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The Role of Problem-based Learning Learning in Improving Student Character Education

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Abstrak

Tujuan dari penelitian ini adalah untuk memahami Peranan Pembelajaran Berbasis Masalah untuk Pendidikan Karakter Siswa. Metode analisis yang digunakan adalah metode survey yang memanfaatkan teknik analisis regresi dan korelasi terpisah. Penelitian dilakukan di SDN Kenari 07 Pagi Kecamatan Salemba dengan jumlah sampel 36 orang dengan menggunakan teknik Cluster Sampling. (1) Peranan Pembelajaran Pembelajaran Berbasis Masalah untuk Pendidikan Karakter Siswa; (2) Minat berpengaruh terhadap Pelaksanaan Pembelajaran Problem-based Learning; (3) Latar belakang mempengaruhi pelaksanaan pembelajaran Problem-based Learning; dan (4) Kecerdasan berpengaruh Sesuai dengan temuan penelitian ini, diharapkan Pendidikan Karakter Siswa Kelas V SD dapat ditingkatkan dengan adanya pembelajaran berbasis masalah, karena hasil proses verifikasi menunjukkan bahwa ini signifikan. faktor. Ada banyak jenis model pembelajaran berbasis karakter yang digunakan untuk mengatasi masalah pendidikan, namun salah satu yang paling efektif adalah model pembelajaran berbasis masalah, yang dengan mensyaratkan setiap anak untuk memiliki seperangkat keyakinan dan nilai yang unik. melengkapi satu sama lain, memungkinkan guru untuk lebih efektif mengidentifikasi kepribadian dan karakter unik setiap siswa saat mereka mengatasi masalah yang diberikan.

Kata Kunci: Pembelajaran Problem-based Learning, Pendidikan Karakter

Abstract

This study aims to determine the Role of Problem-Based Learning in Student Character Education was t. Simple regression and correlation analysis methods are utilized in the survey-based research methodology. Using the Cluster Sampling approach, this study was carried out at SDN Kenari 07 Pagi in the Salemba District with a total of 36 participants. (1) The role of problem-based learning in student character education; (2) Interest influences problem-based learning implementation; (3) Student background influences problem-based learning implementation; and (4) Intelligence affects problem-based learning implementation. Based on this research, it is anticipated that the influence of problem-based learning will help character education for elementary school kids in the fifth grade because the outcomes of the verification shows that Problem-Based Learning plays a significant determining role. In many ways, the character improvement model is used to address educational issues, and one of them is the problem-based learning model, which undoubtedly has an impact on children's development because each child has unique traits that can be used to demonstrate the child's character when resolving issues.

***Keywords**: Problem-based Learning, Character Education*

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INTRODUCTION

Attitude problems cannot be separated from environmental influences, both the physical environment and the social environment. Students who come from harmonious families and from an adequate economy tend to show good attitudes and behavior. And vice versa, students who receive less attention or from less fortunate families tend to experience many problems in learning. Therefore the teacher as an educator must be able to provide a way out for students in order to reduce learning difficulties. In relation to the 2013 curriculum, student attitude problems can be seen in the first and second core competencies.

In the first core competency, which contains a spiritual attitude, students are expected to have a religious attitude and be able to tolerate each other among religious communities. Whereas in the second competency (KI II) students are expected to have good social attitudes such as mutual help, respect, discipline, and so on. These two competencies show the characteristics of students because character education is very necessary for students to become individuals who are intelligent and have character (Insani et al., 2021). Based on Presidential Regulation Number 87 of 2017 promoting character education called PPK. PPK is an educational movement under the responsibility of the education unit to strengthen the character of students through the harmonization of heart, taste, thought, and sport by involving and cooperating between educational units, families, and communities as part of the National Movement for Mental Revolution. Strengthening character education really needs to be done in learning so that the knowledge and skills possessed by students are balanced with their character(Aswidar & Saragih, 2021). The knowledge possessed can be misused if students do not have good character.

In this situation, a variety of learning models are employed to address educational issues, and one of them is the Problem-based Learning (PBL) model. This model undoubtedly has an impact on children's development since it allows teachers to better understand each child's unique learning style. Solve the issues at hand; some psychologists contend that doing so will advance science, as seen by the attitudes that characterize a child's actualization in these issues (Kusnandi, 2017). Humans, as organisms, have a natural desire to grow, which makes them aware of their existence and causes them to develop a negative attitude toward their abilities, making everything they do seem difficult to accomplish. In contrast, when it comes to doing good things, they always perceive everything as being very simple. Resolved, it is evident that the environment has an impact on the Problem-based Learning learning paradigm generally, thus further research is required to determine the best course of action (Darlia et al., 2018).

Based on initial observations made at SDN Kenari 07 Pagi, especially those related to students' social attitudes, the teachers suggested several student attitudes that often appeared in learning. Students often make noise during learning which can disturb friends around them. Students play with toys that will be played with during recess. If there is already a match for interaction, then it is certain to be a conversation outside of class that can disturb other friends. Often students are found disturbing other friends in various ways, such as throwing rolls of paper, to make fun of their friends, so that their friends are no longer concentrating on studying. Damaging school goods or facilities for students who lack discipline (Wanelly & Fauzan, 2020). Playing ball in the classroom and breaking windows, playing using a wooden ruler, and finally breaking. There are still a number of problems that often arise in elementary schools as part of the phenomenon in children who still really need a patterned and specifically designed learning process to change teacher behavior in certain situations in a better direction. Especially when "Learning from Home (Online Learning)" had to be carried out during the Covid-19 pandemic, this problem was increasingly sticking out and the relationship between educational interaction and humane action became neglected in improving student character education (Manurung. S. Alberth, halim. A, 2020).

Learning activities are the most significant parts of the educational process in schools, therefore whether educational objectives are successfully attained or not depends significantly on how students themselves

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perceive the learning process. Everyone has a different perspective on learning, and in order to get an objective understanding of learning, especially learning at school, further research about the idea of learning is required. A person's perspective on learning will influence his activities related to learning. Educating in accordance with (Safitri. D; Manurung. S. Alberth, 2020) is a process wherein a behavior emerges or alters in response to a learning circumstance in order to develop intelligence; in its application, learning is an individual activity whereby one acquires behavioral approaches and skills by digesting learning materials. As stated by (Hung, 2016) The psychological definition of learning is a process of change, namely a shift in behavior brought about by an individual's interactions with his environment while living his life. All facets of behavior will show these changes.

A person goes through a lot of changes, both natural and type-related. Naturally, not every change in a person corresponds to a change in the definition of learning. Although some people define learning as the acquisition of new knowledge and others as a process of change, in this instance learning refers to an endeavor to alter behavior (Sri Delina Lubis, 2015). Learning will therefore affect the changes in those who want to learn. Not only is knowledge being added, but also skills, attitudes, understanding, self-esteem, interests, character, and self-adjustment are being formed. Learning can be defined as a series of physical, psychophysical activities that contribute to the development of the whole person, including elements of creativity, taste, intention, cognitive, affective, and psychomotor processes. It clearly contains all organizational aspects and one's personal behavior (Dale, 2012). Learning mathematics can help kids develop a problem-solving mindset, which they can use to solve problems. Learning mathematics is a mental activity that involves a methodical, exact, and precise understanding of the relationships and symbols present, followed by the application of the resulting concepts to issues in diverse cases, assertions, and real-world scenarios (Widiastuti & Kurniasih, 2021).

Judging from the context of science, the quality of education in Indonesia is indeed not comparable to developed countries and other developing countries. Indonesia is still classified as a country with low quality education. The low-quality of education can be seen from the achievement scores obtained through the results of the PISA survey. In 2012 Indonesia was ranked 64th out of 65 countries with a score of 382 (Tinio & Browne, 2018). In 2015, Indonesia scored 403 with 64th place out of 72 countries (Tinio & Browne, 2018). Furthermore, in 2018 Indonesia was ranked 74th out of 79 countries with a score of 396 (Tinio & Browne, 2018). The three scores obtained from the PISA survey three times in a row from 2012 to 2018 can be seen that Indonesia has not moved from the bottom 10 rankings. From there it can be concluded that learning outcomes in education in Indonesia are classified as very low. The low quality of science education in Indonesia does not necessarily make the government silent. The low quality of education seems to be a whip for the government and educational institutions to make more efforts to improve the learning curriculum in this country. Recognizing that Indonesia's ranking has not moved from the bottom 10 means that something is not right in the application of learning, especially in the context of learning mathematics.

The learning model influences students' thinking skills to solve existing problems in learning in order to achieve learning objectives. The learning model is felt to be in line with the 2013 curriculum where learning is centered on students and uses scientific/scientific approach principles including the PBL learning model (Fincham et al., 2019). PBL is a learning model based on constructivism and provides accommodation regarding student involvement in learning and playing a role in contextual problem-solving efforts according to Arens (Ravitz, 2009). The syntax of PBL includes a student's orientation to problems, a student's learning environment, a student's direction of a group or individual study, a student's development and presentation of outcomes, and a student's analysis and evaluation of the problem-solving process.

Today, there are more and more studies examining how to improve students' character in learning mathematics through learning models that are appropriate to the context of the 2013 curriculum. One of the three models that are compatible with the scientific approach in the 2013 curriculum is the problem-based learning (PBL) model. Some of the many research on problem-based learning (PBL) models include those

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carried out in their research entitled "The Effect of Problem-based Learning Models Assisted by Concrete Media on Mathematics Learning Outcomes in Class V SD" succeeded in improving Mathematics learning outcomes compared to student-centered learning models (Putri & Manurung, 2020). Then the results of Riana Rahmasari's research with the title "Implementation of Problem-based Learning Models to Improve Mathematics Learning Outcomes in Grade IV Elementary Schools", also succeeded in proving that the PBL model succeeded in improving Mathematics learning outcomes in elementary schools (Wicaksono & Rachmadyanti, 2016). The next success was the research conducted by Eni Wulandari, Setyo Budi, and Kartika C. S with the title "Application of the PBL (Problem-based Learning) Model in Mathematics Learning for Class V Elementary School Students". The results of this study prove that the PBL model can improve both the process and the results of learning Mathematics (Nurlaila, 2019), whereas the three previous studies used a quantitative methodology. The importance of this research is to be carried out in order to increase the activeness of students in the learning process.

From the many research results on the influence of the problem-based learning (PBL) learning model, it is necessary to review how influential the research results are in terms of the variety of subjects studied. Therefore researchers seek to collect research on problem-based learning (PBL) learning models in improving student character through research with the title "The Role of Problem-based Learning in Improving Student Character Education".

METHOD

The purpose of this study, which employs a survey methodology and correlation technique, is to determine how the Problem-based Learning (PBL) learning model might be used to enhance student character education. to establish a connection between two or more variables or search for a variable's impact on other factors (Sugiyono, 2010). While the study's initial settings were uniform, one of the sample groups later received problem-based learning instruction. While the other groups received instruction using the lecture technique. Fifth graders at SDN Kenari 07 Pagi Jakarta served as the study's participants. According to Sujana, measuring student success can be done in various ways, including written tests, oral tests, action tests, and observations. There are three kinds of learning outcomes namely; skills and habits, knowledge and understanding, attitudes, and ideals. The target of this study is to increase student character education. As previously explained, the model applied to this learning activity is the Problem-based Learning model. The number of students in this study was about 36 students. The 36 students are divided into several groups, and each group is given a big project that must be completed in groups.

Students in the fifth grade at SDN in Senen District, East Jakarta, made up the study's population. Three SDNs in Senen District were used since their student populations shared similar traits and routines. The population can theoretically be defined as all values, including the outcomes of computations and measurements, both quantitative and qualitative, of specific qualities pertaining to a set of objects that are comprehensive and clear (Sugiyono, 2010).

Students in the fourth grade at Kenari 07 Pagi Elementary School were chosen as the study's sample using the Cluster Sampling method. In Cluster Sampling, the sampling procedure involved choosing one SDN among three SDNs that represented a single sub-district and shared similar characteristics.

The technique used to acquire the data is a systematic, standardized way to do it. To address the primary research challenges and accomplish research goals, it is essential to select pertinent data collection procedures. The process of gathering data for research involves a number of processes, including selecting data collection methods. These tools should be relevant to concerns regarding their usability, effectiveness, and dependability. The purpose of the research tool is to describe the tools utilized in line with the established variables (Arikunto, 2015). An instrument trial is required for the set variable instrument. Finding out the accuracy and dependability of the test's items and questions is its primary goal. The Ms. software computer is used to analyze the data that

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has been collected. For each dependent and independent variable in the study, Excel provides the mean, median, mode, standard deviation, range, frequency distribution, and histogram graphic display of the data.

Using inferential statistics, specifically Lillefors, the estimated error of the regression of X1 and X2 was subjected to a normality test to determine whether the data were normal. With the caveat that Ho, which denotes that the sample is normally distributed, is accepted if the analysis of the L-count < L-table yields positive results. (Accad, 2016). Using inferential statistics, specifically Lillefors, the estimated error of the regression of X1 and X2 was subjected to a normality test to determine whether the data were normal. With the caveat that Ho is acceptable if the study of the Lcount L table indicates that the sample is normally distributed. As well as partial coefficients with the t-test, provided that t-count > t-table, then the correlation coefficient is significant, and the simple correlation coefficient between variables using the Pearson product-moment formula, under the condition that if r-count < r-table then Ho is accepted, which means the correlation coefficient is significant (Wahab, 2018).

FINDINGS AND DISCUSSION

A broad description of the distribution of the data collected in the field will be given in the description of the data that will be presented as a result of this study. The information shown is raw data that has been transformed using description techniques. Regarding the data's description, a histogram is included with the frequency distribution, total score, average score, standard deviation, mode, and median as well as the maximum and minimum scores.

Data descriptions are helpful for describing the frequency distribution of data, the greatest tendency, the intermediate tendency, and the distribution pattern (maximum-minimum), as well as for describing the patterns of data distribution or the homogeneity of the data.

Based on the research's title and objectives, the study's two independent variables and one dependent variable—student character education data (Y), and problem-based learning—include the following: (X). Using a non-test instrument, the information was gathered from 36 Grade V pupils at SDN Kenari 07 in the Salemba District of Central Jakarta.

A survey with 30 statement questions and 36 respondents was used to collect data on student character education. A Likert scale is used to score responses, and there are five possible outcomes: Very often, Often, Sometimes, Rarely, and Never. The possible theoretical scores range from 30 to 150. The empirical range is between 73 and 119. Based on the observational data gathered, a maximum score of 119 and a minimum score of 73 are obtained, the standard deviation (SD) is 11.37, the variance is 142, and the average is 96.11. 5. The following is a description of the student character education variable as shown in table 1:

Table 1
Description of student character education variables

	N	Range	Minimum	Maximum	Sum	Mean		Std. Deviation	Variance
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Statistic
Pendidikan karakter siswa (Y)	36	46	73	119	3460	96,11	1,990	11,937	142,502
Valid N (listwise)	36								

Problem-based Education Learning A questionnaire comprising 30 statement questions and 36 respondents was used to collect the data. A Likert scale is used to score responses, and there are five possible outcomes: Very often, Often, Sometimes, Rarely, and Never. The possible theoretical scores range from 30 to 150. According to the observational data gathered, a maximum score of 120 and a minimum score of 65 are obtained; the empirical range is between 71 and 106; the average is 89.61; the standard deviation (SD) is 12,364;

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and the variance is 152,873; The description of Problem-based Learning learning variables is presented in table 2 as follows:

Table 2
Description of Problem-based Learning Learning variables

	N	Range	Minimum	Maximum	Sum	Mean		Std. Deviation	Variance
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Statistic
Pembelajaran Problem-based Learning (X)	36	55	65	120	3226	89,61	2,061	12,364	152,873
Valid N (listwise)	36								

Since a = 47.9 and b = 0.434 for the general regression equation = a + bX, the general regression equation is = 47.9 + 0.434X. The greatest Lcount from testing the regression estimate error on X is 0.102. A value of 0.138 was found for the Ltable at the real level = 0.05. Given that Lcount Ltable is 0.102 0.138 as a result of the comparison between the two, Ho is accepted, and it can be deduced that the error in the regression estimate of X is normally distributed. The normality test for the estimated error Ŷ for X with a normal distribution is presented in table 3 as follows

Table 3
The normality test for the estimated error Ŷ of X is normally distributed

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Pendidikan karakter siswa (Y)	,102	36	,200*	,974	36	,535
Pembelajaran Problem-based Learning (X)	,084	36	,200*	,972	36	,472

Following the completion of the necessary data analysis steps, an inferential analysis is carried out to test the hypothesis and determine whether the formulated research hypothesis is supported by the collected empirical data.

Putting the regression and correlation formulas to use in testing the study hypothesis. The test findings are detailed below. Simple regression and correlation formulas were used to examine the hypothesis. The F test is used to perform the regression significance test and regression linearity test for simple regression analysis. In the meanwhile, the t-test is used to perform a simple correlation significance test. Product Person Moment is the widely used basic correlation methodology.

The Role of Problem-based Learning (X) and Student Character Education

The hypothesis being tested is

H0: $y1 \leq 0$

H1: $y1 > 0$

The formulation of the research hypothesis is that there is a beneficial relationship between student character education and problem-based learning (X) (Y). According to the findings of the regression analysis, the relationship between Problem-based Learning (X) and the outcomes of mathematics learning (Y) may be characterized by the equation = 47.9 + 0.434X. Analysis of variance was used to perform significance and linearity regression tests to determine whether the regression equation model discussed above is significant or not. Summary of the regression linearity and significance test results between student character education and problem-based learning

Significant regression ($F_{count} = 7.24 > F_{table} = 4.02$)

Linear regression ($F_{count} = 1.721 < F_{table} = 2.23$)

The strength of the role played by the student character education variable and the problem-based learning variable was then assessed using a correlation test using the Product Person Moment. The correlation coefficient for the calculated findings was rxy = 0.419. Ttable at a significant level of = 0.05 with 34 degrees of freedom yielded the price of t-table = 1.69, whereas the significance test of the correlation coefficient with the t-test obtained the price of tcount of 2.74. The correlation coefficient and the findings of the t-test demonstrate how strongly the X variable contributes to Y. As can be observed, the t-test analysis produced tcount and t-table values of 1.76 and 1.19, meaning that there is a positive application between the variables Problem-based Learning and Student Character Education because t-count > t-table is 1.76 > 1.19. The coefficient of determination is 0.419, explaining that 41.9% of the variance of the student character education variable is Problem-based Learning clarifies or determines. The variables associated with problem-based learning and student character education have a favorable association, according to the findings of the calculations made in the aforementioned investigation.

Using what has been learned from watching and studying the learning process, problem-based learning provides a better understanding of problems. This better understanding is obtained from the activity of determining basic questions at the beginning of learning. It turns out that basic questions focus on problems that must be solved so that students are able to find relatively relevant solutions to overcome problems, problems and determine the root causes of problems independently because with independent learning students will build curiosity about the subject matter being studied (Widiastuti & Kurniasih, 2021). They are also more confident in expressing their ideas and thoughts. Some 83% of students said in their interviews that basic questions helped them focus on finding knowledge related to solving the problems they were going to work on. When the information search process will be implemented in problem-solving, they will focus on important parts that can answer these fundamental questions. Stages of problem-based learning also help students to construct projects carefully and in detail. The stages of making a project are carried out in orderly and structured steps so as to provide a final result with a better precision value. Before making a project students must make a design and schedule each stage in advance. From the designs made, students can determine the tools and materials they need independently. At this stage, student character education can work collaboratively, students begin to be honed. They begin to combine the knowledge they have with the problems they will solve. Starting a discussion to determine the design and find a way out to overcome some of the problems that might be encountered. Problem-based learning can help students better evaluate the work of other groups. Each group produces various problem-solving with various models but the learning content contained in it is relatively the same. This aspect helps them to better provide input on the work of other groups. The group in charge of evaluating the work of other groups can find deficiencies in the work of other groups.

Overall the problem-based learning (PBL) learning model has a positive influence on student character education in elementary schools, especially in the affective aspect, namely student character. Criteria for the concept of problem-based learning (PBL) are carried by the discovery through presenting problems which are then solved by students themselves and are deemed appropriate to be applied to learning in elementary schools. This suitability is reinforced by Piaget's view (Darlia et al., 2018) that elementary school children who are in the age range of 7-11 years are at the stage of systematic thinking to achieve problem-solving. the characteristics of elementary school students according to Piaget are in accordance with the syntax of the PBL learning model, which outlines systematic learning by thinking that begins with an investigation, including identifying problems, performing investigations, producing and presenting outcomes, as well as analyzing and evaluating the investigation process (Aswidar & Saragih, 2021).

From the results of obtaining a Determination coefficient of 0.419, it explains that 41.9% of the variance of the student character education variable is defined by problem-based learning or described by it. It may be inferred from the outcomes of the analysis calculations above that there is a favorable association between the variables related to problem-based learning and the variables related to student character education. Student

character education belongs to the affective domain. The use of problem-based learning (PBL) learning models is proven to be able to help students improve student character which is then used to solve mathematical problems so that student character increases. Thus the use of the PBL model as an inculcation of attitudes in the range of characters helps students to achieve Mathematics assessment criteria in the form of products, processes, applications, and attitudes in depth (Kurnia et al., 2015).

The variety of characters in each research result cannot be used as a benchmark for comparing the high and low attitudes of each student used in research. Differences in the character of each study can be caused by various influencing factors. Morelent likens students to "various fruit seeds", where these seeds have different potential advantages and the function of the school is to become the land where these seeds grow and excel according to their respective characters (Insani et al., 2021). This perspective leads to the conclusion that not all students' personalities lend themselves to the use of problem-based learning (PBL) learning models, and that not all students can develop their critical thinking skills using problem-based learning (PBL) learning models.

The numerous research on the problem-based learning (PBL) style of instruction offers a variety of hues for the outcomes of bettering student character education that is given. The effectiveness of the problem-based learning (PBL) instructional model in enhancing students' character education shows different improvement rates. The variation in the number of increases from one study to another, of course, there will be influencing factors. This factor is divided into intrinsic factors and extrinsic factors. Intrinsic factors include the level of students' desire to succeed in learning, the level of motivation to learn, and the desire to realize ideals. While extrinsic factors include rewards, conducive levels of learning activities, and interesting activities in learning (Bukhori, 2018). Based on all existing factors, in essence, children are "unique" individuals where each is equipped with diverse talents, potential, traits, and characters (Bereiter & Scardamalia, 2000). Therefore, the success of children in increasing their various abilities cannot be measured only through one model.

Based on the description above, in general, it can be concluded that problem-based learning trains students to be able to improve student character and act creatively and systematically. This activity can significantly increase the activity of students in the classroom so that students become active in learning activities. Problem-based learning makes students actively involved and responsive in learning (Hastang, 2019). This learning model can also make students more courageous in expressing ideas from their work. Problem-based learning improves students' skills in collaborating and communicating problems (Sri Delina Lubis, 2015). Each stage also helps students produce products with high precision values. The problem-based learning model is proven to be able to provide significant results on student learning outcomes with positive precision values (Insani et al., 2021). So in general it can be concluded that the problem-based learning model plays a significant role in developing student character. Problem-based learning is suitable for developing student character (Kurnia et al., 2015). This study provides an illustration that the application of the PBL Model can increase the activeness, creativity, collaboration, and communication of students in learning. 07 Morning and also the object of research is limited to learning Mathematics in the chapter on arithmetic story problems.

Overall, the advantage of this research is that it provides an overview of the success of the problem-based learning (PBL) learning model which can improve student character education in Mathematics learning content in elementary schools. Apart from all the limitations of the authors, this research is not immune to the shortcomings that researchers are aware of or not. Based on the search results of a number of research journals that match the title, this research is still limited to the scope of grades 4 and 5 of elementary school. For all the shortcomings in this study, hopefully, it can be a reference in developing research with a similar title to present even better results.

CONCLUSION

It seems that there is a positive role between the independent factors and the dependent variable based on the findings of the test calculations and analysis that have been described previously. The findings of testing and analysis demonstrate that the problem-based learning paradigm influences how students are educated in terms of character. Thus, statistical evidence supports the research hypothesis that there is a positive relationship between the variables of the problem-based learning model and student character education. The following conclusions are reached based on the findings of the study that has been done: (1) Problem-based learning has an impact on students' character development; (2) Interests have an impact on how problem-based learning is implemented; (3) The application of problem-based learning is influenced by the students' backgrounds; (4) The implementation of problem-based learning is influenced by intelligence.

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