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The Effect of Learning Quiz Team Strategy on the Reasoning Ability and Mathematical Learning Outcomes of Student in the Pandemic Era

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Abstract

The problem in this study is how the Learning with Quiz Team strategy affects students' reasoning ability and mathematical learning outcomes in the pandemic era. Where this research was conducted at SMA Negeri 6 Padangisidimpuan, this study aims to determine the differences and influences of learning with the Quiz Team on the reasoning ability and learning outcomes of students in mathematics subjects at SMA Negeri 6 Padangsidimpuan. This type of research is quasi-experimental, in this study researchers used Classroom as a learning medium during a pandemic. Where the subjects in this study were students of class X-IPA SMA Negeri 6 Padangsidimpuan. The data collection tool used in this study was a test. The results of this study show that learning with the Learning with Quiz Team strategy has a significant influence on students' reasoning ability and mathematical learning outcomes by 82.05%. From the results of the SPSS test that the value of $t_{counts} > t_{table}$. t_{table} value of 1.685 is obtained from the value of N 40-2=38. Where the value of 38 has t_{table} value = 1.685. Since $t_{count} > t_{table}$ = 5,776>1,685, then H_0 is rejected H_1 is accepted. Thus, the results of this study show that learning with the Quiz Team can improve students' reasoning skills and mathematical learning outcomes in the pandemic era.

Keywords: *Team Quiz, Reasoning Ability, Learning Outcomes*

A. Introduction

Currently, the world is shocked by the outbreak of a disease caused by a virus called Corona or known as covid-19 (Coroba Virus Disease – 19) [1]. The virus, which allegedly began to spread on December 31, 2019 in the city of Wuhan, Hubei Province, China, is currently spreading almost to all corners of the world very quickly, so the WHO on March 11, 2020 designated this outbreak as a global pandemic [2]. The COVID-19 pandemic is a very dangerous outbreak for the community's life sector. Not only health, the economy and even the world of education have been greatly affected by the Covid-19 pandemic [3].

The government's sudden decision to close or move the learning process from schools/madrasahs to at home, has made many parties redundant [4]. The unpreparedness of school / madrasah stakeholders to carry out online learning is the main factor in this chaos, although the government actually provides alternative solutions in providing assessments of students as a condition for increase or graduation from educational institutions during emergency situations like today [5]. It is not only schools that have been affected by covid-19, all sectors from various fields have also experienced a very significant impact than before [6]. Learning outcomes are changes in student behavior in the form of both cognitive, affective and psychomotor aspects that will be formed from the teaching and learning process. In today's school learning practices, cognitive types of learning outcomes are more dominant [7]. Cognitive is a branch of psychological science that studies processes such as knowledge of understanding and thinking skills. Student learning outcomes include everything related to subjects studied in school. Learning outcomes are influenced by the student's experience as a result of interaction with the environment and depend on each individual's self-understanding [8].

Mathematical reasoning can be used as a foundation in understanding and *doing* mathematics and an integral part of problem solving. [9]From the statement above, the low mathematical reasoning of students is caused by the following factors, including: lack of approach to the development of student learning activities, the learning models used are less varied, the lack of interesting presentation of material in learning activities delivered by teachers lack of examples that can be applied in real life daily life, the

methods conveyed by teachers are less about the target because they use models *Direct instruction* learning is still *teacher centered*, which causes student learning outcomes to be very low [10].

A new idea to overcome student mathematics learning outcomes during a pandemic is to apply the *Learning With Quis Team* learning model that is able to encourage and motivate students in the mathematics learning process [3] *The Learning With Quis Team* learning model seems to have become a top choice in today's educational practice. Hermanto, (2018) Team Quis is one of the methods where students are trained to learn and discuss in groups. One group presents to another group, then gives quis to the other group. If the group is unable to answer then the question is thrown to the next group, and so on until all groups make a presentation and give a quis [11]. It can also be done by the teacher giving quis, questions, or snatching problems for each group to answer to grab and get the most points [12].

To optimize teaching and learning activities by applying the Learning Quis Team learning model in the current Covid-19 pandemic era, students and teachers must comply with health protocols as recommended by the government, because the *Learning With Quis Team* learning model is a learning strategy that involves more students in carrying out teaching and learning process activities in the classroom [13], [14].

B. Research Methods

In general, this research method can be interpreted as a scientific way to obtain data with a specific purpose and use [15]. Judging from the method, this research uses an experimental research method , because objects will be given special treatment related to the learning model they will get [16]. The research design that will be used is *True Experimental* Design in the form of *Pretest-Posttest Control Group Design* with the reason that this study will be carried out in two sample classes, namely one experimental class and one control class. In this research design, both experimental classes and control classes were randomly selected [16].

is in accordance with Sugiono's opinion that *True Exprimental Design* has a control group, because in this design, researchers can control all the external variables that affect the course of the experiment [3]. This experimental research was conducted by treating two classes with the same level of ability with different forms of learning strategies. In the first class, the experimental group received a mathematical learning treatment using the *Quiz Team* learning strategy, while in the second class it was a control group that received mathematical treatment using conventional learning strategies [3].

Table 1. Research Design *Prettest-Posttest* Control Group Design

Group	Pre-test	Treatment	Post-test
Exprimen	O_1	X_1	O_2
Control	O_3	X_2	O_4

C. Results and Discussion

This research was conducted at SMA Negeri 6 Padangsidimpuan which involved experimental classes, namely class X-IPA 1 and X-IPA 2, each of which amounted to 20 students. This study used SPSS V.26 where in this SPSS the researcher used validity tests, normality tests, homogeneity tests and independent T test samples in SPSS. for the data analysis technique used is to use *Shapiro Walk* and *Kolmogrov* analysis contained in the SPSS for homogeneity testing. Where we can see the results below.

Table 2. Test of Normality

	Kelas	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
		Statistic	Df	Sig.	Statistic	Df	Sig.
Hasil Belajar Siswa	Pre-Test Kontrol	.109	20	.200*	.960	20	.547
	Pre-Test Ekperimen	.171	20	.127	.953	20	.413

*. This is a lower bound of the true significance.
a. Lilliefors Significance Correction

Based on the data above, the normality test in the SPSS test can be seen from the sig value of 0.20.> 0.05 where if the sig value > 0.05 then the data is normally distributed. However, if the value of sig<0.05 then

the data is not normally distributed. However, the data above the data is normally distributed. This can also be seen from the homogeneity test where, in the homogeneity test, it also has criteria if the sig value is >0.05 then the homogeneous data is nmaun if the sig<0.05 value then the data is not homogeneous. This can be seen in the SPSS display V 26 below.

Table 3. Test of Homogenity of Variances

Test of Homogeneity of Variances			
Student learning outcomes			
Levene Statistic	**df1**	**df2**	**Sig.**
1.414	1	38	.242

Based on the data above, it can be seen that the sig value is 0.242, this shows that the data above (sig value >0.05) then the data is homogeneous. Based on the results of the data analysis above, it shows that the data in this research test is valid. For this reason, the final test in this study was to use the t-test, there was a difference before and after treatment, where the t_{count} of the$_{table}$ >t was 5.77 > 1.685. Meaning that H_1 is accepted and H_0 is rejected means that there is a significant influence on students' reasoning ability and mathematical learning outcomes in the pandemic era. We can see the results of the independent samples test below.

Table 4. Test of Normality

Independent Samples Test										
		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Student learning outcomes	Equal variances assumed	1.414	.242	5.776	38	.000	13.75000	2.38071	18.56949	8.93051
	Equal variances not assumed			5.776	38	.000	13.75000	2.38071	18.57782	8.92218

The influence of *the Learning with Quiz Team Strategy* is proven to affect students' reasoning ability and mathematical learning outcomes by increasing the scores obtained by students. Students who were previously treated obtained better results in achieving reasoning ability indicators and student mathematical learning outcomes. This is shown from the average value of *the pretest*, which is 65 while the *average posttest* value is 84. From the average score of students, it can be stated that students after being given treatment (treatment) are easier to understand and find solutions to solve problems before being given *treatment*. We can see this hystogram of student learning outcomes before and after treatment is carried out to students.

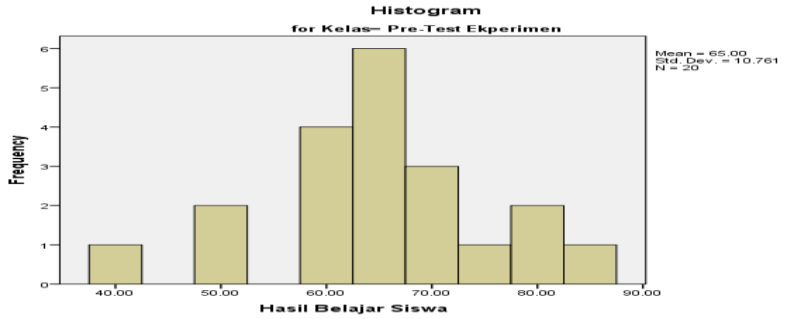

Figure 1. Before the Treatment

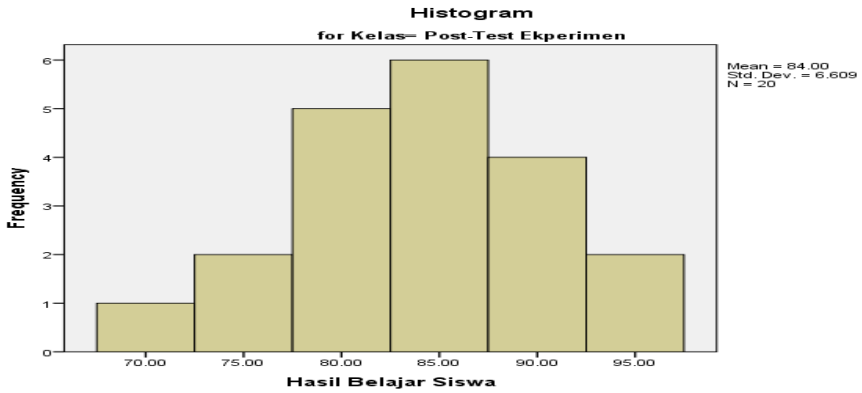

Figure 2. After the treatmen

This is also shown through the student's N gain *pretest* and *posttest* scores where the results show that the total N-Gain score is 102.369 with an average of 0.51 and achieves the "Medium" criterion. Thus, it can be concluded that there is an influence of the *Startegi Learning with Quiz Team* on the reasoning ability and mathematical learning outcomes of students in the Pandemic Era.

D. Conclusion

Based on the results of the study and data analysis, the researcher concluded that there was a significant influence with the influence of the *Learning with Quiz Team Strategy*, this can be seen from the results of the analysis that it was shown from the difference in the average value of the *pretest* was 65 and the *posttest* 84 and the hypothesis test results showed that the sig value. (2-tailed) < 0.005 (0.000<0.05) and t $value_{calculate} > t_{table}$ (5.77 >1.685)

There is an influence of the *Learning with Quiz Team* strategy on the reasoning ability and mathematical learning outcomes of students in the pandemic era.also evidenced by the results of the normality test gain (N-Gain) of 102.3 with an average of 51.18 with the criteria "Medium". This means that the average score of students' reasoning ability and mathematical learning outcomes is different after being given a meeting with a higher influence of *the Learning with Quiz Team Strategy*. Thus, the hypothesis H_1: There is a discussion of the *Learning with Quiz Team Strategy* on students' reasoning abilities and mathematical learning outcomes in the pandemic era, is accepted.

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References

[1] F. H. Santosa, H. R. P. Negara, and Samsul Bahri, "Efektivitas Pembelajaran Google Classroom Terhadap Kemampuan Penalaran Matematis Siswa," *J. Pemikir. dan Penelit. Pendidik. Mat.*, vol. 3, no. 1, pp. 62–70, 2020, doi: 10.36765/jp3m.v3i1.254.

[2] W. N. Anisa, "The Enchancement Of Problem Solving And Mathematical Communication Abilities Through Realistic Mathematics Educa ...," *J. Pendidik. dan Kegur.*, vol. 1, no. 8, 2014.

[3] O. A. Tarigan, I. H. Kusumah, and U. Karo-Karo, "Penerapan Model Active Learning Type Quiz Team Untuk Meningkatkan Hasil Belajar Siswa Smk," *J. Mech. Eng. Educ.*, vol. 3, no. 1, p. 124, 2016, doi: 10.17509/jmee.v3i1.3203.

[4] Ninla Elmawati Falabiba *et al.*, "Pengertian Matematika dan Hakikat Matematika," *Pap. Knowl. . Towar. a Media Hist. Doc.*, vol. 5, no. 2, pp. 40–51, 2014.

[5] A. Meinisa and Wasitohadi, "Peningkatan Hasil Belajar Matematika Melalui Model Problem Based Learning Berbantuan Media Puzzle di Sekolah Dasar," *J. Ris. Teknol. dan Inov. Pendidik.*, vol. 2, no. 1, pp. 27–37, 2019.

[6] H. Maros and S. Juniar, "済無No Title No Title No Title," pp. 1–23, 2016.

[7] T. S. Sumartini, "Peningkatan Kemampuan Penalaran Matematis Siswa Terhadap," *J. Pendidik.*

Mosharafa, vol. 5, no. 1, pp. 1–10, 2015.
[8] S. D. Astiati, "Analisis Kemampuan Penalaran Matematis Siswa MTs Dalam Menyelesaikan Soal-Soal Geometri," *JISIP (Jurnal Ilmu Sos. dan Pendidikan)*, vol. 4, no. 3, pp. 6–12, 2020, doi: 10.36312/jisip.v4i3.1239.
[9] H. Sabil and S. Winarni, "Meningkatkan Hasil Belajar Matematika Siswa Pada Materi Persamaan Kuadrat Dengan Metode Belajar Aktif Tipe Quiz Team Di Kelas IX SMPN 24 Kota Jambi," *Edumatica J. Pendidik. Mat.*, vol. 3, no. 2, p. 54, 2013.
[10] Syafwan, "Meningkatkan Hasil Belajar Matematika Siswa Melalui Strategi Pembelajaran Kooperatif Tipe Tutor Sebaya Untuk Siswa Kelas VII-A SMP Negeri 2 Poso Pesisir," *J. Kreat. Tadulako Online*, vol. 4, no. 4, pp. 227–238, 2013.
[11] A. R. Kamaruddin, K. Kamaruddin, and Abdul Razak Kamaruddin & Kamarulzaman Kamaruddin, "Malay culture and consumer decision-making styles : an investigation on religious and ethnic dimensions," *J. Kemanus.*, vol. 14, pp. 37–50, 2009.
[12] I. Abdillah and S. Sardin, "Efektivitas Penggunaan Google Classroom dalam Pembelajaran Matematika ditinjau dari Kemampuan Penalaran Matematika Siswa," *J. Akad. Pendidik. Mat.*, pp. 115–118, 2020, doi: 10.55340/japm.v6i2.265.
[13] D. Telaumbanua, "Urgensi Pembentukan Aturan Terkait Pencegahan Covid-19 di Indonesia," *QALAMUNA J. Pendidikan, Sos. dan Agama*, vol. 12, no. 01, pp. 59–70, 2020, doi: 10.37680/qalamuna.v12i01.290.
[14] A. F. Bahari, J. Basalamah, M. Ashoer, and M. H. Syahnur, "Internet Business: How Perception of Benefits, Risks, and Ease in Decision Making," *J. Manaj. Bisnis*, vol. 12, no. 2, p. Layouting, 2021, doi: 10.18196/mb.v12i2.9545.
[15] I. G. A. Sri Parnayathi, "Penggunaan Metode Pembelajaran Team Quiz sebagai Upaya Meningkatkan Prestasi Belajar IPA," *J. Educ. Action Res.*, vol. 4, no. 4, p. 473, 2020, doi: 10.23887/jear.v4i4.28642.
[16] M. Mulyadi, "Penelitian Kuantitatif Dan Kualitatif Serta Pemikiran Dasar Menggabungkannya," *J. Stud. Komun. dan Media*, vol. 15, no. 1, p. 128, 2013, doi: 10.31445/jskm.2011.150106.