

# The Effect of Digital Learning Media Based on *Wordwall Games* on Students' Learning Outcomes and Learning Motivation at SDN 17 Prabumulih

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# ABSTRACT

Wordwall game digital media is an interesting application, which increases motivation and learning outcomes with an active learning atmosphere in the classroom and learning while playing. The research uses the experimental method with the Posttest-Only Control Design. The research population indicates 334 people with purposive sampling, which consists of 28 students of class IIIA as the experimental class and 28 students of class IIIB as the control class. Data collection techniques used are tests and questionnaires. Based on the research results, it is concluded that there is an effect of Wordwall game-based digital learning media on students' learning outcomes of fractional material with a sig of 0.000. There are differences in learning outcomes based on students' learning motivation and students' learning outcomes of fractional material with a sig of 0.788 at SDN 17 Prabumulih.

Keywords: digital learning media, wordwall game, students' learning outcomes, students' learning motivation

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# INTRODUCTION

Education is a process that is not can separated from life people all over the world, to help sustainability life human . Based on opinion (Simamora, Harapan & Kesumawati, 2020) Education is also interpreted as A matter For lift honor and dignity someone , headed understanding knowledge , as well existing skills \_ in himself . As for opinions others , according to (Fuadi et al, 2021, p.6) education is activities aimed at achieving \_ influence Act in demand student through learning , and guidance to become adult . According to (Syafril & Zen, 2017, p.38) education is activities carried out by humans , so room scope field education covers all experiences and thoughts man about education . So you can concluded about education is a formation process character For reach objective desired learning and of course very useful For life with expand experience in A education . For That education in one of the lessons taken in class that is mathematics

Mathematics is one \_ very important knowledge in life , because with Study mathematics student capable think in a way critical , logical , systematic and able finish problems that occur in life real . Based on opinion (Panggabean et al, 2022, p.1) mathematics is field studies taught in school , both at the level Primary School , School Intermediate First , school General Intermediate , and up to University level . As for opinions others , according to (Ruqoyyah, 2021, p.2) mathematics is learning required \_ tool help in the form of functioning media For help student understand explanation from the teacher. So you can concluded about mathematics abstract in a way good . After student understand the concept taught by the teacher then the teacher provides practice for students skilled in use various draft mathematics .



Digital learning media used namely digital learning media based *wordwall games*. Based on opinion (Hendra et al, 2023, p.2) digital learning media is a combination of words from eye lessons, technology, and strategies that can help teachers and students in learn. As for opinions others, according to (Ningtia & Rahmawati, 2022) use *wordwall games* that is as a facilitating learning media wordwall games is A application on an interesting browser, so that the media can help results Study students and motivate student For can make atmosphere classroom learning \_ become active with exists Study while play.

For see evaluation end from the learning process that is can seen from results learn. Based on opinion (Prastyo, 2019, p.8) results Study is a process that is carried out in learning, for That indicator achievement results Study can seen from change Act sell. As for other opinions according to (Novita et al, 2019) results Study is abilities acquired by students \_ after follow learning. So you can concluded about results Study is abilities acquired by students \_ after learning during the delivery process material from the teacher with using learning media so that motivating student For more easy understand materials and results Study will seen Good in accordance with what was expected.

Motivation that is the spirit is there from in self. Based on opinion (Harisuddin, 2019, p.20) motivation is motivation within oneself \_ man For do activity with enthusiasm \_ more good. As for other opinions according to (Susanto, 2019, p.70) motivation Study is encouragement from self so that moved in Act For fulfil needs and achieve goal. So you can concluded motivation Study is encouragement in self so that capable move with enthusiastic always in do A activity For reach objective as well as There is three component that is needs , drives , and goals .

Based on results observation beginning through information obtained at SDN 17 Prabumulih , which is located in the sub-district Sukaraja , District South Prabumulih , Prabumulih City . On January 21 , 2023, Meet with guardian known class III that part student Still not enough understand material fraction . As for the indicators problems , namely : results study the material fraction classified low , motivation For learning is also included low , lacking learning media appropriate and effective , students Not yet involved active in learning , and not yet apply appropriate learning media . \_ Indicator problem the caused by factors following This , namely : the learning media used not enough precise and effective so that cause results learning and motivation Study student Still low .

Based on problems that occur, then Appropriate and effective learning media is needed. Learning media is really needed in the learning process, so with use of learning media can support success in learning. Researcher choose digital- based learning media *wordwall games* as solution in overcome low results learning and motivation Study student

As for research relevant to become reference in study This is research conducted by Khusnul \_ Maghfiroh (2018), where results from study This that is show that use of *wordwall* media can increase results Study mathematics material get up space for students class IV seen from the average value highest and value very significant lows. Furthermore research conducted by Tatsa \_ Galuh Pradani (2022), where results from study This that is show that *wordwall* media capable increase interest Study students. Viewed from aspect liveliness students and criteria evaluation measured observations \_ through a number of indicator so that use of *wordwall* media on interest and motivation student can increases in students class IV.

# LITERATURE REVIEW

# Media Based Digital Learning Wordwall Games

According to (Batubara, 2021, p. 3) digital learning media is a learning medium in the form of digital data that can be processed, accessed, and distributed use digital devices. As for opinions others, according to (Nisa & Susanto, 2022) about *games* education based *wordwall* is a learning medium that has features with combination color, image move and sound so that can interesting attention student in learning mathematics. So you can concluded regarding digital- based learning media *wordwall games* is a working medium with digital data based *website*, and can used in various knowledge education as source able to learn make student



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motivated For learn . As for the steps creation of digital- based learning media wordwall games is as following

1) Make account *wordwall* with method open the site <u>https://Wordwall.net</u>



2) Click the sign up menu, enter the requested data such as email and password. Then click log in.



- 3) Prepare a number questions and answers about material to be made games .
- 4) Click Create Activity For start create learning games .



5) Choose type desired game \_



6) Write a Title games, questions along with key answer in the box provided. Click done If Already finished

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7) Click start For start answer question, then games prepare For played





# **Student Learning Results**

According to (Nurhasana, 2021) Learning outcomes are the results obtained from learning activities. Study Hopefully it can bring change . As for opinions others , according to (Triana, 2021, p.14) learning outcomes are abilities, both cognitive (knowledge), affective (attitude) and psychomotor (behavior) that a person obtains from the learning process carried out within a certain time. According to Nasution in (Sutrisno, 2021, p. 22) learning outcomes are a change in the individual who learns not only regarding knowledge, but also forms skills and appreciation in the person of the individual who learns. So it can be concluded that learning outcomes are the abilities that students have after going through the learning process, these results are in the form of knowledge and changes in attitudes within the student. Researchers hope that the use of digital learning media based on *wordwall games* can influence student learning outcomes in the form of cognitive scores (knowledge) as seen from multiple choice tests.

## **Motivation Study Student**

According to (Nurhasana, 2021) Motivation is aspect important from teaching and learning . Students who have no motivation No will try For study and struggle For can understand the material taught by the teacher, on the contrary motivated students \_ tall will like to school and easy absorb material in the learning process . As for opinions others , according to (Ricardo & Meilani, 2017 , p. 5 ) learning motivation is the enthusiasm within students which encourages them to want to learn, to make the best effort in a learning process so that the best results are achieved which is the goal to have during the learning process. According to (Hamzah, 2021, p. 1) learning motivation is the basic impulse that moves a person to behave . So it can be concluded that learning motivation is an aspect important from teaching and learning , to raise enthusiasm within students which encourages them to want to learn so that the best results and goals can be achieved during the learning process.

### METHOD

This type of research uses experimental quantitative research with *True Experimental Design*. In this design, researchers can control all external variables that influence the course of the experiment (Sugiyono, 2021). In this study, the treatment design used was *Posttest Only Control Design*.

In this design there are two groups, each selected randomly (R). The first group was given treatment (X) and the other group was not. The group that is treated is called the experimental group and the group that is not treated is called the control group. The effect of treatment is ( $O_1$ :)  $O_2$ . In actual research, the effect of treatment is analyzed using different tests, for example if there is a significant difference between the experimental group and the control group, then the treatment given has a significant effect (Sugiyono, 2021). The variables in this research are as follows: Independent Variable (×): *Wordwal game -based digital learning media*; Dependent Variable ( $Y_1$ ): Learning outcomes ; and Moderator Variable ( $Y_2$ ): Learning motivation.

The population in this study were all students at SDN 17 Prabumulih for the 2022/2023 academic year started from classes I-VI total 334 students , next withdrawal sample using a *random sampling technique* , namely a lottery technique to select a sample . The sample taken in this research was 56 students, namely class III A as class The experiment numbered 28 students and class III B as a control class totaling 28 students .

Technique data collection, namely 1) test, test *posttest* learning results using digital learning media based on *the wordwall game* which was given a multiple choice test of 20 questions. The goal is to prove the truth of the hypothesis that has been previously proposed by the researcher. This data analysis is used to determine the difference in the average score or final results of students who were given treatment and before they were given treatment . 2) Questionnaire, questionnaire aimed at students regarding learning motivation. The scale used in this questionnaire is a *Likert scale* with 5 options, namely strongly agree, agree, unsure, disagree and strongly disagree.

Instrument validity techniques are 1) this validity uses *Expert Judgment* (expert assessment); 2) validity construct, ie is notification information about the degree of data that actually occurs on the object with what



the researcher collected with formula *Person (Product Moment )* formula; 3) Reliability; 4) Different power ; and 5) Difficulty level. Data analysis techniques used are 1) normality test use k olmogorov-Smirnov Test; 2) homogeneity test using the lavender test statistics; and 3) Hypothesis Testing use Two-way ANOVA assisted by SPSS.

#### **RESULTS AND DISCUSSION Final Test Results Data**

In the experimental class using digital learning media based on the wordwall game, the posttest results were obtained with a total of 28 participants, the minimum score for students was 65, the maximum score was 100, with an average score of 82.32. Meanwhile, the control class used conventional learning from the posttest results with a total of 28 participants, a minimum score of 40 students, a maximum score of 100, with an average score of 70.54. Based on the test results, learning outcomes using digital learning media based on wordwall games are higher than using conventional learning. The list of *posttest* scores can be seen from the table as follows:

	Ν	Minimum	Maximum	Sum	Mean	Std. Deviation
Experimental Class	28	65	100	2305	82.32	10.84
Control Class	28	40	100	1975	70.54	13.3
Valid N (listwise)	28					

**Table 1. Description of Learning Outcome Data** 

# **Questionnaire Result Data Motivation Study**

Questionnaires were given to students in the experimental class and control class In the learning motivation questionnaire, you can see the comparison between the experimental class and the control class. The average score for the experimental class is 72.36, while the average score for the control class is 61.04. So it can be concluded that the student learning motivation questionnaires in the experimental class and control class are equally good. Below are the percentage results of the learning motivation questionnaire.

Table 2. Description of Learning Motivation Data							
N Minimum Maximum Sum Mean Std. Deviation							
Experimental Class	28	35	123	2026	72.36	28,089	
Control Class	28	30	100	1709	61.04	22,217	
Valid N (listwise)	28						

After obtaining the questionnaire data, the researchers then grouped learning motivation into three, namely high learning motivation, medium learning motivation, low learning motivation.

# Table 3. Recapitulation of Student Learning Outcome Test Results Based on Learning Motivation

		Learning outcomes				
Motivation to learn	Statistics					
	Statistics	Wordwall Game Based Digital	Conventional			
		Media	Learning			
Tall	Ν	7	10			
	$\overline{X}$	108.4	86.3			
Currently	Ν	10	6			
	$\overline{X}$	79.2	61.7			



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Low	Ν	11	12
	$\overline{X}$	43.2	39.7
Average		139.7	93.5

#### **Normality Test**

Test the normality of the test In this research, *the Kolmogorov-Smirnov Test technique was used* with SPSS 23, it was found that the *posttest* significance value of learning outcomes for digital learning media based on *wordwall games* of 0.115 with a significance of > 0.05, it is concluded that the data taken is normally distributed and the *posttest* significance value does not use *wordwall game* -based digital learning media. of 0.451 with a significance of > 0.05, it is normally distributed.

Meanwhile, for the normality test of the questionnaire data, it was found that: n is the significance value of the questionnaire for the digital learning media learning class based on *the wordwall game* of 0.200 with a significance of > 0.05, it is concluded that the data taken is normally distributed ; and the significance value of the class questionnaire not using *wordwall game*- based digital learning media of 0.200 with a significance of > 0.05, it is concluded that the data taken is normally distributed.

#### **Homogeneity Test**

Testing \_ homogeneity test on both variable bound in a way individually . Calculation of homogeneity tests in research This use test *Lavene statistics* obtained mark results Study of 0.307 and think critical amounted to 0.582, whereas test value *Lavene statistics* results questionnaire amounted to 2,382 and thought critical of 0.129. Retrieval data decision is on test *Lavene statistics* with use level significant 5% is If mark significant > 0.05 then the questionnaire data motivation Study homogeneous .

#### **Hypothesis Testing**

The hypotheses given in this research are hypothesis 1: there is an influence of *wordwall game*- based digital learning media on student learning outcomes at SDN 17 Prabumulih, hypothesis 2: differences in learning outcomes based on students' learning motivation at SDN 17 Prabumulih and hypothesis 3: digital-based learning media interactions *wordwall games* and learning motivation on student learning outcomes at SDN 17 Prabumulih. Hypothesis testing can be done using a two-way ANOVA test . The criteria for hypothesis testing in this research are as follows:

#### Hypothesis I

The following are the results of the two-way ANOVA test using SPSS 23, seen in the following table

Table 4. Hypothesis Test Results I   Tests of Between-Subjects Effects   Dependent Variable: Results Tests of Between-Subjects Effects								
Source	Squares	df	Mean Square	F	Sig.			
Corrected Model	8208.788 <sup>a</sup>	5	1641,758	48,951	,000			
Intercept	317532.019	1	317532.019	9467.679	,000			
Media	2181.933	1	2181.933	65,058	,000			
Motivation	6112.736	2	3056.368	91.130	,000			
Media * Motivation	16,018	2	8,009	,239	,788			
Error	1676.926	50	33,539					
Total	337000000	56						
Corrected Total	9885.714	55						

a. R Squared = .830 (Adjusted R Squared = .813)



From the calculation results of the two-way ANOVA test with digital learning media based on *the wordwall game*, it can be seen in the media row that the sig is 0.000. Because 0.000 < 0.05, then Ho is rejected. Thus, it can be concluded that there is a significant influence of *wordwall game- based digital learning media* on student learning outcomes at SDN 17 Prabumulih.

# Hypothesis II

The following are the results of the two-way ANOVA test using SPSS 23, seen in the following table Table 5. Hypothesis Test Results II

	Tests of B	etween-Sul	ojects Effects		
Dependent Variable:	Results				
	Type III Sum of				
Source	Squares	Df	Mean Square	F	Sig.
Corrected Model	8208.788 <sup>a</sup>	5	1641,758	48,951	,000
Intercept	317532.019	1	317532.019	9467.679	,000
Media	2181.933	1	2181.933	65,058	,000
Motivation	6112.736	2	3056.368	91.130	,000
Media * Motivation	16,018	2	8,009	,239	,788
Error	1676.926	50	33,539		
Total	337000000	56			
Corrected Total	9885.714	55			

a. R Squared = .830 (Adjusted R Squared = .813)

From the calculation results of the two-way ANOVA test , it can be seen that the motivation row shows a sig of 0.000. Because 0.000 < 0.05, then Ho is rejected. Thus, it can be concluded that there are significant differences in learning outcomes based on students' learning motivation at SDN 17 Prabumulih.

# **Hypothesis III**

The following are the results of the two-way ANOVA test using SPSS 23, seen in the following table

Table 6. Hypothesis Test Results III								
	Tests of B	Between-Sub	jects Effects					
Dependent Variable:	Results							
	Type III Sum of							
Source	Squares	df	Mean Square	F	Sig.			
Corrected Model	8208.788 <sup>a</sup>	5	1641,758	48,951	,000			
Intercept	317532.019	1	317532.019	9467.679	,000			
Media	2181.933	1	2181.933	65,058	,000			
Motivation	6112.736	2	3056.368	91.130	,000			
Media * Motivation	16,018	2	8,009	,239	,788			
Error	1676.926	50	33,539					
Total	337000000	56						
Corrected Total	9885.714	55						

a. R Squared = .830 (Adjusted R Squared = .813)

From the calculation results of the two-way ANOVA test, it can be seen that in the media and motivation lines, a sign is obtained, namely 0.788. Because 0.788 < 0.05, then Ho is accepted. Thus, it can be concluded that there is no significant interaction between digital learning media and learning motivation on student learning outcomes at SDN 17 Prabumulih. So with this there is no interaction between digital learning media based on *wordwall games* and learning motivation on student learning outcomes at SDN 17 Prabumulih.



### Discussion

In this research, the experimental class was given digital learning media based on *the Wordwall Game* and the dick class that was treated with the conventional model. From the first, second, third and fourth meetings. From the results of the data analysis that has been carried out, several things can be stated as follows: There is The Influence of Digital Media Based Learning *Wordwall Games* Regarding Learning Outcomes Fraction Material Students at SDN 17 Prabumulih

From the research results, it can be seen that the experimental group that received treatment with digital learning media based on *the Wordwall Game* had an average score of 82.32. greater than the class average for classes treated using conventional learning, namely 70.54. Calculation results using SPSS 25. Based on the criteria of sig =  $0.000 \le 0.05$ , H<sub>o</sub> is rejected. Thus, it can be concluded that there is a significant influence of *Wordwall Game- based digital learning media* on student learning outcomes at SDN 17 Prabumulih.

This can be seen in the learning process in the experimental class, students appear active in answering questions, expressing opinions, having discussions in their groups, solving questions. In this case, it indirectly shows the influence of *Wordwall Game -based digital learning media* on student learning outcomes. This is because *wordwall*- based educational *games* are website-based learning media that have features with a combination of colors, moving images and sound so they can attract students' attention in learning mathematics. Using digital learning media is a medium that can help educational programs in the teaching and learning process in managing learning time more appropriately. So that the learning lessons provided are more meaningful and easy for students to follow, especially class III elementary school.

This is in line with Khofifah Indra Sukma's research, Trisni Handayani (2022), which states that in implementing The use of digital *wordwall-based quizzes* in experimental classes can be seen difference from the control class. In the experimental class, students looked more active in learning activities, increasing interaction between students and teachers, teachers and participants students, as well as students and students. So that with increasing positive interactions between fellow learners, the level of understanding will increase, which will ultimately have an impact on improved learning outcomes.

After implementing the learning, when *wordwall quiz*- based digital media was implemented in the experimental class, students were more interested and active in participating in learning activities. Students are more courageous in expressing their opinions both in front of the class and when discussing with group friends, as well as increased interaction between each other so that there is an understanding of the material being taught which has an impact on improving learning outcomes. On the other hand, in the control class which was not treated using digital media based on *wordwall quizzes*, students tended to be passive and less courageous in expressing their opinions.

# There is Differences in Learning Outcomes Based on Motivation Study Fraction Material Students at SDN 17 Prabumulih

This research shows that there is an average difference in learning outcomes based on learning motivation. From the results of the two-way ANOVA calculation, it can be seen that in the motivation row, a sig is obtained, namely 0.000. Because 0.000 < 0.05, then Ho is rejected. Thus, it can be concluded that there are significant differences in learning outcomes based on students' learning motivation at SDN 17 Prabumulih. The average learning motivation questionnaire for classes that were treated with digital media based on *wordwall quiz* was 72.36 and classes that were treated using conventional learning was 61.04.

In this study, researchers divided learning motivation into high, medium and low categories. In the experimental class, 7 students had high learning motivation, 10 students had moderate learning motivation, and 11 students had low learning motivation. Meanwhile, for the control class, 10 students had high learning motivation, 6 students had moderate learning motivation, and 12 students had low learning motivation.

Learning motivation is an encouragement that can generate desire, attention, willingness and enthusiasm for learning in a teaching and learning process in achieving learning goals. This means that motivation to learn is the desire that exists within each individual to learn so that learning goals are achieved.



The indicators of learning motivation taken by researchers are 1) being diligent in carrying out the tasks given by the teacher; 2) never give up in the face of difficulties; 3) have the initiative to do something without being asked; 4) a high desire to succeed; and 5) have a high drive for learning.

Selecting the use of digital media based on *wordwall quiz* which can be used to form an interest new to students in learning. *Wordwall quiz* -based digital media is a very interesting media with its aim as a source for students to learn, as media, and as a fun assessment tool for students. So it can increase learning motivation and provide new impressions for students, so that it can help grow their interest in learning.

This is in line with research by Shofiya Launin, Wahyu Nugroho, Angga Setiawan (2022), the determining factor in learning activities is student learning motivation. The better and more interesting the learning media used, the higher the tendency and attention in learning. Based on the opinion of (Susanto 2016), this media creates interest in learning activities and is obtained through effort and carried out through an activity or activities.

### Are none Interaction of Digital Learning Media and Motivation Study on Learning Outcomes Fraction Material Students at SDN 17 Prabumulih

Based on the results of the two-way ANOVA hypothesis testing analysis, a sig can be obtained, namely 0.788. Because 0.788 < 0.05, it can be concluded that there is no interaction between *Wordwall Game*-based digital learning media and learning motivation on student learning outcomes at SDN 17 Prabumulih or the hypothesis put forward is rejected. This means that students are taught using digital learning media based on *the Wordwall Game* and conventional learning with learning motivation do not influence each other on students' mathematics learning outcomes. This shows that learning motivation does not depend on learning media or vice versa in students' understanding of concepts.

In the interaction accept H $_0$ , it means that factor A does not depend on factor B, and the effect of factor B also does not depend on factor A. This means that each factor (learning media and learning motivation) does not depend on each other in influencing understanding ability. students' mathematical concepts. From the analysis using Two-Way Analysis of Variance, it can be understood that there is no interaction between learning media and combined learning motivation on student mathematics learning outcomes, meaning that together the learning media and student groups have high learning motivation, medium learning motivation or low learning motivation. resulting in significant differences in students' ability to understand mathematical concepts.

This thing in line with the research carried out digital learning media based *Wordwall Games* (20 20) conclude there is no interaction between learning media and motivation Study in influence results students. Means effect The main factors of each learning media are running in a way dependent in influence results Study or not available interaction between learning media and categories motivation Study to enhancement results Study students .

Based on results calculation, with use digital learning media based *Wordwall Games* average value hasi questionnaire motivation Study high 108.4, avg hasi questionnaire motivation Study currently 7 9.2 and avg hasi questionnaire motivation Study low 43.2. With use learning conventional average hasi questionnaire motivation Study tall 86.3, avg hasi questionnaire motivation Study moderate 61.7, and average hasi questionnaire motivation Study low 39.7. By chart can depicted like following :



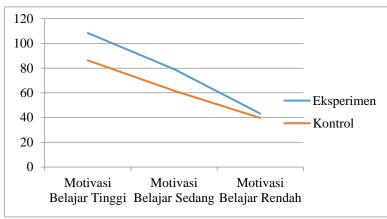


Figure 1. Graph of interaction between learning media and *motivation* in influencing learning outcomes

The graph forms two lines that are parallel to each other. This is in accordance with the opinion of Ary (1982:365) who says that to assess the interaction between the two independent variables it can be shown graphically, if the graph shows that the two lines intersect each other then there is interaction, but if the two lines are parallel then there is no interaction.

Based on the results of the hypothesis testing analysis above, it can be concluded that there is no interaction between learning media and learning motivation in influencing students' mathematics learning outcomes or the hypothesis put forward is rejected. This means that students who are taught using digital learning media based on *the Wordwall Game* and conventional learning, learning motivation do not influence each other on students' mathematics learning outcomes. This shows that learning motivation does not depend on learning media or vice versa on student learning outcomes.

#### CONCLUSIONS AND RECOMMENDATION

Based on results data testing hypothesis, then results study This can concluded that there is the influence of digital media- based learning *wordwall games* to results Study student material fragments at SDN 17 Prabumulih, there are difference results Study based on motivation Study student material fractions at SDN 17 Prabumulih, and no there is interaction based digital learning media *wordwall games* and motivation Study to results Study student material fraction at SDN 17 Prabumulih.

Recommendation pe l ne l litian more carry on expected as reference for researcher furthermore in do research on the topic different problems, teachers can utilizing digital-based learning media *wordwall games* as an effective medium in the learning process teach in class.

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