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THE INFLUENCE OF THE PROJECT BASED LEARNING MODEL ON THE CHARACTER, 21ST CENTURY SKILLS AND MATHEMATICS LEARNING OUTCOMES OF CLASS IV

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ABSTRACT

In initial observations in January 2024 at SDN 23 Sela, students showed a lack of enthusiasm, focus on learning and difficulty in understanding mathematical concepts. The aim of this research was to 1) find out how the project based learning model was applied to class IV students at SDN 23 Sela, Pangkep Regency 2) how the model affects student character, 21st century skills, and mathematics learning outcomes. The type of research used is pre-experimental, with quantitative research methods. This research involved 21 fourth grade students. The research instruments used were observation sheets, tests and documentation. using descriptive and inferential data analysis. The research results show that: the project based learning model is rarely used in class IV at SDN 23 Sela. This reflects recent efforts to improve character, 21st century skills and mathematics learning outcomes. Based on the results of the hypothesis test, there is a significant influence, this shows that the influence of the project-based learning model on the character, 21st century skills and mathematics learning outcomes of class IV students is significant, with a significance of 0.000 < 0.5. This means that there is a significant influence between the character-based project learning model, 21st century skills and results.

1. INTRODUCTION

In essence, education serves as a means of humanizing people by preparing individuals, communities, and a country for a better future. There is a learning process in education. A learning

model is necessary for the learning process because it serves as a concept or systematic procedural framework for achieving certain goals and as a guide for teachers when creating and carrying out learning activities.

Education is defined as "a planned conscious effort to create a learning atmosphere and learning process so that students actively develop their potential to have religious spiritual strength, self-control, personality, intelligence, noble character, and skills needed by himself, society, nation, and state" in Chapter 1 Article 1 of Ministry of National Education Law Number 20 of 2003 concerning the National Education System. The needs of modern education are becoming more complex in order to prepare pupils for the difficulties of the twenty-first century. In the age of globalization and rapid technological advancement, students need to possess strong qualities and pertinent skills in order to succeed and make a constructive contribution to society. The project-based learning paradigm has become a popular way to help students develop their skills and qualities.

Students participate in genuine project tasks that are relevant to real-world situations as part of the project-based learning model. Students actively participate in the design, execution, and assessment of their own projects. They engage with peers, overcome obstacles, and gain knowledge from real-world experiences during this process. In addition to helping students acquire 21st century abilities including problem solving, teamwork, creativity, critical thinking, communication, systemic thinking, and leadership, this learning approach goes beyond conventional teacher-centered learning (Trilisiana Novi, 2023).

The field of education faces problems and expectations in the twenty-first century. Students need to acquire life skills in the twenty-first century. due to the fact that students compete both domestically and internationally. The field of education is able to equip the next generation to confront life in this competitive era thanks to 21st Century Skills. Thobroni clarified that the constructivism idea allows people to pursue their wants or learn new things at their own pace, using the resources of others to help them do so (Kamaruddin et al., 2023). This implies that those who are learning require the assistance of others. Accordingly, learning in the twenty-first century depends on both knowledge and abilities. When it comes to many aspects of life, abilities are essential. Therefore, improving people's lives through education is a component of national development. For pupils to succeed in 21st century learning, teachers must be able to recognize the skills that their students possess. Creativity, critical thinking, teamwork, problem solving, communication, social, and character skills are all applied in this 21st century learning. A person's character might emerge when he encounters impromptu situations that result in intelligent behavior (Supriadi et al., 2020). Based on this, analysts examined the character of the understudies, especially review IV understudies, during the initial impressions at school. They tended to be more composed when they interacted with contemporary people in the school setting, but after a few days, they began to show their character. For instance, when understudy conduct appears right away, it becomes unmanageable from other people. The reflexive conduct that manifests is the outcome of long-standing mental patterns. Being adept at problem-solving entails being able to get over the obstacles one faces. If students are able to solve these difficulties during the teaching and learning process, it indicates that they have critical thinking skills. where all things will be connected to one another (Trilisiana Novi, 2023).

The field of education faces demands and difficulties in the twenty-first century. Understudies in the twenty-first century must possess life skills. Because students compete not only inside their country but also with other countries, 21st Century Abilities empowers the education sector to prepare for future generations. Thobroni clarified that the constructivism idea allows people who wish to learn or find their needs the flexibility to do so while using the resources of others to make their discoveries (Kartika et al., 2024), Accordingly, 21st-century learning does not rely solely on knowledge but also on skills, which are essential in many aspects of life. As a result, education plays a role in national progress by improving the lives of individuals and communities. Teachers must be aware of their students' talents in order to design lessons that will help them succeed in the twenty-first century. This 21st century education uses basic creativity while taking into account participation issues and communication skills.

Character traits and social skills Being gifted at solving problems means that they can go over the problems they are facing. In the educational and learning process, if students are able to shed light on these problems, it means that they can (Rifa Hanifa Mardhiyah et al., 2021).

From elementary school to the university level, mathematics is a subject that is studied at every educational level. In kindergartens, mathematics is even taught informally (Rani et al., 2021). Students must engage directly with actual things and experiences during the learning process. As a result, a direct learning approach is crucial, particularly in elementary school mathematics classes. This is because the goal of teaching mathematics is to make students proficient in the subject and to give them the pressure to organize their reasoning when applying it to real-world situations. Day (Sains & Safitri, 2024). Learning outcomes in mathematics are behavioral changes brought about by students' experiences during the learning process, which include cognitive, emotional, and psychomotor components. Tests, both written and oral, can be used to gauge success.

Agreeing to (Martina Lona, 2019) The results of the research on the "implementation of a project-based learning model (project based learning) to improve student activities and learning outcomes" are known, and this action demonstrates that both theoretical and empirical studies are successful in putting the PjBL learning model into practice to improve activities and learning outcomes in material with characteristics in level of analysis while utilizing classroom action research methods. Apart from that, the investigation was (Komara, 2018) concerning "strengthening character education and 21st century learning" through the use of quantitative descriptive techniques. His study's findings demonstrate how 21st century education may help students become more creative, critical thinkers, and problem solvers. Consenting to (Angga et al., 2022) It is well known that the 21st century skills-based learning model is applied in the learning process in an attempt to develop student character. This is related to "the application of character education with a 21st century skills-based learning model." Through the use of literary studies, it is possible to draw the conclusion that character education for students today is inextricably linked to three educational environments: the family, school, and community.

According to the findings of the author's preliminary observations at SDN 23 Sela, pupils had a less passionate attitude and less focused attention toward the teacher during the teaching and learning process. Students struggle to grasp mathematical ideas, and it is evident that even when teachers allow them to practice answering practice questions, many of them still struggle with the questions, such as when they are trying to solve issues throughout the learning process. This is a result of teachers controlling the learning paradigm, which means that students are accustomed to obtaining information about the course materials without having to go through the information discovery process. The focus of the students' attention is not on the.

The 21st century's character and skills, on the other hand, are the result of teacher-centered education, which leaves students with few opportunities to reach their full potential. For example, students still struggle to demonstrate tolerance, creativity, and curiosity during the learning process, and occasionally they lack the capacity to take responsibility for the choices they make. Students' communication, teamwork, and problem-solving skills are also impacted. As a result, the learning environment is less favorable and pleasurable, and the way the material is presented prevents students from reconstructing their learning, making it harder for other students to comprehend and resolve their own issues.

Accordingly, researchers adopted a project-based learning paradigm as a learning endeavor that may get over these issues. Project-based learning is a method of teaching that starts with challenges in order to gather and incorporate new information based on practical experience. Students study in real-world problem scenarios under the project-based learning approach, which can create lasting knowledge and facilitate learning projects. Students that use the project-based learning paradigm are more likely to be proactive, self-sufficient, understanding, accountable, and innovative in their problem-solving. Thus, the project-based learning approach can help students develop their character traits, particularly their 21st century talents of creativity and curiosity.

The researcher developed a research subject titled "The Influence of the Project Based Learning Model on Character, 21st Century Skills, and Mathematics Learning Outcomes of Class IV Students at SDN 23 Sela Pangkep Regency" based on the background information provided about the issue.

2. METHODS

Class IV pupils are the subjects of the quantitative research design. The research design is a one-group pretest-posttest, and the research method is a pre-experiment type experiment. This approach uses a research model that is the only one that can accurately test hypotheses about casual relationships (cause-effect). In this study, tests, documentation, and observation sheets were employed as data gathering methods. While the test is only for students and takes the form of a pretest and posttest, the observation sheet is meant for both teachers and students.

Saturated samples were used to select 21 respondents from the public for this study. Saturated sampling is the process of selecting research samples from the total population. It is anticipated that the information gathered from this observation sheet will be able to give a quantitative picture of the 21st-century project-based learning model, character, and talents. With an emphasis on the relationships between these factors, the data will thereafter be statistically examined to test the hypothesis developed in the study. important partnership.

A test instrument consisting of multiple-choice questions was then used for data collection in this study. The ten questions on this test are intended to gauge how well pupils have understood the content that has been covered. There are four possible answers for each question, and only one is chosen as the right one. Curriculum standards and associated ideas that are pertinent to the study's goals served as the foundation for the creation of this assessment tool. In order to guarantee that the research findings can accurately reflect the population as a whole, it is anticipated that this test will yield objective data about the degree of students' comprehension of the subject matter. Respondents receive a brief explanation of the test's objectives and methodology prior to administering it.

To ascertain the degree of student comprehension of the taught topic, the test results are gathered and examined after completion. To determine the pattern of correlations between the variables under study, test results data were analyzed using both descriptive and inferential statistical approaches. The test's results will serve as a gauge for assessing how the project-based learning model has affected the learning outcomes for character, Bada 21 proficiency, and mathematics. The research's data gathering methods also make use of documentation as tangible proof.

3. RESULT AND DISCUSSION

RESEARCH RESULTS

In this area the comes about of the information portrayal of each variable will be displayed which incorporate the rate of the extend based learning learning demonstrate X Characteristics Y1 21st century abilities Y2 Science learning results Y3.

1.) Learning Process with the Pjocet Based Learning

a. Results of observations of teacher activities

Picture 3.1. Application for Research Permit by the Principal of SD Negeri 23 Sela

Picture 3.1 Implementation of the Pretest Test

This is modified to meet the researcher's demands in order to finish the study based on information gathered from observation sheets. The findings of teacher observations in the teaching and learning process using the project-based learning (PjBL) learning model, where the teacher prepares the material to be delivered before carrying out the learning. In particular, the PjBL learning model requires the preparation of tools and materials in addition to the prepared material in order to create a project in learning. Together with the students, the instructor plans and schedules the project-creation activities. In order to help students develop their character and 21st century abilities, the teacher oversees the project's implementation during the learning process.

The results of the teacher's observations can be used to determine whether or not the project-based learning model is being used in class IV at SD Negeri 23 Sela. The goal of this learning process is to see the 21st-century skills and character of the students.

It is possible to observe the outcomes of teacher activities that employ the Project Based Learning learning model. Based on indicators of how well teacher activities using the Project Based Learning learning model are being implemented, the first meeting included a pretest for the students, the second meeting had a 75% implementation rate, including the high category because the teacher at the second meeting II did not conduct an assessment at the end of the lesson or conduct perception, and the third meeting received a score of 13 with a total percentage of 81.25%, which is considered high because the teacher applies the project based learning model by following the learning procedure by asking questions at the end of the lesson.

b. Results of observations of student activities

According to the findings of the researchers' observations of student activities, pupils engaged in the learning process with a great deal of zeal. Therefore, it is crucial to enhance student learning activities throughout the learning process so that students and teachers can engage and improve students' comprehension and mastery of the teacher's information.

It is evident from the findings of observations of student activities utilizing the project-based learning learning model that those activities are feasible. The students were given a pretest by the researcher for the first meeting, and at the second meeting, they received a score of 12 and a performance percentage of 75%, both of which fell into the high category. However, despite the high percentage, the students were unable to solve the teacher's problem during the meeting. III obtained a score of 13 with an 81.25% percentage, falling into the high group, as a result of students being able to participate in discussions regarding creating and.

In essence, it demonstrates that there was an increase from the first to the sixth meeting; therefore, it is necessary to raise and sustain the effectiveness of student learning activities. To help researchers understand the 21st century character and skills of class IV students at SD Negeri 23 Sela, observation sheets of student learning activities that have seen very good improvements are used to document the teaching and learning process.

2.) The influence of the project based learning on the character of class IV students at SDN 23 Sela

The study's focus is fourth-grade students, who are still developing their sense of self and have a strong need for attention, which contributes to their high levels of egocentrism. As such, it is critical to instill character values in students during the teaching and learning process. Researchers concentrate on five traits—tolerance, diligence, creativity, curiosity, and responsibility—that they hope to see in the learning process. Students' attitudes and actions toward particular situations will be influenced by the explanation of these five character values. Aside from ensuring that pupils maintain equilibrium in their social interactions, this quality is crucial for developing students who possess not only academic intelligence but also the necessary social, emotional, and ethical competencies.

According to the above table, the students' character values are evident at every meeting. The researcher administered a pretest at the first meeting, and in the second meeting, the students received an 8 with a percentage of 66.66%. Due to the pupils' lack of tolerance, inventiveness, and interest at

the start of the meeting, it is evident that their character is generally poor. Meeting IV received a score of 10 with a percentage of 83.33%, which is regarded as very high, because students have begun to apply and demonstrate their character values. Meeting III received a score of 9 with a percentage of 75%, which is in the high category. On the fifth

3.) The influence of the project based learning on the 21st century skills of class IV students at SDN 23 Sela

Learning in the twenty-first century looks at skills in addition to knowledge. In many aspects of life, skills are essential. To ensure that students are ready to face problems in the twenty-first century, the learning process necessitates 21st century abilities including communication, teamwork, creativity and innovation, critical thinking, and problem solving. The following table shows the observation sheets that researchers used at each meeting to determine the 21st century abilities that students possessed.

The implementation of student activities in the 21st century skills observation sheet was observed at the first meeting, according to the above table. The researcher administered a pretest to the students, and the second meeting received a score of 13 with a percentage of 65%, which is in the low category. However, a number of 21st century skills, including problem solving, communication, cooperation, and critical thinking, are still not sufficiently implemented. With a percentage of 85% including the high category, the third meeting received a score of 17. The fourth meeting received the same score as the third, during which the students displayed improved communication, teamwork, critical thinking, and problem-solving skills.

Picture 3.3 Mathematics Learning Media

Picture 3.4 Implementation of the Posttest

4. The influence of the project based learning on the mathematics learning outcomes of class IV students at SDN 23 Sela

1) Pretest Mathematics Learning Results for Class IV Students at SD Negeri 23 Sela, Before implementing the Project Based Learning

Based on the findings of a study carried out by researchers at SD Negeri 23 Sela, Pangkep Regency, between September 19 and September 27, 2024, data was gathered using instruments to determine the mathematics learning outcomes in the form of class IV grades at SD Negeri 23 Sela.

The following information relates to fourth-grade pupils at SD Negeri 23 Sela's learning outcomes in mathematics:

Descriptive Statistics

	N	Range	Minimum	Maximum	Sum	Mean	Std. Deviation	Variance
Pretest	21	40	50	90	1430	68,10	11,670	136,190
Valid N (listwise)	21							

The N value (number of pupils) is 21, the mean is 68.10, the standard deviation is 11.670, the range is 40, the minimum is 50, the maximum is 90, and the sum is 1430, according to the findings of the calculations above. The following image displays the student's information and is classified under the Ministry of Education and Culture's (Depdikbud) guidelines:

No	Intervals	Frequency	Percentage (%)	Learning Outcome Category
1	0 – 34	0	0	Very Low
2	35 – 54	3	14,28	Low
3	55 – 64	7	33,33	Currently
4	65 – 84	11	52,38	Tall
5	85 – 100	0	0	Very high
Amount		21	100	

Table 3.1 Level of Mastery of Pretest Material

Given the information in the above image, it can be said that class IV students' learning outcomes in mathematics in the pretest stage using the instrument test fall into one of the following categories: very low 0%, low 14.28%, medium 33.33%, high 52.38%, and dang very high at 0% percentage. Based on the current percentage results, it can be concluded that prior to the implementation of the project-based learning model treatment, students had a comparatively high degree of comprehension of 21st century traits and competencies.

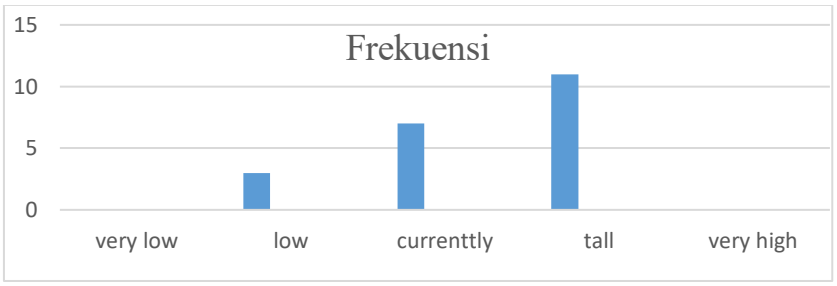
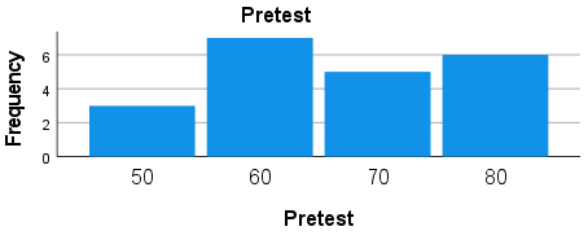


Diagram 3.1 Pretest

The pretest results for students in the low, medium, high, and very high categories are displayed in the above diagram. There is a need for treatment or models that can boost students' enthusiasm for learning because three students still have learning success in the low group and seven students are in the medium category, indicating that students' initial comprehension of the content is still insufficient. The learning model is one appropriate learning model. Project-Based Education.



Histogram 3.1 Pretest

Each value's category can be determined using the histogram. Three pupils received a score of 50, placing them in the low group; seven students received a score of 60, placing them in the medium category; five students received a score of 70, placing them in the high category; and six students received a score of 80, placing them in the high category.

2) Posttest Mathematics Learning Results for Class IV Students at SD Negeri 23 Sela, After Implementing the Project Based Learning

Following therapy, there were changes in the class as measured by the posttest on mathematics learning outcomes during the study. These modifications take the shape of learning outcomes, the data of which are collected following the administration of a posttest. The following data illustrates these changes:

Data on the learning results in mathematics for the fourth-grade students at SD Negeri 23 Sela following the adoption of project-based learning:

Descriptive Statistics

	N	Range	Minimum	Maximum	Sum	Mean	Std. Deviation	Variance
Posttest	21	30	70	100	1840	87,62	8,309	69,048
Valid N (listwise)	21							

The class IV mathematics learning results at SD Negeri 23 Sela are derived from the above computations. Following the implementation of the project-based learning model, the mean value is 87.62, the standard deviation value is 8.309, the variance value is 69.048, the range value is 30. The sum score is 1840, the minimum is 70, and the maximum is 100. Regarding the categories in the Ministry of Education and Culture's (Depdikbud) rules, the following table displays student data:

No	Intervals	Frequency	Percentage (%)	Learning Outcome Category
1	0 – 34	0	0	Very Low
2	35– 54	0	0	Low
3	55 – 64	0	0	Currently
4	65 – 84	8	38,09	Tall
5	85 – 100	13	61,90	Very high
Amount		21	100	

Table 3.2 level of mastery of posttest material

The math learning results of class IV pupils at the posttest stage utilizing the test instrument are classified as very low 0%, low 0%, medium 0%, high 38.09, and very high at a percentage of 61.90%, according to the data in the above table. Considering the current percentage results, it can be concluded that following the implementation of the project-based learning model, students' comprehension of 21st century characters and skills with reference to mathematics learning outcomes is comparatively high.

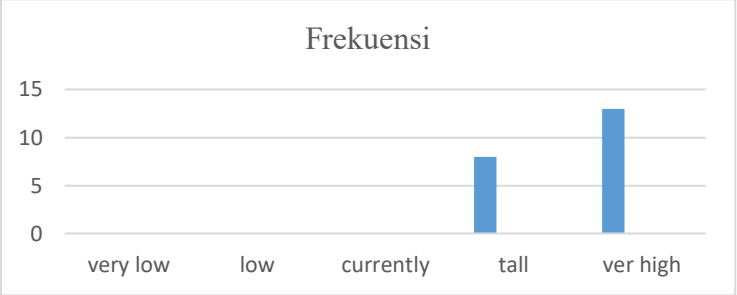
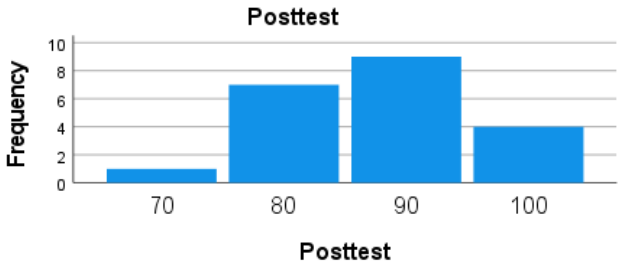


Diagram 3.2 *Posttest*

The students' posttest results, specifically the high and very high categories, are displayed in the diagram above. This indicates that class IV students' learning outcomes in mathematics are rapidly improving when project-based learning is used to help them absorb the topic more quickly and finish the assigned projects or assignments.



Histogram 3.2 *Posttest*

Each value's category can be determined using the histogram. One student received a score of 70 in the high category, seven received an 80 in the high category, nine received a 90 in the very high category, and four received a 100 in the very high category.

Inferential statistics is the method used to test the research hypothesis, which states that "the use of the project based learning has an influence on the character, 21st century skills, and mathematics learning outcomes of class IV students at SD Negeri 23 Sela, Pangkep district." through the t-test.

Therefore, a hypothesis test is conducted, but first an assumption test comprising a homogeneity and normality test is conducted.

a. Normality test

To ascertain whether or not the collected data is regularly distributed, the normality test is utilized. The pretest and posttest results of the student learning outcomes were used to generate the normality test data. The Statistical Package for Social Science (SPSS) version 27 system is used to perform the normality test. If the significance level is greater than 0.05, the data is considered to be regularly distributed. The outcomes of the pretest and posttest data normalcy tests are as follows.

Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	Df	Sig.
Pretest	,211	21	,016	,868	21	,009
Posttest	,232	21	,004	,872	21	,010

The pretest and posttest results are regularly distributed, as the preceding table demonstrates. According to the normality test results, the pretest's p-value was 0.09, and the posttest's was 0.10, or, to put it another way, pretest 0.09>0.05 and posttest 0.10>0.05, meaning that the "p-value (Sig) 0.05." Consequently, it may be said that the pretest and posttest results follow a normal distribution.

b. **Homogeneity test**

To ascertain whether the data from the sample class is homogeneous, the homogeneity test is used. The outcomes of the pretest and posttest will be the data that undergoes homogeneity testing. The homogeneity test was conducted using the Statistics for Social Science (SPSS) version 27 system. The test conditions were that the data was not homogeneous unless the significance value based on mean was greater than 0.05. Here is the information.

Test of Homogeneity of Variance[a]

		Levene Statistic	df1	df2	Sig.
Pretest	Based on Mean	,292	2	17	,751
	Based on Median	,305	2	17	,741
	Based on Median and with adjusted df	,305	2	12,247	,743
	Based on trimmed mean	,331	2	17	,723

The table above shows that the homogeneity test results obtained were 0.741, based on the homogeneity test results it was found that the significance value was 0.741>0.05. So it can be concluded that the value based on mean is normally distributed.

c. **Hypothesis testing**

Two data samples that are connected to one another are tested using the paired sample T-test. The Statistics for Social Science (SPSS) Version 27 system was used to test the pretest and posttest data in order to conduct this analysis. Data samples are tested using the paired sample T-test to look for differences. If the Sig value (two-tailed) is less than 0.05, the data requirements are considered significant. The purpose of this investigation is to ascertain how student learning outcomes differed before and after treatment. The outcomes of the pretest and posttest hypotheses are as follows.

Paired Samples Test

		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference Lower	Upper	t	df	Sig. (2-tailed)
Pair 1	pretest – posttest	-20,952	11,792	2,573	-26,320	-15,585	-8,143	20	,000

Based on the table above, the value of tcount > ttable, the results obtained in the table are -8.143>1.725, indicating that the results of the hypothesis test with a significance value of 0.000<0.05 means that H_0 is rejected and H_1 is accepted, which means there is an average difference between learning outcomes. pretest and posttest, which means there is an influence on the use of the Project based learning, it can be concluded that the hypothesis test is as follows:

Hypothesis H_0: there is no influence of the project based learning on the character, 21st century skills and mathematics learning outcomes of class IV students at SD Negeri 23 Sela.

Hypothesis H_1: There is an influence of the project based learning on the character, 21st century skills and mathematics learning outcomes of class IV students at SD Negeri 23 Sela.

Based on the test results, H_0 is rejected and H_1 is accepted. So, there is an influence of the project based learning on the character, 21st century skills and mathematics learning outcomes of class IV students at SD Negeri 23 Sela, Pangkep Regency.

Discussion

Teachers can use the project-based learning model in learning processes that take students into the real world, where they must solve problems, work together, and apply their knowledge and abilities. Students can investigate new information and actively participate in the creation of projects. In addition, project-based learning fosters critical thinking, problem-solving, communication, and student collaboration.

The average score for students' learning outcomes in mathematics, as determined by the pretest results, was 68.10, with the following categories: low, at 14.28% with a frequency of 3, medium, at 33.33% with a frequency of 7, high, at 52.38% with a frequency of 11, and very high, at 0%. According to the percentage results, students had a comparatively high degree of comprehension of 21st century character and skills prior to the implementation of project-based learning.

Meanwhile, the average score of the posttest results was 87.62, so the character, 21st century skills and mathematics learning outcomes of class IV students after implementing the project based learning had good results compared to before implementing the project based learning. Apart from that, the category percentages are very low 0%, low 0%, medium 0%, high 38.09% with a frequency of 8 and very high 61.90% with a frequency of 13.

Based on the results of inferential statistical analysis using paired sample T-Test, it can be seen that the t value is -8.143 with a frequency of 20, at a significant level of 0.05, t table = 1.725. Therefore, the results of hypothesis testing with a significance test of 0.000>0.05 means that H0 is rejected and H1 is accepted, which means there is an average difference between the pretest and posttest learning results, which means there is an influence of using the project based learning on character, 21st century skills and mathematics learning outcomes.

According to the findings of the observations, the aforementioned analysis can demonstrate how applying project-based learning affects character, 21st century abilities, and mathematical learning outcomes. According to the findings of observations of student development, a number of students engaged in other activities or acted apathetically throughout the lecture at the start of the learning exercise. In addition, only a small percentage of the pupils actively participated in solving the teacher's problems during the first meeting, and the character displayed was inappropriate for the age of the children. But once project-based learning is implemented, students start actively resolving issues to produce a project assigned by the.

One of the most crucial ideas in educational psychology, according to this constructivist approach, is that teachers do more than only impart knowledge to their students. Students need to mentally construct their own knowledge. By allowing students to explore and implement their own ideas, teachers can facilitate the learning process. Students can be given steps by their teachers that lead to a greater level of comprehension, but they must ascend these stairs themselves.

Accordingly, the Project Based Learning learning model is supported by constructivist learning theory because, in the process of learning, students actively contribute to the construction of their own knowledge by seeking out different ideas to create a final product, while the teacher serves as a facilitator and helps students finish completed projects.

Through observations of instructors and students in class IV of SD Negeri 23 Sela, learning outcomes for character, 21st century abilities, and mathematics were created. In order to evaluate students in accordance with a professional learning model, researchers will concentrate on 21st century character and skills in class IV while observing teachers and students. As a result, the findings of the observations

serve as one of the indicators for evaluating the attainment of 21st century character and skills for class IV students. In addition, the findings from observations will serve as the foundation for developing learning interventions.

It can be inferred from the results of observations, descriptive statistical analysis, and inferential statistics that the implementation of Project Based Learning affects the learning outcomes in mathematics, 21st century skills, and character of class IV students at SD Negeri 23 Sela Regency. Pangkep.

4. CONCLUSIONS AND SUGGESTIONS

Conclusion

More detailed conclusions relating to character, 21st century skills and mathematics learning outcomes using the Project Based Learning for fourth grade students at SD Negeri 23 Sela:

1. Based on the data obtained, it can be concluded that in the learning process using the Project Based Learning learning model, it can be seen from the results of observations of teacher and student activities, where indicators of the implementation of teacher and student activities increase after implementing the project based learning learning model, this can be seen in each The meeting experienced an increase from initially getting a score of 12 with a total percentage of 75% to an increase of 14 scores with a total percentage of 87.55% including the very high category.
2. Based on the data obtained, it can be concluded that in general the character values of students can be seen from the results of observations at each meeting which have increased, the first meeting was carried out with a pretest, which initially obtained a score of 8 with a percentage of 66.66% until it experienced an increase at the final meeting obtained a score of 10 with a total percentage of 83.33% including the high category, and at the sixth meeting a posttest was carried out.
3. 3. Based on the data obtained, it can be concluded that in general students' 21st century skills can be seen from the results of observations at each meeting which have increased, the first meeting was carried out with a pretest, which initially got a score of 13 with a percentage of 60% until it experienced an increase at the final meeting to get a score of 18 with a percentage of 90%, which was included in the very high category, and at the sixth meeting a posttest was carried out.
4. Based on the data obtained, it can be concluded that in general the mathematics learning outcomes of class IV students at SD Negeri 23 Sela, to see student learning outcomes, pretest and posttest are used, where the pretest results shows that the percentage of student learning outcomes is low, 14.28% with a frequency of 3, medium category 33.33%, frequency 7, high category 52.38%, frequency 11, while posttest students obtained high category results of 38.09% with a frequency of 8, and very high at a percentage of 61.90% with a frequency of 13.
5. Based on the hypothesis test carried out, it can be concluded that the application of the Project Based Learning learning model has an effect on the character, bada 21 skills and mathematics learning outcomes of class IV students at SD Negeri 23 Sela, after obtaining the results of the hypothesis test with a significance value of 0.000>0.05, meaning H0 is rejected and H1 is accepted, which means there is an average difference between pretest and posttest learning outcomes, which means there is an influence of using the project based learning on character, 21st century skills and mathematics learning outcomes.

Suggestion

Based on findings related to the results of research on the application of the Project Based Learning which influences the character, 21st century skills and mathematics learning outcomes of class IV students at SD Negeri 23 Sela. So several suggestions are put forward as follows:

1. According to this study, in order to enhance learning results, teachers should focus more on their pupils by supporting and advising those who make mistakes with reference to their 21st century character and abilities.
2. In order to determine whether this learning approach can be used to accomplish the desired results, it is hoped that future studies will be able to expand on Project Based Learning by implementing it to additional subjects.

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