The Influence of the Problem Based Learning Model Assisted by the Wordwall Educational Game on Motivation and Learning Outcomes for Class V Social Sciences

Sarmiati [1], Muhammad Nawir [2], Hidayah Quraisy [3]
[123] Universitas Muhammadiyah Makassar

* Corresponding Author. E-mail: sarmiatispd75@guru.sd.belajar.id

Abstrak

Tujuan penelitian adalah untuk Pengaruh model *Problem Based Learning* berbantuan *Game Edukasi Wordwall* terhadap motivasi dan hasil belajar IPS kelas V. Desain penelitian yang digunakan adalah *Nonequivalent Control Group Design* dengan teknik random. Teknik analisis data dalam penelitian ini menggunakan analisis statistic deskriptif dan inferensial. Sebagai persyaratan dilakukan uji persyaratan yaitu uji normalitas dan uji homogenitas. Setelah itu dilakukan uji hipotesis dengan menggunakan uji Manova. Hasil penelitian hipotesis pertama dengan uji *Paired samples Test* bahwa nilai signifikan 0,00<0,05 maka dapat disimpulkan bahwa ada pengaruh model *Problem Based Learning* berbantuan *Game Edukasi Wordwall* secara simultan terhadap motivasi belajar; Uji hipotesis kedua dengan nilai signifikansi 0,002<0,05, yang berarti bahwa ada pengaruh model pembelajaran *Problem Based Learning* berbantuan *Game Edukasi Wordwall* terhadap hasil belajar IPS pada siswa kelas V; uji hipotesis ketiga dengan menggunakan *Multivariate Tests* dengan nilai signifikansi 0,000 < 0,05 yang berarti bahwa ada pengaruh antara model pembelajaran *Problem Based Learning* berbantuan *Game Edukasi Wordwall* terhadap motivasi dan hasil belajar siswa.

Kata Kunci: *Problem Based Learning, Game Edukasi Wordwall, motivasi, hasil belajar*

The Influence of the Problem Based Learning Model Assisted by the Wordwall Educational Game on Motivation and Learning Outcomes for Class V Social Sciences

Abstract

The aim of the research is to determine the influence of the Problem Based Learning model assisted by the Wordwall Educational Game on motivation and social studies learning outcomes for class V. The research design used is Nonequivalent Control Group Design with random techniques. The data analysis technique in this research uses descriptive and inferential statistical analysis. As a requirement, a requirements test is carried out, namely the normality test and homogeneity test. After that, a hypothesis test was carried out using the

Manova test. The results of the first hypothesis research using the Paired Samples Test show that the significant value is 0.00<0.05, so it can be concluded that there is an influence of the Problem Based Learning model assisted by the Wordwall Educational Game simultaneously on learning motivation; Test the second hypothesis with a significance value of 0.002<0.05, which means that there is an influence of the Problem Based Learning learning model assisted by the Wordwall Educational Game on social studies learning outcomes for class V students; test the third hypothesis using Multivariate Tests with a significance value of 0.000 < 0.05, which means that there is an influence between the Problem Based Learning learning model assisted by the Wordwall Educational Game on student motivation and learning outcomes

Keywords*: Problem Based Learning, Wordwall Educational Games, motivation, learning outcomes*

Introduction

Along with the increasingly rapid development of Science and Technology (IPTEK), public awareness of the importance of education is increasing. Education is the main basis for the development of various things in human life. Education is very important to increase intelligence and skills, as well as strengthen personality and create a national spirit so that children can shape themselves and be responsible for nation building.

According to Law of the Republic of Indonesia no. 20 of 2003 states that: Education is a conscious and planned effort to create a learning atmosphere and learning process so that students are actively able to develop their potential to have religious spiritual strength, self-control, personality, intelligence, noble morals, and the skills needed by themselves and society nation and state (Sisdiknas, 2003).

In the world of education we can learn various kinds of knowledge, both worldly knowledge and religious knowledge. Since time immemorial, science has guided humans in everyday life.

Talking about education, it cannot be separated from the learning and learning process. Because the main core of educational activities in schools is the teaching and learning process (learning) (Hamzah, 2007). This proves that the level of success or failure of educational goals depends on the teaching and learning process (learning). The creation of quality learning cannot be separated from the implementation of a learning component system including learning objectives, learning media, learning strategies, learning methods and learning stages (Hanafy, 2014). Optimal implementation of components will support the success of the learning process involving teachers and students (Festiawan, 2020). However, on the contrary, teacher-centered learning can cause students to become bored when studying in class, so that learning becomes less effective and students' concentration decreases, especially in social science lessons.

Social Sciences (IPS) is a science that studies a group of academic disciplines that study aspects related to humans and their social environment (Nasution, 2018). The social studies learning process should be carried out in a fun way, this aims to prepare students as good citizens. As good citizens, students must master knowledge, skills, attitudes and values that can be used to solve personal and social problems and can make decisions to participate in community activities at the local, regional level. , as well as globally (Nursid Sumaatmadja, 2006). Social studies learning must be able to communicate knowledge, invite students to be active and creative in

the learning process and be able to interact with other students to achieve learning goals (Malikhah, 2014).

Student-centered learning has been implemented in formal schools, learning is required to apply the 4C abilities consisting of (Critical Thinking, Communication, Collaboration, and Creativity). This can be realized quickly through the role of teachers in using learning models as well as the roles and responsibilities of educators in familiarizing students with implementing 4C in their daily lives. In addition, 21st Century education demands student-centered learning (Indarta et al., 2022; Salmia & Yusri, 2021).

Learning is expected to provide solutions so that student motivation and learning outcomes can increase. The 2013 curriculum emphasizes a learning process that is assisted by students, so that the learning model used is a learning model that requires students to be more active in the learning process. There are several learning models that are in accordance with the 2013 Curriculum, one of which is the Problem Based Learning (PBL) model. Problem Based Learning (PBL) is a learning model that encourages students to know how to learn and work together in groups to find solutions to problems in the real world (Amir et al,. 2020). Meanwhile, one of the learning applications designed to help the PBL learning model is the Wordwall Educational Game to increase student motivation and learning outcomes.

However, in reality, not all teachers are able to implement a learning model using the Wordwall Educational Game application which is able to foster 21st Century characteristics in students. Many teachers use conventional learning models where learning is still teacher-centered so that students become passive. One way to achieve learning objectives is determined and influenced by the learning media used

by the teacher in class. Teachers need learning media to help convey lesson material, according to (Sadiman, 2009) Learning media is an intermediary or messenger conveyed by the sender to the recipient of the message. The development of learning media goes hand in hand with technological developments. There are many media that can be used by teachers, one of which is game-assisted learning media which can also be used as an evaluation to measure student understanding.

The Wordwall educational game is a game designed for learning, so it is hoped that it can improve students' understanding of the learning process (Sukirman, 2012), later in research (Layyina, dkk, 2023) It is known that the application of the Problem Based Learning PBL learning model assisted by Wordwall media is effective and suitable for use in learning activities. In research conducted by (Sintya, dkk, 2022) who have developed educational games as media, show that the Wordwall game-based learning model has a higher influence compared to conventional learning on class students' understanding of concepts.

Wordwall is a learning media assisted by web applications. Using Wordwall is quite easy and can be accessed by students individually or with teacher guidance. Wordwall is an application used for learning evaluation. It is hoped that this application will make it easier for students to understand the learning material presented so that it can improve student learning outcomes.

The advantage of the Wordwall Educational Game is that it has various types of templates available that can be used by teachers (Nisa & Susanto, 2022). Games that have been completed can be shared using links that can be sent via several applications such as WhatsApp, Google Classroom or email. Another

advantage of the Wordwall Educational Game is that it can be printed in Portable Document Format (PDF) so that it will make it easier for students who experience network problems (Lestari, 2021). However, the Wordwall Educational Game also has a drawback, namely that some of the game features available are paid. Learning with the help of the Wordwall Educational Game is more suitable for use in class V, the reason is because class V in elementary school already understands enough to use game features and is able to provide a positive influence.

Based on the results of observations, during the learning process we found many students who lacked concentration in studying. Apart from that, the lack of interaction between teachers and students makes learning less effective. Low motivation and learning outcomes occur because during the learning process, teachers only provide material for students to read and assignments to complete so that students tend to be less active and less motivated to achieve high achievements or learning outcomes.

This event or phenomenon is possible because the teaching method used by the teacher is an ordinary learning method. This lack of interaction and decreased student concentration can affect their motivation and learning outcomes. Based on data from the Final Semester Assessment (PAS) for Class V Social Sciences, it was found that many students did not meet the minimum integrity standards with an average score of 65.

The results of these initial observations show that students often have difficulty understanding the chronology of an event. One of them is the material on economic activities and their relationship with various fields of work. The learning indicators in the material on economic activities and their relationship with various fields of work are identifying the types of

work that exist in the surrounding environment. These indicators are still not fully achieved.

To overcome this problem, teachers need to make changes to the way they teach. In learning, teachers are required to be able to create fun learning activities and involve students in them, so that students can receive and understand the concepts of the material well, so that student motivation and learning outcomes can increase. Based on the background of this problem, researchers are interested in conducting research aimed at the influence of the Problem Based Learning model assisted by the Wordwall Educational Game on motivation and social studies learning outcomes for class V Cluster II, Pattallassang District, Gowa Regency.

Metode (15%)

The type of research used to solve research problems is quantitative research. According to (Creswell, 2017), Quantitative understanding as an effort to investigate problems. This problem is the basis for researchers to collect data, determine variables and then measure them with numbers so that analysis can be carried out in accordance with applicable statistical procedures. The purpose of conducting quantitative research is none other than helping in drawing conclusions or helping in generalizing the correct predictive theory (Sukmawati, Salmia, 2023).

Quantitative research aims to find the effect of using the PBL model assisted by the Wordwall Educational Game (variable X) on motivation (Y1) and learning outcomes (variable Y2) in social studies subjects using an experimental approach.

This quantitative research uses a Nonequivalent Control Group Design. In this design, 2 classes will be compared, the first class will be the experimental class and the second class will be the control class. Both classes will each be given a pre-test before

learning begins, and a post-test at the end of the research. The research samples were students of Class V SDI Sailong and Class V SDI Moncongloe. This research was carried out for approximately two months, starting from January to March 2024, in the even semester of the 2023-2024 academic year.

The data collection instrument used was a questionnaire to determine the effect of the PBL model assisted by the Wordwall Educational Game on student learning motivation. Meanwhile, the data to measure the influence of the PBL learning model assisted by the Wordwall Educational Game on student learning outcomes is by using tests.

The data that has been collected will be processed and analyzed using two types of analysis, namely descriptive statistical data analysis and inferential statistical data analysis. Hypothesis testing in this study used the MANOVA test. The Manova test is used to determine whether there are statistically significant differences in several variables that occur simultaneously between two levels in one variable.

Results and Discussion (70%)

The research was conducted at two schools, namely SDI Sailong as the control class and SDI Moncongloe as the control class. Both schools conducted research each for 10 days. From the first to the fourth day, the researcher made observations to directly observe the condition of the school and students during the learning process and looked at the list of values in the results before the researcher conducted the research..

At the fifth meeting, the researcher gave a pretest to determine students' initial abilities in the material on the role of economics in efforts to improve people's lives in the social and cultural fields. After being given the pretest, the researcher analyzed the results using SPSS 25. At the sixth to ninth meeting, the researcher gave

treatment, namely, the control class was given treatment with conventional learning, and the experimental class was given treatment using the problem based learning model assisted by the wordwall educational game, and after that at the tenth meeting, the researcher again gave a posttest to determine the learning outcomes and learning motivation of students after being given the treatment, and researchers analyzed students' posttest scores using SPSS 25.

Social studies motivation questionnaire data for fifth grade students in the control class and experimental class before and after being given treatment were analyzed using descriptive analysis. The following is data on learning motivation in the control class and experimental class. Based on the pretest and posttest scores in the control class and experimental class, the motivation values in the two classes can be explained in the following bar diagram.
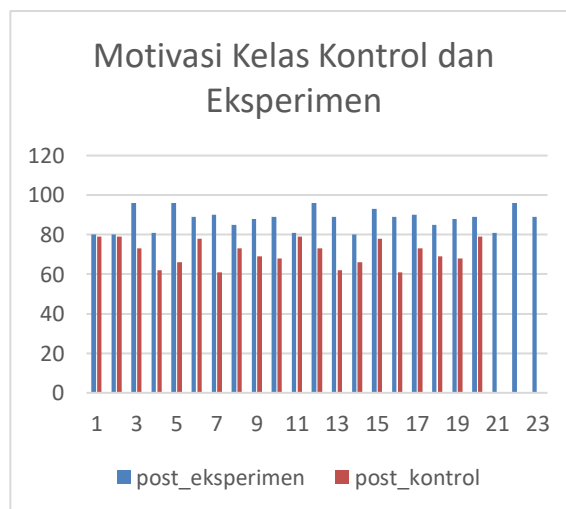

Diagram 1 Learning Motivation for Control Class and Experimental Class

Diagram of achievement of learning motivation for control class and experimental class with a difference in the number of students of 3 people. It can be seen that the experimental class values are marked blue and the control class values are marked red. So it is very clear that learning

motivation in the experimental class is higher than in the control class. So it can be concluded that the application of the PBL learning model assisted by the Wordwall Educational Game can increase the social studies learning motivation of class V students.

Furthermore, the comparison between the values of the control class and the experimental class can be seen in the following bar chart.
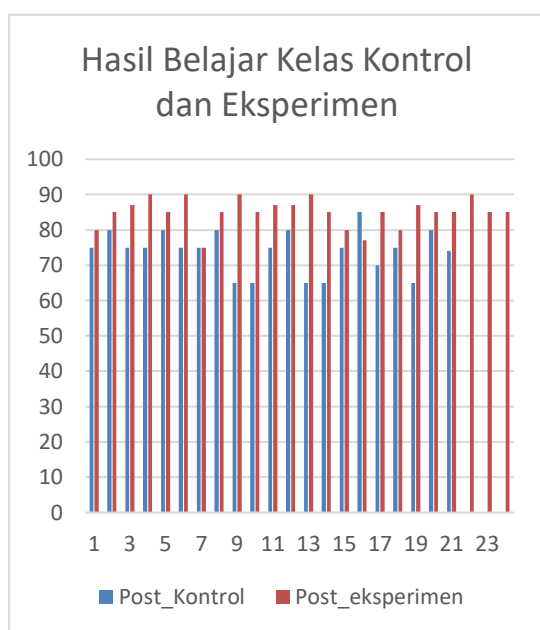

Diagram 2 Learning Results for Control Class and Experimental Class

The bar diagram above, which is colored blue for the control class and red for the experimental class, makes it easy to find out the difference between the two results of class V students. The experimental class has a much higher score than the control class, so it can be concluded that the use of the PBL learning model with the help of the Wordwall Educational Game can improve social studies learning outcomes for class V students.

Next, to test the hypothesis, an N-Gain test is first carried out, because from the normalized gain value the influence of the model assisted by the Wordwall Educational Game will be visible, which is useful for seeing the improvement scores before treatment (pretest) and after treatment (posttest). The following is the calculation of the N-Gain value in the control class and experimental class.

Table 1 N-Gain Value

N-Gain kelas kontrol	Kategori	N-Gain kelas eksperimen	Kategori
0,22	Rendah	0,53	Sedang

N-Gain test using SPSS 25. It can be classified that the control class learning outcomes can be categorized as low with an N-Gain value of 1.22 from a total of 20 students and the experimental class learning outcomes can be categorized as medium with an N-Gain value. 0.53 from a total of 23 students.

Before testing the hypothesis, a normality test and homogeneity test are first carried out, as follows.

a. **Normality test**

The data normality test was carried out using non-parametric statistics to determine the type of statistics used, the criteria used was the Kolmogriv-Smirnov technique. If the Sig value. (2-tailed) > 0.05 then the data distribution is normal, whereas if the Sig. (2-tailed) < 0.05, then the data distribution is not normal. There was H1 rejection and H0 acceptance. In this research, data normality test calculations were used using the SPSS 15 for Windows program using the Kolmogriv-Smirnov test technique. The following are the results of normality data analysis for the groups used as samples.

Table 2 Normality Test
One-Sample Kolmogorov-Smirnov Test

		Unstandardized Residual
N		43
Normal Parameters[a,b]	Mean	.0000000
	Std. Deviation	1.02007266
Most Extreme Differences	Absolute	.173
	Positive	.164

	Negative
Test Statistic	
Asymp. Sig. (2-tailed)	

a. Test distribution is Normal.
b. Calculated from data.
c. Lilliefors Significance Correction.

Based on the One-Sample Kolmogorov Smirnov Test based on Unstandardized Residual, the Asymp value was obtained Sig. (2-tailed) of 0.072 is greater than so this research can be concluded to have normal distribution. Thus, the assumption or requirement is that the data is normally distributed.

b. Homogeneity Test

The homogeneity test was carried out to see whether the two samples had the same variance. The analysis technique used in the homogeneity test is the Levene test with the help of SPSS 15 for Windows. Data can be said to be homogeneous if it has a significant variance in the Leven's Test of 0.05. The results of the homogeneity test in increasing students' interest in learning are as follows:

Table 3 Homogeneity Test
Test of Homogeneity of Variances

Levene Statistic	df1	df2	Sig.
3,592	4	16	,028

Based on the results of data analysis for the two groups, it was found that the homogeneity of the variable was 0.025, which was greater than 0.05, which indicated that the two groups were homogeneous with a statistical levance of 3.592.

c. Hypothesis testing

This hypothesis uses the Manova test, namely whether there is an influence of the digital literacy-based blended learning learning model on motivation and learning outcomes.

Table 4 Hypothesis Testing

Multivariate Tests^a

Effect		Value	F	Hypothesis df	Error df	Sig.
Intercept	Pillai's Trace	1.000	199955.646^b	2.000	15.000	.000
	Wilks' Lambda	.000	199955.646^b	2.000	15.000	.000
	Hotelling's Trace	26660.753	199955.646^b	2.000	15.000	.000
	Roy's Largest Root	26660.753	199955.646^b	2.000	15.000	.000
MODEL	Pillai's Trace	1.233	4.288	12.000	32.000	.000
	Wilks' Lambda	.005	31.634^b	12.000	30.000	.000
	Hotelling's Trace	140.971	164.467	12.000	28.000	.000
	Roy's Largest Root	140.655	375.081^c	6.000	16.000	.000

a. Design: Intercept + MODEL
b. Exact statistic
c. The statistic is an upper bound on F that yields a lower bound on the significance level.

Multivariate test carried out with the help of SPSS 25. With decision making, the significance value of the Problem Based Learning learning model assisted by the Wordwall Educational Game on student motivation and learning outcomes is 0.000 < 0.05, which means that there is an influence between the Problem Based Learning learning model assisted by the Educational Game Wordwall on student motivation and learning outcomes.

The research was conducted with the title The Influence of the Problem Based Learning Model Assisted by the Wordwall Educational Game on the Motivation and Social Studies Learning Outcomes of Class V Cluster II Students, Pattallassang District, Gowa Regency. This research was conducted during 10 meetings in the control class and also in the experimental class starting from the observation stage to the learning process stage to find out the pretest and posttest scores after being given different treatments.

The Problem Based Learning learning model assisted by Wordwall media was carried out to determine the influence of student motivation and learning outcomes. So a normality test was carried out using SPSS 25. Based on the Kolmogorov-Smirnov test, the Asymp. Sig. (2-tailed) 0.072 > 0.05, it can be stated that student learning motivation is normally

distributed. Likewise, with the homogeneity test, the results of data analysis for the two groups showed that the variable homogeneity was 0.028, greater than 0.05, which indicated that the two groups were homogeneous.

Hypothesis testing was carried out using the Manova test to determine whether there was an influence of the Problem Based Learning learning model assisted by Wordwall media on motivation and learning outcomes. By making the decision that the significance value of student motivation and learning outcomes is 0.000 < 0.05, which means that there is an influence between the Problem Based Learning learning model assisted by Wordwall media on student motivation and learning outcomes.

This research is in line with research conducted by (Yakin, 2023) that there was an increase in student learning motivation from the high category to the very high category after using educational games as a learning medium. Likewise, student learning achievement increased from an average pretest score of 52.65 to 93.75 in the posttest score. Still with similar research conducted by (Nufus, Nurkholis, & Asyah, 2023) with the conclusion that the application of the Problem Based Learning PBL model can improve learning outcomes in the water cycle material both cognitively, affectively and psychomotorically. Meanwhile, the novelty in this research is to determine the effect of the PBL learning model assisted by the Wordwall Educational Game on motivation and learning outcomes by using the MANOVA test.

Conclusion (5%)

Based on the results of the research and discussion, conclusions can be drawn in this research, namely: The influence of the Problem Based Learning model assisted by the Wordwall Educational Game on motivation and social studies learning outcomes. The multivariate test carried out with decision making brings the significance value of student motivation and learning outcomes to 0.000 < 0.05, which means that there is a simultaneous influence of the Problem Based Learning learning model assisted by the Wordwall Educational Game on the motivation and social studies learning outcomes of class V students. Through Problem Based Learning Learning, students are guided to explore social studies concepts in the context of real world situations. Using Wordwall, they can test their understanding through interactive games designed to reinforce the concepts being taught. This iterative process can help students deepen their understanding of the course material.

Bibliography

Creswell. (2017). *Research Design Pendekatan Metode Kualitatif, Kuantitatif, dan Campuran*. Yogyakarta: UNY Perss.

Festiawan, R. (2020). Belajar dan pendekatan pembelajaran. *Jurnal K*, 1–17.

Hamzah B. Uno. (2007). *Model Pembelajaran Menciptakan Proses Belajar Mengajar yang Kreatif dan Efektif*. Jakarta: Bumi Aksara.

Hanafy, M. S. (2014). Konsep Belajar Dan Pembelajaran. *Lentera Pendidikan : Jurnal Ilmu Tarbiyah dan Keguruan*, *17*(1), 66–79. https://doi.org/10.24252/lp.2014v17n1a5

Indarta, Y., Jalinus, N., Waskito, W., Samala, A. D., Riyanda, A. R., & Adi, N. H. (2022). Relevansi Kurikulum Merdeka Belajar dengan Model Pembelajaran Abad 21 dalam Perkembangan Era Society 5.0. *Edukatif : Jurnal Ilmu Pendidikan*, *4*(2), 3011–3024.

https://doi.org/10.31004/edukatif.v4i2.2589

Layyina, H., Nursyahadiyah2, F., & Listyarini3, I. (2023). *Peningkatan Hasil Belajar Melalui Model Project Based Learning Berbantuan Media Wordwall Pada Siswa Kelas V SDN Peterongan*. *08*.

Lestari, R. D. (2021). Upaya Meningkatkan Motivasi Belajar Peserta Didik dalam Pembelajaran Daring Melalui Media Game Edukasi Wordwall Di Kelas IV SDN 01 Tanahbaya Tahun Pelajaran 2020/2021. *Jurnal Ilmiah Profesi Guru*, *2*(2), 111–116. https://doi.org/10.30738/jipg.vol2.no2.a11309

Malikhah, S. (2014). Pendidikan Karakter Pada Mata pelajaran Ilmu Pengetahuan Sosial. *Jurnal Ilmu Pendidikan*, *20*(1), 75-85.

Nisa, M. A., & Susanto, R. (2022). Pengaruh Penggunaan Game Edukasi Berbasis Wordwall Dalam Pembelajaran Matematika Terhadap Motivasi Belajar. *JPGI (Jurnal Penelitian Guru Indonesia)*, *7*(1), 140. https://doi.org/10.29210/022035jpgi0005

Nufus, K., Nurkholis, & Asyah, N. (2023). Penerapan Model Problem Based Learning Dengan Media Wordwall Untuk Meningkatkan Hasil Belajar Siswa Tentang Siklus Air Pada Mata Pelajaran Ipa Di Kelas V Sd Negeri 3 Panguragan Wetan. *Jurnal Ilmiah PGSD FKIP Universitas Mandiri*, *09*(2), 2202–2213.

Nursid Sumaatmadja. (2006). *Metodologi Pengajaran Ilmu Pengetahuan Sosial (IPS)*. Bandung: Alumni.

Rohman Qomarul Yakin, I Nyoman Putu Suwindra, I. B. P. M. (2023). *Pengembangan Media Pembelajaran Game Edukasi Fisika untuk Meningkatkan Motivasi dan Prestasi Belajar Siswa pada Materi Gerak-Gerak Lurus Beraturan, Berubah Beraturan, dan Jatuh Bebas*. *09*, 89–90.

Sadiman, A. (2009). *Media Pendidikan*. Jakarta: PT Grafindo Persada.

Salmia, & Yusri, A. M. (2021). Peran Guru dalam Pembelajaran Abad 21 di Masa Pandemik Covid-19. *Indonesian Journal of Primary Education*, *5*(1), 82–92. Diambil dari http://ejournal.upi.edu/index.php/

Sintya, D., Fadila, N., Prasetyo, K., Suprijono, A., & Surabaya, U. N. (2022). *Pengaruh Model Pembelajaran Game Based Learning Tipe Wordwall Terhadap Pemahaman Konsep Siswa Kelas VII SMP*. *2*(2), 171–180.

Sisdiknas. (2003). *Undang-Undang Republik Indonesia Nomor 20 Tahun 2003 Tentang Sistem Pendidikan Nasional*. *18*(1), 22–27.

Sukirman. (2012). *Pengembangan Media Pembelajaran*. Yogyakarta: PT. Pustaka Insan Madani.

Sukmawati, Salmia, S. (2023). Population, Sample (Quantitative) and Selection of Participants/Key Informants (Qualitative). *Edumaspul - Jurnal Pendidikan*, *Vol. 7 – N*(6), 131–140. https://doi.org/https://doi.org/10.33487/edumaspul.v7i1.5259

Toni nasution, M. A. L. (2018). *Konsep dasar ilmu pengetahuan sosial*. Yogyakarta: Samudra Biru.