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The Effect of Online Learning, Motivation and Mastery of Social Science Concepts on the Problem Solving Ability of Grade IV Elementary School Students

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Abstract: This study aims to determine the effect of online learning, ability to solve social problems, and motivation to learn on the mastery of social studies concepts in fourth-grade students at Public Elementary School members of the Palapa Sayung Group, Demak. This type of research is quantitative. This research consists of four steps, namely: 1) problem identification, 2) Literature study, 3) Development of a conceptual framework, 4) identification and definition of variables, hypotheses, and research instruments, 5) sampling technique, 6) data collection, 7) data analysis, 8) conclusions. Data collection techniques consist of observation, interviews, questionnaires, and documentation. The data sources of this study were students, grade 6 teachers, and school principals in Sayung District, Demak Regency. The data analysis technique uses prerequisite tests (normality test, homogeneity test, and linearity test) and hypothesis testing (multiple regression, F-test, and coefficient of determination).

Keywords: Online learning, ability to solve social problems, motivation, mastery of social concepts

1. Introduction

Motivation is a change in energy within a person which is characterized by an impulse that comes from a person to achieve goals. The drives and reactions of effort are caused by the need for achievement in life. This makes individuals have the effort, desire, and drive to achieve high learning outcomes (Riyanto, Kuat, & Tentama, 2020). In online learning, it is often found that students are less active in the learning process, and students' learning motivation also decreases. Students who have high learning motivation will always strive to be better and want to be seen as successful students in their environment. Meanwhile, students who do not have the motivation to learn will not show seriousness in learning, so the learning outcomes obtained are not satisfactory (Riswanto & Aryani, 2017). The higher the learning motivation of students, the higher the learning outcomes they get, and vice versa.

In online learning, students are less able to express their aspirations and opinions, so in the end, online learning is no more enjoyable than face-to-face learning (Zu et al., 2022). Online learning has an unfavorable impact on the social aspects of students. The social aspect is very necessary for elementary school students. The social aspect can be characterized by individual social development with the achievement of individual social maturity and development. Social aspects can be developed through student interactions between friends, adaptation to the environment, and following the rules that exist in the surrounding environment (Riggs et al., 2006). This has an impact on the lack of mastery of social studies learning concepts. Students have difficulty solving social problems in their lives. Problem-solving ability is one of the important abilities that must be possessed by students. Problem-solving ability is the ability to apply previously owned knowledge to new situations that involve higher-order thinking processes (Muhammad Baba Gusau, & Mohamad, 2020). Online learning has such a big impact on learning, one of which is the failure to achieve social studies learning objectives (Nambiar, 2020). In addition to a decrease in student learning motivation, students also cannot solve the application of the knowledge gained through online learning into everyday life.

The aims of this study were 1) to determine the effect of online learning on the problem-solving abilities of fourth-grade elementary school students, 2) to find out that there was an influence on the motivation of fourth-grade elementary school students' problem-solving abilities, 3) Knowing the influence on the mastery of social studies concepts on the problem-solving ability of fourth-grade elementary school students, 4) Knowing the effect on online learning, motivation, and mastery of concepts on the problem-solving ability of fourth-grade elementary school students.

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2. Literature Review

Each school has its own advantages and disadvantages for the government's prevention and control of the spread of Covid-19. Homeschooling policies mostly lead to online education. Through face-to-face learning at home online or online at school.

Online education is a teaching-learning activity between teachers and students, regardless of distance, time and location. This method of learning is expected to reduce the spread of Covid-19 because online learning does not provide direct physical contact between teachers, students or classmates. Another definition of e-learning refers to a variety of technologies, such as audio and video conferencing, that are delivered as educational activities via the Web, e-mail, discussion groups, apps and other applications, and computer networks.

Online learning is the answer to providing learning so you can stay healthy during the Covid-19 outbreak. However, the systematic learning commonly practiced in Indonesia is not online learning. Because all this time learning has been done face-to-face (Sun & Chen, 2016). Teachers and students are not familiar with the new learning system which is the online learning system. Teachers need to be able to convey material well so that students can understand the material while studying in the classroom. We also want our students to continue their studies without reducing their academic achievements and exceeding some requirements for the smoothness of the online learning system.

Motivation or interest in learning is the desire or force that drives learning (Hamdani, Kesumawati, & Kristiawan, 2010). Highly motivated students will study hard and improve their academic performance. On the other hand, students with low motivation tend to neglect their studies resulting in poor academic performance. Eggen and Kauchak (2012) found that motivated students tend to have the following characteristics: 1) process information systematically an in-depth and professional learning experience, 2) continue complex work and fewer control problems, 3) have a more positive attitude towards school and explain that school is satisfactory. High or low student motivation is influenced by factors that exist within the student (intrinsic) or come from the environment (extrinsic) (Legault, 2020). Factors are students' interest in the field of knowledge being studied and their concerns about learning. Environmental factors such as teacher quality, teaching methods, classroom conditions, and atmosphere, as well as facilities and supporting learning infrastructure. With the help of optimization factors, student motivation to learn can be increased.

Environmental factors such as the use of interesting and diverse teaching methods, dynamic communication between teachers and students, and the availability of complete equipment and infrastructure.

3. Methodology

The type of research used in this research is included in the experimental research. Experimental research is research that is intended to find out whether there is a consequence of something imposed on the research subject (Ross & Morrison, 2013). This study uses quantitative research that aims to test the hypothesis from the data that has been collected following the theory and previous concepts. This research will be conducted at the Public Elementary School Kematan Sayung, Demak Regency which is a member of the Palapa Cluster. Data analysis used is the normality test and homogeneity test.

4. Results

This research was conducted at the Gugus Palapa Sayung Elementary School, Demak with a total of 115 students, consisting of six public elementary schools Public Elementary School Prampelan, Public Elementary School Bulusari, Public Elementary School Pilangsari, Public Elementary School Tambakroto, Public Elementary School Karangasem No. 1, and Public Elementary School Karangasem No. 2. Researchers conducted research when the class teacher taught social studies lessons to find out how fourth-grade students could solve problems.

Table 1 - ANOVA test.

			Sum of Squares	df	Mean Square	F	Sig.
Online Learning* Student Problem Solving Ability	Between Groups	(Combined)	1529.171	19	80.483	7.015	.000
		Linearity	1529.171	19	80.483	7.015	.000
		Deviation from Linearity	638.098	18	35.450	3.090	.000
		Within Groups	1089.960	95	11.473		
		Total	2619.130	114			
Students Motivation* Student Problem Solving Ability	Between Groups	(Combined)	1538.234	19	80.960	7.849	.000
		Linearity	1386.174	1	1386.174	134.382	.000
		Deviation from Linearity	152.059	18	8.448	1.819	.004
		Within Groups	979.940	95	10.315		
		Total	2518.174	114			
		(Combined)	2063.469	19	108.604	13.640	.000

Mastery of Social Science Concepts* Student Problem Solving Ability	Between Groups	Linearity	1717.187	1	1717.187	215.672	.000
		Deviation from Linearity	346.282	18	19.238	2.416	.003
		Within Groups	756.392	95	7.962		
		Total	2819.861	114			

4.1 Linearity Test

A linearity test is carried out to determine whether the data is linear or not as a requirement to be able to perform data analysis in further statistical testing:

Ho: The distribution of the data studied is not linear

Ha: The distribution of the data studied is linear

Based on decision making:

If probability > 0.05 Ha is rejected and Ho is accepted

If probability < 0.05 H a is accepted and Ho is rejected

Here are the results of the linearity test conducted by the researchers:

From the data above, it can be seen that the significance of each deviation from linearity is 0.000; 0.004; and 0.003 with overall is below 0.05, then Ha is accepted, namely, the data is linearly distributed.

4.2 Multiple Regression Analysis

The analysis used in this study is multiple linear regression with four predictors, namely this regression model can be used to determine the shape of the influence of Online Learning, Motivation, and Mastery of Social Science Concepts On the variables of online learning (X1), learning motivation (X2), Mastery of Social Science concepts (X3) and students' problem-solving ability (Y). Problem Solving Ability of Grade IV Elementary School Students simultaneously and partially. Based on the analysis with the SPSS 23 for the windows program, multiple regression results were obtained as shown in Table 2.

From the multiple analysis table above, it is known that the constant value is 1.302. The coefficient of the online learning variable is 0.194 with a t-count = 2.789 and a significant value of 0.06 <0.05.

This shows that it can be concluded that there is an effect of online learning on students' problem-solving abilities. The coefficient of learning motivation variable is 0.422 with t-count = 5.285 and a significant value of 0.00 < 0.05. This shows that it can be concluded that there is an influence of learning motivation on students' problem-solving abilities.

The coefficient of the Social Studies concept mastery variable is 0.428 with t-count = 5.033 and a significant value of 0.00 <0.05. This shows that it can be concluded that there is an effect of mastery of social studies concepts on students' problem-solving abilities. Based on the results of the multiple regression analysis above, the multiple regression equation is obtained as follows.

$$Y= 1.302 + 0.194\ X_1 + 0.422\ X_2 + 0.428\ X_3 \quad (1)$$

The regression equation can be interpreted as follows.

1. Constant 1.302 If the variables of online learning, learning motivation, and mastery of social studies concepts are considered constant, then the average problem-solving ability of students is 1.302.
2. Regression coefficient X_1 (online learning)
   From the results of multiple regression calculations obtained the value of online learning *coefficients is 0.194.*
3. Regression coefficient X_2 (learning motivation)
   From the results of multiple regression calculations obtained the value of learning motivation *coefficients is 0.422.*
4. Regression coefficient X_3 (mastery of social studies concept)
   From the results of multiple regression calculations, the *coefficients for* mastering the social science concept are 0.428.

Table 2 - Multiple regression analysis results.

Model	**Unstandardized Coefficients**		**Standardized Coefficients**	**T**	**Sig.**
	B	**Std. Error**	**Beta**		
(Constant)	1.302	2.832		.460	.647
Online Learning	.194	.070	.179	2.789	.006
Student Motivation	.422	.080	.381	5.285	.000
Mastery of Social Science Concepts	.428	.085	.408	5.033	.000

5. Discussion

5.1 There is an Influence on *Online Learning on the* Problem-Solving Ability of Grade IV Elementary School Students

This research was conducted by using a questionnaire or questionnaire given to 115 fourth-grade students of Public Elementary School in the Palapa Sayung Demak cluster. The questionnaire given to students consisted of 60 questions with answer options always, often, sometimes, and never. Then the received data is processed using IBM SPSS statistics Base 23.

To answer the problem formulation about whether there is an effect of online learning, learning motivation, and mastery of social studies concepts on students' problem-solving abilities, the results of the normality test are known that the Kolmogorov-Smirnov Test value is 0.057 with a significance value of 0.200 greater than 0.05 so it can be said that the population is normally distributed. This shows that H0 is not rejected and it can be concluded that the residuals are normally distributed. sig result. online learning is 0.391; learning motivation 0.754; mastery of social studies concept 0.085; the last variable on the student's problem-solving ability was 0.948. Then the entire significance is more than 0.05 and it is proven that each variable has homogeneous data.

In the linearity test, it is known that the significance of each deviation from linearity is 0.000; 0.004; and 0.003 with overall is below 0.05, then Ha is accepted, namely, the data is linearly distributed.

Furthermore, to answer the problem formulation, there is an influence of online learning on the problem-solving abilities of fourth-grade students. It needs to be tested based on the t-test which is known that the correlation coefficient for the online learning variable is 0.194, which is positive, which means that the higher the online learning, the higher the student's problem-solving ability. For the partial correlation coefficient between online learning and students' problem-solving abilities, the probability value is 0.006 <0.05, which means that the regression model is significant, so the proposed hypothesis is accepted (H 1 is accepted). Thus, partially online learning affects the problem-solving abilities of fourth-grade elementary school students. In line with the results of Schoenfeld's research (2016) results show that there is an influence between online learning and student problem-solving. Overall, the mathematical problem-solving ability of class IX students of Public Junior High School No. 10 Gorontalo on quadratic equations through online learning is in the low category with a percentage of 60.89%.

5.2 The Influence of Motivation on Problem Solving Ability of Grade IV Elementary School Students

Likewise, in proving the effect of motivation on the problem-solving abilities of fourth-grade students, it can be proven following Table 2 that the correlation coefficient for the learning motivation variable is 0.422, which is positive, which means that the higher the learning motivation, the higher the student's problem-solving ability. For the partial correlation coefficient between learning motivation and students' problem-solving abilities, the probability value is 0.000 <0.05, which means that the regression model is significant, so the proposed hypothesis is accepted (H_2 is accepted). Thus, partially learning motivation affects the problem-solving ability of fourth-grade elementary school students.

5.3 Influence on Mastery of Social Science Concepts Against the Problem-Solving Ability of Grade IV Elementary School Students

The effect of mastery of social studies concepts on the problem-solving abilities of fourth-grade elementary school students is evidenced by the t-test which reads that the correlation coefficient for the social studies concept mastery variable is 0.428, which is positive, which means that the higher the mastery of social studies concepts, the higher the student's problem-solving ability. For the partial correlation coefficient between mastery of social studies concepts and students' problem-solving abilities, the probability value is 0.000 < 0.05, which means that the regression model is significant, so the proposed hypothesis is accepted (H3 is accepted). Thus, partially the mastery of social studies concepts affects the problem-solving abilities of fourth-grade elementary school students.

In line with the results of Utaminingsih, Widjanarko, & Ismaya's (2022) research, which states that problem-based learning has a better and significant influence on students' science process skills in terms of observing, classifying, measuring/calculating, predicting, concluding and communicating. This conclusion is proven by the value of sig. = 0.000 which is smaller than the alpha value that is determined at = 0.05.

5.4 Influence on Online Learning, Motivation and Mastery of Social Science Concepts Against the Problem-Solving Ability of Grade IV Elementary School Students

Answers to the problem formulation about whether there is an influence on online learning, motivation and mastery of social studies concepts on the problem-solving ability of fourth grade elementary school students based on multiple analysis of the constant value of 1.302. The coefficient of the online learning variable is 0.194 with $t\text{-}_{count}$ = 2.789 and a significant value of 0.06 <0.05. This shows that it can be concluded that there is an effect of online learning on students' problem-solving abilities. The coefficient of learning motivation variable is 0.422 with $t\text{-}_{count}$ = 5.285 and a significant

value of 0.00 < 0.05. This shows that it can be concluded that there is an influence of learning motivation on students' problem-solving abilities.

The coefficient of the Social Studies concept mastery variable is 0.428 with $t_{count} = 5.033$ and a significant value of 0.00 < 0.05. This shows that it can be concluded that there is an effect of mastery of social studies concepts on students' problem-solving abilities. Based on the results of the multiple regression analysis above, the multiple regression equation is obtained as follows.

$$Y = 1.302 + 0.194\ X_1 + 0.422\ X_2 + 0.428\ X_3 \qquad (2)$$

Based on this equation, the regression coefficient value of the student's problem-solving ability variable has a positive regression coefficient value. This answers the hypothesis of this study, namely the results show that in online learning, motivation and mastery of social studies concepts on the problem-solving ability of fourth grade elementary school students. This means that if students' problem-solving ability variables increase, students' online learning, motivation, and mastery of social studies concepts will also increase, and vice versa if students' problem-solving ability variables decrease, online learning, motivation, and mastery of social studies concepts will also decrease.

From the table of the results of the coefficient of simultaneous determination, the magnitude of the R coefficient simultaneously is 0.840 and the Adjusted R Square value is 0.705. This means that the variables of online learning, learning motivation, and mastery of social studies concepts affect students' problem-solving ability variables by 70.50% while the remaining 29.50% is explained by other factors outside the variables included in this study.

This is like the research conducted by Pramana (2021) gave research results in the form of 1) The process of distance social studies learning in elementary schools during the Covid-19 pandemic between other; provide material using WhatsApp, explain material using YouTube, explain material and discuss using zoom, evaluate learning using the Quizy application, evaluate learning using google form, 2) Elementary school teacher problems in distance social studies learning during the Covid-19 pandemic, among others; lack of facilities and infrastructure, teachers lack of IT skills, lack of social interaction, difficulty giving concrete pictures to students, too many student assignments, reduced time allocation for lessons, lack of parental assistance and supervision, 3) Solutions to the problems of elementary school teachers in distance social studies learning away during the Covid-19 pandemic, among others as follows; optimization of learning media, contextual learning, cooperation of teachers and parents, reducing the burden of student assignments that are tests, making learning modules, visits to students' homes.

In line with the results of Mardani, Atmaja, & Suastika (2021) research, states that based on the results of previous research and discussions, it can be concluded that there is an influence on students' motivation and social studies learning outcomes in the experimental class and control class. In addition, the application of learning with the PBL model provides 1) better opportunities to explore and experience social studies concepts, 2) become more motivated and enthusiastic in learning, 3) become more active in expressing their ideas with their own words and reasoning, 4) more fluent in communicating their findings.

6. Conclusion

Based on the research data, it can be concluded that:

1. The results of data processing on the t-test between online learning and students' problem-solving abilities obtained a probability value of 0.006 <0.05, which means that the regression model is significant, so the proposed hypothesis is accepted (H1 is accepted). Thus, there is influence of online learning on the problem-solving abilities of fourth-grade elementary school students
2. The results of the significance of learning motivation on students' problem-solving abilities obtained a probability value of 0.000 <0.05, which means that the regression model is significant, so the proposed hypothesis is accepted (H2 is accepted). Thus, there is an influence on learning motivation on the problem-solving ability of fourth-grade elementary school students.
3. The significance value or probability of mastering the social studies concept is 0.000 <0.05, which means that the regression model is significant, so the proposed hypothesis is accepted (H3 is accepted). Thus, there is an influence on the mastery of the concept of social studies on the problem-solving ability of fourth-grade elementary school students.
4. The results of the coefficient of simultaneous determination obtained that the magnitude of the R coefficient simultaneously is 0.840 and the Adjusted R Square value is 0.705. This means that the variables of online learning, learning motivation, and mastery of social studies concepts affect students' problem-solving ability variables by 70.50%, so (H4 is accepted). Thus, there is an influence on online learning, motivation, and mastery of social studies concepts on the problem-solving ability of fourth-grade elementary school students.

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Conflict of Interest

The authors declare no conflicts of interest.

References

Eggen, P. D., & Kauchak, D. P. (2012). Educational psychology: windows on classrooms plus myeducationlab with pearson etext—access card package.

Hamdani, H., Kesumawati, N., & Kristiawan, M. (2018, November). The Influence of Teachers'work Motivation And Principals'managerial Competence On Teachers'performance. In *Sriwijaya University Learning and Education International Conference* (Vol. 3, No. 1, pp. 674-681).

Legault, L. (2020). Intrinsic and extrinsic motivation. *Encyclopedia of personality and individual differences*, 2416-2419.

Mardani, N. K., Atmadja, N. B., & Suastika, I. N. (2021). Pengaruh Model Pembelajaran Problem Based Learning (Pbl) Terhadap Motivasi Dan Hasil Belajar IPS. *Jurnal Pendidikan IPS Indonesia*, *5*(1), 55-65.

Muhammad Baba Gusau, N., & Mohamad, M. M. (2020). Problem Solving Skills based on IDEAL Model in Implementing Undergraduate Final Year Project. *Journal of Technology and Humanities*, *1*(1), 26-33. https://doi.org/10.53797/jthkkss.v1i1.4.2020

Nambiar, D. (2020). The impact of online learning during COVID-19: students' and teachers' perspective. *The International Journal of Indian Psychology*, *8*(2), 783-793.

Pramana, C. (2021). Distance Learning In Primary Schools During The Covid-19 Pandemic In Indonesia: Challenges, Solutions, And Projections. *Turkish Journal of Computer and Mathematics Education (TURCOMAT)*, *12*(4), 263-270.

Riswanto, A., & Aryani, S. (2017). Learning motivation and student achievement: description analysis and relationships both. *The International Journal of Counseling and Education*, *2*(1), 42-47.

Riggs, N. R., Greenberg, M. T., Kusché, C. A., & Pentz, M. A. (2006). The mediational role of neurocognition in the behavioral outcomes of a social-emotional prevention program in elementary school students: Effects of the PATHS curriculum. *Prevention science*, *7*(1), 91-102.

Riyanto, J., Kuat, T., & Tentama, F. (2020). The Influence Of Work Competence, Learning Motivation, Independence And Discipline On Work Readiness Of Vocational School Students In Cilacap Regency. *Asian Journal of Vocational Education And Humanities*, *1*(2), 25-36. https://doi.org/10.53797/ajvah.v1i2.3.2020

Ross, S. M., & Morrison, G. R. (2013). Experimental research methods. In *Handbook of research on educational communications and technology* (pp. 1007-1029). Routledge.

Schoenfeld, A. H. (2016). Learning to think mathematically: Problem solving, metacognition, and sense making in mathematics (Reprint). *Journal of education*, *196*(2), 1-38.

Utaminingsih, M., Widjanarko, M., & Ismaya, E. A. (2022). The Effect of Problem-Based Learning Assisted by Peer Tutoring on Student's Critical Thinking Ability. *ANP Journal of Social Science and Humanities*, *3*, 101-106. https://doi.org/10.53797/anp.jssh.v3sp2.14.2022

Zu, Y. B., Liu, S., Li, G. B., Liu, C., Shu, B., & Fajrie, N. (2022). Online Learning Satisfaction Among the Zhumadian Vocational and Technical College Students. *Journal of Technology and Humanities*, *3*(1), 26-37. https://doi.org/10.53797/jthkkss.v3i1.4.2022