The Influence of Cooperative Learning Model Student Team Achievement Division (STAD) And Learning Motivation On Learning Outcomes

Yayuk Harini Yuliastuti , I Nyoman Sudana Degeng , Ibut Priono Leksono
Study Program School Education Technology Postgraduate PGRI Adi Buana University , Surabaya
ayuarinastuti@gmail.com, nyoman.sudana.d.fip@um.ac.id ibutpriono@gmail.com

Abstract

The purpose of this research is to find out 1). Differences in learning outcomes in Geography subject between students who were given the Student Team Achievement Division (STAD) learning model and those who were given Snowball Throwing learning student XI IPS class at SMAN 1 Lamongan and SMAN 1 Sukodadi . 2). The difference in the learning outcomes of students who have high learning motivation and low learning motivation in Geography 3). There is an interaction between the application of the Student Team Achievement Division (STAD) learning model and Snowball Throwing with Geography Learning Motivation on Learning Outcomes eye lesson geography . This research involves two independent variables, one moderator variable, and in the measurement (post test) there is one variable that is measured. The independent variable in this study is the learning model which consists of STAD cooperative learning and the Snowball Throwing learning model. The moderator variable is learning motivation which is divided into high motivation and low motivation. While the dependent variable is the result student learning . Calculation results Anava 2 lanes known , that 1). probability score the significance of the learning model variable (between the STAD – *Snowball Throwing* learning models) is 0.000. this means significance not enough of 0.05 (P < 0.05), Mean exist _ difference results Study eye lesson geography between given students learning *the Student Team Achievement Division* (STAD) model with those who are given *Snowball Throwing* learning model . 2). Value probability the significance of the variable motivation Study of 0.000. this means significance not enough of 0.05 (P < 0.05), that is There is difference results Study eye lesson geography between students who have motivation Study height and students who have motivation Study low . 3). score probability significance on learning model variables and motivation Study of 0.005. this means significance not enough from 0.05 (P < 0.05), so H $_0$ rejected and H $_1$ accepted . With thereby can concluded , that There is interaction between application learning model *Student Team Achievement Division* (STAD) and *Snowball Throwing* with motivation Study student to results Study

Keywords : STAD Model, Snowball Drilling, Learning Motivation, and Learning Outcomes .

Introduction

Education in Indonesia is moderate develop fast and become need fundamental in human life a . Education has a very important role in life. Through education, every generation can become a superior successor in accordance with the hopes and aspirations of our nation and state[1]. The existence of this very important education has been recognized and at the same time has a very strong position as stated in the 1945 Constitution Article 31 paragraph 1 which states that "Every citizen has the right to education". In Law Number 20 of 2003 concerning the National Education System (Sisdiknas) it is explained that education is a conscious and planned effort to create a learning atmosphere and learning process so that students actively develop their potential to have religious spiritual strength, self-control, personality, intelligence, noble character, and skills needed by himself, society, nation and state[2].

One of the high school level subjects in the 2013 Curriculum is Geography which is a science to support lifelong life and encourage improvement in life. Success process activity Study teach on geography subject can seen from level understanding , mastery material as well as results Study student[3] . Matter This can he gap that the more tall level of understanding and mastery material as well as results learn , then the more tall also level success learning . But on in fact can seen that results Study geography subject Which achieved student Still low . Problem that , because lack of understanding draft student about material Which learned . With these problems, various efforts emerged to overcome them. One of them is with innovation in learning . The most prominent learning innovation is the reconstruction of understanding through various learning models and assessment systems , including motivation learning so that it can develop the reconstruction of students ' concept understanding abilities in various fields of knowledge in everyday matters[4].

Cooperative learning model or au *cooperative learning* is method   learning share idea that   student   Work The same For   learn and be responsible   answer   on learning colleague team they as well as they   Alone [5]. Cooperative learning is a learning method by forming groups. In this group, students who have different understandings try to teach each other . This method can produce more understanding than individual learning

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[1] Jório Coelho, "The Importance of Education," *REM - International Engineering Journal.*, 2021; Ahmad Zuhdi, Firman Firman, and Riska Ahmad, "The Importance of Education for Humans," *SCHOULID: Indonesian Journal of School Counseling* (2021); Mayurakshi Basu, "Importance of Research in Education," *SSRN Electronic Journal* (2020).

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[5] Tiodora Fermiska Silalahi and Ahmad Fakhri Hutauruk, "The Application of Cooperative Learning Model during Online Learning in the Pandemic Period," *Budapest International Research and Critics Institute (BIRCI-Journal): Humanities and Social Sciences* (2020); Tuty Novelindah Purba et al., "Analisis Kemampuan Self-Efficacy Siswa Pada Pembelajaran Kooperatif Tipe Jigsaw," *Journal of Education and Instruction (JOEAI)* (2021).

methods. In addition, this cooperative method has been proven in previous studies to significantly increase achievement in science and other relevant fields such as (arts, humanities, and social sciences). Cooperative learning also increases positive attitudes towards learning[6]. there are five types method Study successful cooperative _ developed by researchers education at Johns Hopkins University , namely : STAD (*Student Teams Achievement Division*), TGT (*Teams Games Tournament*), TAI (*Teams Accelerated Instruction*), CIRC (*Cooperative Integrated Reading & Composition*), and Jigsaw[7].

STAD Model Learning , According Warsono and Haryanto [8] in state that *Student Team Achievement Division* (STAD) is an encouraging learning model participant educate For each other Work same and mutual help in finish something problem, but in the end responsible answer in a manner independent

Learning models *Snowball Throwing* is a learning model innovative , which is more emphasize to student as center learning . Learning models This enough pleasant For used in learn repeat dead learning that has given previously Because student can carry out learning while play [9]

Motivation is self - induced encouragement somebody in a manner aware or No aware For do something action with objective certain (KBBI) . According to Sardiman [10], motive can said as Power mover from inside and inside subject For do activities certain to achieve something purpose . In activity learning , motivation is needed For awaken excitement Study student so that activity Study can walk with ok . Motivation Study is internal and external encouragement on students who are Study For stage change Act behavior , in general with a number of indicator or supporting elements.

Method

This research involves two independent variables, one moderator variable, and in the measurement (post test) there is one variable that is measured. The independent

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[6] Fitria Lestari et al., "Cooperative Learning Application with the Method of" Network Tree Concept Map": Based on Japanese Learning System Approach," *Journal for the Education of Gifted Young Scientists* 7, no. 1 (2019): 15–32.

[7] Shila Majid Ardiyani and Riyadi Gunarhadi, "Realistic Mathematics Education in Cooperative Learning Viewed from Learning Activity," *Journal on Mathematics Education* (2018); Yunisrina Qismullah Yusuf, Yuliana Natsir, and Lutfia Hanum, "A Teacher's Experience in Teaching with Student Teams-Achievement Division (STAD) Technique.," *International Journal of Instruction* 8, no. 2 (2015): 99–112.

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[10] I Komang Adi Suandika, I Nyoman Pasek Nugraha, and L.J.E. Dewi, "Pengaruh Model Pembelajaran Kooperatif Tipe Team Game Tournament (TGT) Terhadap Keaktifan Dan Hasil Belajar Pekerjaan Dasar Otomotif Siswa Kelas X TKRO SMK Negeri 1 Denpasar," *Jurnal Pendidikan Teknik Mesin Undiksha* (2020).

variable in this study is the learning model which consists of STAD cooperative learning and the Snowball Throwing learning model. The moderator variable is learning motivation which is divided into high motivation and low motivation. While the dependent variable is student learning outcomes. This research can be classified as quasi-experimental using an experimental class and a control class. equivalent. This method was carried out because it did not allow the researcher to exercise full control over the variables and experimental conditions. The experimental class is the class with the STAD learning model and the control class is the Snowball Throwing learning model.

In conducting research on the effect of learning the STAD model with Snowball Throwing learning and learning motivation on learning outcomes geography, the research design used was a non-equivalent control group design. The experimental group and the control group were chosen randomly and for each group a pre-test and post-test were carried out

this research designed as follows:

Table 3. 1 Draft Study

	Research methods	
Motivation to learn	STAD	Snowball Throwing
High motivation	X_{1MT} _	$X2MT$ _ _
Low Motivation	X1MR _ _	X2MR _ _

Description :

$X_1 MT$ = STAD model learning outcomes with motivation Study high .

$X_1 MR$ = STAD model learning outcomes with motivation Study low .

$X_2 MT$ = Study results Snowball Throwing method with motivation Study high .

$X_2 MR$ = Learning Outcomes Snowball Throwing method with motivation Study low .

Population in study This is whole student class X I IPS SMA Negeri 1 Lamongan which consists of 3 group and students class X I IPS SMA Negeri 1 Sukodadi consists 3 troop . (technique taking sample) using technique proportional random sampling where student class X I IPS SMA Negeri 1 Lamongan and students Class X I IPS SMA Negeri 1 Sukodadi taken samples of each 2 class . Instruments used in research _ This consists from Test results study and Questionnaire motivation learn . Test results Study used For know development results Study geography . Form question choice double totaling 20 with 5 alternatives choice at each number . Questionnaire motivation Study used For know level motivation Study student . The number of item questions 20 arranged based scale likert with 5 options answer . Before the instrument is used , validity and reliability tests are carried out . Data analysis technique using analysis test variant (Anava) two track For test hypothesis . However before done testing hypothesis with (ANAVA), then need prerequisite test _ analysis especially first . Test the necessary prerequisites done is the normality test and homogeneity test For inspect validity sample as precondition can done data analysis .

Result and Discussion
Data Presentation
1. Description Results Study

Description results Study student class XI Social Sciences SMA Negeri I Lamongan and

SMA Negeri I Sukodadi , both models STAD *Snowball Throwing* .
Table 4.1 STAD model learning outcomes and Snowball Throwing

		Pretest Ex	PostTest Ex	PretestCon	PostTestCon
N	Valid	64	64	64	64
	missing	0	0	0	0
Means		63.36	83.67	61.17	75.55
std. Error of Means		1,404	1,704	1,312	1,369
Median		65.00	85.00	60.00	77.50
Mode		70	80a –	60	80
std. Deviation		11.235	13,635	10,493	10,951
Variances		126,234	185,906	110,113	119,934
Range		45	50	45	50
Minimum		35	50	35	45
Maximum		80	100	80	95
sum		4055	5355	3915	4835

a. Multiple modes exist. The smallest value is shown

From table 4.1 above is known that amount student in a manner whole is 128 which consists of 64 of class experiment and 64 of class control . Pretest results show class _ experiment more tall compared to class control . On class experiment has an average of 63.36 being in class control is 61.17. On results pretest , fine class experiment nor control class has minimum value of 35 and maximum 80. Currently on the post test class experiment have means or an average of 83.67 with mark maximum 100 and class control 75.55 with mark maximum 95. Range or difference mark highest and rated lowest at pretest Good class experiment nor class control is The same ie 45 and the range in the results post test is 50

Histogram of Learning Outcomes student Good from class experiment nor from class control can seen from Figure 4.1 follows :
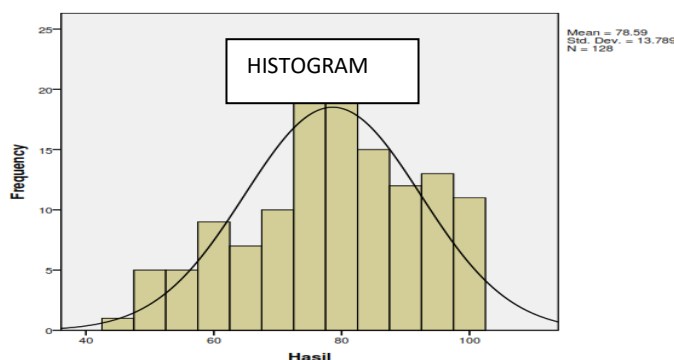FREQUENCIES VARIABLES=Y
NORMAL HISTOGRAM
/ORDER=ANALYSIS

Figure 4.1 Histogram of results Study

Study results With Motivation Study High And Low

Description results Study students who have motivation height and motivation can seen in table 4.2 below :

Table 4.2 Motivation Test Results Study

Descriptive Statistics

Dependent Variable: Learning Outcomes

Learning Model	Motivation Study	Means	std. Dev	N
STAD	Motivation on	88.85	8,495	52
	Lower Motivation	61.25	7,424	12
	Total	83.67	13,635	64
Snowball Throwing	Motivation on	75.21	6,990	47
	Lower Motivation	56.76	4,982	17
	Total	70.31	10,461	64
Total	Motivation on	82.37	10,359	99
	Lower Motivation	58.62	6,394	29
	Total	76.99	13,837	128

Based table 4.2 above can explained that students who got treatment as class experiment with the STAD learning model there are 52 students motivated tall with average score 88.85, moderate For student motivated low there are 12 students with average score of 61.25. While the students who got treatment as class control with learning models *Snowball Throwing* there are 47 students motivated tall with a mean or average of 75.21, moderate For student motivated low amounted to 17 with an average score of 56.76

Amount student a total of 128, which has score motivation study tall as many as 99 students and the remaining 29 students have motivation Study low

1. Validity and Reliability Test Questionnaire Motivation

   Validity test carried out for each item statement motivational questionnaire _ _ _ with use SPSS help version 22.0. For find out whether it is valid or not grain question , then r $_{hits}$ compared to with r $_{table}$ with level significant 0.005. If r $_{hits}$ >= r $_{tab}$ so question it's valid . Otherwise , if r $_{hits}$ <= r $_{tab}$ so grain question the invalid . From 20 grains question questionnaire motivation , number 14 is not valid.

   Table 4.3 Validity test Questionnaire Motivation

   Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
question_1	64.2188	139,273	.638	.934
question_2	63.6875	135,964	.874	.927
question_3	63.1250	163,210	.135	.938
question_4	63.4063	153,023	.567	.934
question_5	63.3438	162,362	085	.941
question_6	63.4375	143,351	.815	.928
question_7	63.8750	139,726	.826	.928
question_8	63.5000	152,387	.631	.933

question_9	62.9688	149,451	.696	.931
problem_10	63.4375	157,544	.378	.936
problem_11	63.2188	145,660	.877	.928
problem_12	63.9063	148,152	.700	.931
problem_13	63.6875	145,448	.764	.930
problem_15	63.3750	152,177	.653	.932
problem_16	63.6875	137,254	.864	.927
problem_17	63.4063	139,668	.806	.928
question_18	63.4375	144,319	.749	.930
question_19	62.8125	158,028	.297	.938
problem_20	63.4688	153,999	.580	.934

Reliability Test done to details statement that has been declared valid on the test validity . For measure reliability used mark *Cronbach's Alpha* . If the coefficient *Cronbach's Alpha* more big from 0.6, instruments considered reliable . If the coefficient *Cronbach's Alpha* not enough from 0.6, instruments are considered No reliable . Based table 4.4, questionnaire motivation Study reliable

Table 4.4 Reliability test Questionnaire Motivation

Reliability Statistics

Cronbach's Alpha	N of Items
.926	19

2. Validity and Reliability Test Learning Outcome Test
For find out whether it is valid or not grain question , then r_{hits} compared to with r_{tabe} with level significance 0.05. If $r_{hit} >= r_{tablel}$ so grain question the declared valid. On the contrary If $r_{hit} < r_{tablel}$, then grain question the stated invalid .
Table 4.5 Validity test Learning Outcome Test

No Question	Pearson C	Sig	validity
1	0.344	0.005	Valid
2	0.641	0.000	Valid
3	0.335	0.007	Valid
4	0.584	0.000	Valid
5	0.540	0.000	Valid
6	0.380	0.002	Valid
7	0.378	0.002	Valid
8	0.337	0.007	Valid
9	0.584	0.000	Valid
10	0.534	0.000	Valid
11	0.580	0.000	Valid
12	0.584	0.000	Valid
13	0.290	0.020	Valid
14	0.545	0.000	Valid
15	0.224	0.076	
16	-0.027	0.829	

No Question	Pearson C	Sig	validity
17	0.305	0.014	Valid
18	0.641	0.000	Valid
19	0.558	0.001	Valid
20	0.344	0.005	Valid

From table 4.5 above , number questions 15 and 16 are invalid because mark its significance more big from 0.05

Test Reliability i lit as test results Study done to details questions that have declared valid on the test validity . For measure reliability used mark *Cronbach's Alpha* . If the coefficient *Cronbach's Alpha* more big of 0.6, instrument considered reliable . If the coefficient *Cronbach's Alpha* not enough of 0.6, instrument considered No reliable .. Based on the test , test result Study is reliable

Table 4.6 Reliability test of learning outcomes

Reliability Statistics

Cronbach's Alpha	N of Items
.795	18

Data Analysis

1. Prerequisite Test

Before do Testing hypothesis with use statistics analysis of variance (ANAVA) two track For know difference results Study *Student Team Achievement Division* (STAD) and Snowball Throwing with students who have motivation tall as well as motivation low , then previously need Prerequisite tests are carried out , namely normality and homogeneity tests

a. Normality Test

Probability sig α > 0.05 then H_0 received , distributed data normally . If the probability sig α < 0.05 then the data is not distributed normally .

Table 4.7 Test Normality of the One-Sample Kolmogorov- Smimov Test

Tests of Normality

Class		Kolmogorov-Smirnov [a]			Shapiro-Wilk		
		Statistics	df	Sig.	Statistics	df	Sig.
Learning Outcomes	STAD	.136	32	.137	.904	32	008
	Snowball Throwing	.124	32	.200*	.949	32	.131

*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction

Based on table data on is known that results study in class experiment that is with treatment *Student Team Achievement Division* (STAD) has mark significance α = 0.137 and class control with treatment *Snowball Throwing* have mark significance α = 0.200. Good class experiment nor class control have mark significance α > 0.05. this _ means H_o accepted , both the STAD and Snowball Throwing learning models are the same normally distributed

b. Homogeneity Test

Homogeneity Test done For know what is the result data Study eye lesson geography originate from same population _ or no . Criteria testing is data nature homogeneous If sig probability α > 0.05 then data is homogeneous . If the probability sig α < 0.05 then the data is No homogeneous .

Table 4.8 Homogeneity Test

Test of Homogeneity of Variance

		Levene Statistics	df1	df2	Sig.
Learning Outcomes	Based on Means	080	1	62	.778
	Based on Median	.104	1	62	.748
	Based on Median and with adjusted df	.104	1	61,975	.748
	Based on trimmed mean	.111	1	62	.740

Based table 4.8 above can is known that mark probability significance is more from 0.05. this _ means data is homogeneous . It means Good from group class experiment with the STAD learning model as well from class control with learning models *Snowball Throwing* homogeneous properties

2. Hypothesis Test

Average scores obtained on each _ cell furthermore will tested in a manner statistics , whether the difference that occurred of course significant or only Because error in taking sample . If analysis prove difference the significant , then can concluded that results Study eye student _ lesson generated geography through learning models *The Student Team Achievement Division* (STAD) is different with what is generated through learning models *Snowball Throwing* ,. Besides That will can is known is second variable namely the model of learning and motivation Study student each other interact to results Study student . Testing hypothesis study done with *Analysis of Variance* (ANAVA) two path . The purpose of ANAVA two track is investigate two influence main and one influence interaction . Influence main that is differences in learning models to results Study eye lesson geography and motivation Study student to results learn . Influence interaction is the influence of learning models and motivation Study student to results Study eye geography lesson kindly whole summary results *ANOVA* loaded in following this :

Table 4.9 Calculation results Anava two track

Tests of Between-Subjects Effects

Dependent Variable: Learning Outcomes

Source	Type III Sum of Squares	df	MeanSquare	F	Sig.	Partial Eta Squared
Corrected Model	17385.042 [a]	3	5795014	103,662	.000	.715
Intercepts	435583537	1	435583537	7791798	.000	.984

Model	1797.214	1	1797.214	32,149	.000	.206
Motivation	11606.376	1	11606.376	207,617	.000	.626
Model * Motivation	458,150	1	458,150	8,195	005	062
Error	6931950	124	55,903			
Total	783075000	128				
Corrected Total	24316992	127				

a. R Squared = .715 (Adjusted R Squared = .708)

Based on the results of the 2- way Anova test in Table 4.9 above , then can is known is hypothesis accepted or rejected _ with assumption , if score results calculation probability significance > 0.05, then H $_0$ is accepted and H $_1$ is rejected . On the contrary If score results calculation probability significance < 0.05, then H $_0$ rejected . and H $_1$ is accepted .

a. hypothesis First

If the probability significance > 0.05 then H_O accepted. It means No there is difference results Study eye lesson between given students _ learning *the Student Team Achievement Division* (STAD) model with those who are given *Snowball Throwing* learning model . If the probability significance < 0.05 then H_O rejected, and H_1 accepted. It means exist _ difference results Study eye lesson geography between given students _ learning *the Student Team Achievement Division* (STAD) model with those who are given *Snowball Throwing* learning model . Based on Table 4 .9 results calculation Anava 2 lanes known , that score probability the significance of the learning model variable (between the STAD – *Snowball Throwing* learning models) is equal to 0.000 . this _ means significance not enough from 0.05 (P < 0.05), so H $_0$ rejected and H $_1$ accepted . With thereby can concluded , that there is difference results Study eye lesson geography between given students learning *the Student Team Achievement Division* (STAD) model with those who are given *Snowball Throwing* learning model .

b. hypothesis Second

If the probability significance > 0.05 then H_O accepted. It means No There is difference results Study eye lesson geography between students who have motivation Study height and students who have motivation Study low .

If the probability significance < 0.05 then H_O rejected, and H_1 accepted. It means There is difference results Study eye lesson geography between students who have motivation Study height and students who have motivation Study low .

Based on Table 4 .9 results calculation Anava 2 lanes known , that mark probability the significance of the variable motivation Study as big 0.000 . this _ means significance not enough from 0.05 (P < 0.05), so H $_0$ rejected and H $_1$ accepted . With thereby can concluded , that There is a difference results Study eye lesson geography between students who have motivation Study height and students who have motivation Study low

c. hypothesis Third

If the probability > 0.05 then H_O accepted . It means No there is interaction between application learning model *Student Team Achievement Division* (STAD) and *Snowball Throwing* with motivation Study student to results Study

If probability < 0.05 then H_O rejected, and H_1 accepted . It means there is interaction between application learning model *Student Team Achievement Division* (STAD) and *Snowball Throwing* with motivation Study student to results learning There is interaction between learning models and motivation Study student to results Study eye lesson geography

Based on Table 4.9 results calculation Anava 2 lanes known , that score probability significance on learning model variables and motivation Study of 0.005. this _ means significance not enough from 0.05 (P $<$ 0.05), so H $_0$ rejected and H $_1$ accepted . With thereby can concluded , that There is interaction between application learning model *Student Team Achievement Division* (STAD) and *Snowball Throwing* with motivation Study student to results Study

Conclusion

There is difference learning outcomes of the Geography subject between students who were given the Student Team Achievement Division (STAD) learning model and those who were given Snowball Throwing learning for class XI IPS students at SMA Negeri 1 Lamongan and SMA Negeri 1 Sukodadi in the 2022-2023 academic year . There are differences in the learning outcomes of students who have high learning motivation and low learning motivation in Geography Class XI at SMA Negeri 1 Lamongan and SMA Negeri 1 Sukodadi for the 2022-2023 academic year . There is an interaction between the application of the Student Team Achievement Division (STAD) and Snowball Throwing models with Motivation to Learn Geography on the Learning Outcomes of Class XI Students of SMA Negeri 1 Lamongan and SMA Negeri 1 Sukodadi for the academic year 2022-2023

Suggestion

In the learning process must chosen appropriate and appropriate method _ _ with material learning and fit with characteristics students , reason Because use method which corresponds to a i and appropriate can increase results Study student . on matter learning geography teacher is expected use me method Which appropriate Because with use the proper method Can help students to improve their understanding so that capable increase results learn . In the learning process teacher teaching is expected capable grow and improve motivation Study students , because with motivation high learning _ results learn too _ increase ok . Use method good and appropriate learning , necessary _ Keep going developed for more interesting so that student more happy and active Study geography . To other related parties with education mainly Head School to join support and facilitate applied various models and methods environmental learning _ their respective schools . To other researchers suggested so researching methods predictive learning _ can increase results Study student . Research results This need developed and tested Again with make instrument study

valid possible to obtain more results .

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