M. (2020). Effect of using the online learning platform in teaching during the COVID-19 pandemic. *Educational practices during the COVID-19 viral outbreak: International perspectives*, 167-180.
- Solihah, M. A., & Guritno, A. (2017). University Students' Perception of Online Examination using Google Form. *Britania Journal of English Teaching*, 1(1).
- Zaenap, S., & Utaminingsih, S. (2021, March). Media Technology Takontikasi Games Based of Realistic Mathematics. In *Journal of Physics: Conference Series* (Vol. 1823, No. 1, p. 012090). IOP Publishing.