

The Influence of the Project-Based Learning (PjBL) Model Based on Differentiated Strategies on Students Spiritual Intelligence

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Abstract: This research was motivated by the inadequate spiritual intelligence of students. This is due to demands and pressure to achieve certain academic targets, thereby ignoring spiritual intelligence; Limited time and resources covering all aspects of student development, so that spiritual intelligence is not a top priority; and shifts in societal and cultural values as a result of modernization. The purpose of the curriculum is to provide guidance for teachers in conveying learning material systematically to students. In the Independent Curriculum which is currently being implemented in many schools, the implementation of learning becomes more flexible. The aim of this research is to describe the influence of the PjBL Model based on differentiated strategies on students' spiritual intelligence. The research method used was Quasi Experiment with a Nonequivalent Pretest-Posttest Only Control Group Design. The research instrument used was a spiritual intelligence questionnaire. The results of the research show that the spiritual intelligence of students taught using the PjBL Model based on differentiated strategies is higher than those taught using conventional learning, where the average spiritual intelligence value of experimental group students is 83.5 and the average spiritual intelligence value control group students was 77.87. Thus, it can be concluded that the PjBL Model based on differentiated strategies has a significant effect on students' spiritual intelligence.

Keywords: Differentiated strategy; PjBL; Spiritual intelligence

Introduction

Curriculum can simply be interpreted as a guide prepared to achieve certain educational goals. The curriculum itself includes a series of subjects, teaching methods and evaluations used. The purpose of the curriculum is to provide guidance for teachers in conveying learning material systematically to students. In the Independent Curriculum which is currently being implemented in many schools, the implementation of learning becomes more flexible. This means that students are given the freedom to explore their interests with the aim of increasing curiosity (Scott-Barrett et al., 2023). Apart from that, the Merdeka Curriculum also emphasizes character building of students, so that the

assessments carried out are not only limited to academic aspects (Zaim & Zakiyah, 2024; Mahyuddin et al., 2024) With an orientation that is not only focused on academic aspects or intellectual intelligence, other aspects are also important to be considered, one of which is the aspect of spiritual intelligence. This is stated in one of the national education goals in Law no. 20 of 2003 concerning the National Education System, namely that national education has a function in developing abilities and forming morals, as well as a dignified national civilization with the aim of making the nation's life intelligent and developing the potential of students to become human beings who believe in and are devoted to God Almighty, have noble character, are healthy,

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knowledgeable, capable, creative, independent, and become democratic and responsible citizens.

As an important dimension in complete human development, spiritual intelligence needs to be developed. According to Skrzypińska (2021), individuals who have high spiritual intelligence can think about various possibilities that occur as a result of actions taken, so that they can avoid things that could harm others and themselves. As for Abdulwahid (2021) stated that spiritual intelligence is the ability possessed by individuals to understand the meaning of life and spiritual values in the form of thoughts and behavior in society, so that they can have flexibility when encountering various problems. Spiritual intelligence has great value in education, both at school and at home, so it will be useful in improving morals (Andriyani, 2023). The importance of cultivating spiritual intelligence is a guideline to make it easier for students to understand the meaning of values in life (Ma & Wang, 2022; Alshebami et al., 2023). According to Charkhabi et al. (2014), spiritual intelligence can be seen with the following indicators, namely Attitude of flexibility; Self-awareness; Facing and exploiting suffering; Facing and transcending fear; Quality of life; Reluctance to cause harm; The tendency to see the interconnectedness of various things; Tendency to ask "why" and "how"; and Ease of working against convention.

Based on the results of observations conducted by researchers in class VIII of SMPN 1 Umbulsari, researchers assessed that student still did not have adequate spiritual intelligence. This can be seen from the results of the spiritual intelligence questionnaire that researchers gave to 32 students, where nineteen (59.37%) students were in the poor category, eight (25%) students were in the sufficient category, and five (15%) .62%) students are in the good category. Based on the results of interviews conducted by researchers with teachers, several reasons that researchers obtained were: Demands and pressure to achieve certain academic targets, thus ignoring spiritual intelligence; Limited time and resources covering all aspects of student development, so that spiritual intelligence is not a top priority; and Shifts in societal and cultural values as a result of modernization, such as the existence of social media which is part of advances in science and technology (IPTEK). A solution must be immediately sought for this condition, considering that education is an appropriate means of developing spiritual intelligence through the internalization of spiritual values in learning (Hambali et al., 2022; Siregar et al., 2022). Apart from that, students can also utilize their spiritual values in their learning (Nashatun & Salam, 2020; Imron et al., 2023).

In connection with the problems above, the current implementation of the Merdeka Curriculum could be an

alternative solution, where the Merdeka Curriculum is expected to be able to develop the Pancasila Student Profile which includes have good character, creativity, mutual cooperation, tolerance in diversity (global diversity), and critical and independent (Fauzan et al., 2023). Aspects of good character are put forward Purnawantocertainly has strong relevance to spiritual intelligence. To support this, of course a learning concept is needed that is able to accommodate the diverse conditions of students. According to Eikeland et al. (2022) and Van Geel et al. (2022), the diversity that occurs in an activity to find out about students and their learning responses based on their diversity is called differentiated learning. As for Strogilos et al. (2023), states that with differentiated learning, students' interests, readiness and learning preferences can be accommodated in learning. According to Aminuriyah et al. (2023), differentiated learning is an effort to adjust students' interests, profiles and readiness during the learning process in class so that students' needs can be met. Differentiated learning is a learning condition in which teachers implement various methods to meet the knowledge, understanding, learning styles and interests of individual students (Cuevas, 2015; Frantz et al., 2017). Even though learning is carried out according to the diversity of each student, differentiated learning is still oriented towards goals that are relevant to learning outcomes.

Apart from differentiated learning, another thing that is characteristic of implementing the Independent Curriculum can be seen from the use of the Project-based Learning (PjBL) Model (Desiana et al., 2022). PjBL is a student-centered learning model, where students are given the freedom to express their thoughts and ideas into a project (Handayani et al., 2023). According to Jalinus et al. (2018), PjBL is contextual learning where students have an active role in problem solving, decision making, researching, presentations, and creating documents. As for Guo et al. (2020), states that PjBL is learning that is oriented through experience and the application of learning concepts to a project that is concrete and meaningful for students. According Melisa et al. (2024), the steps in implementing PjBL can be seen in the figure 1.

Several relevant studies regarding the implementation of PjBL based on differentiated strategies, that PjBL in differentiated learning has an influence on students' learning success in the process aspect of 88%. As for classical, the average value is 91% and is in the good category. That differentiated PjBL based on local wisdom has a positive impact on the development of students' 4C skills (critical thinking, creativity, communication, collaboration). Apart from that, differentiated PjBL based on local wisdom also creates a pleasant learning atmosphere, where students

have the freedom to express their potential according to their interests so that learning becomes more meaningful and motivating. Differentiated PjBL have a positive impact on educators and students. Learning difficulties experienced by students can be accommodated with different guidance facilities and strategies, students also become more enthusiastic in learning, and are free to express their potential according to their interests, thus making learning more meaningful. Of the various relevant studies that the researchers looked for, there was no implementation of PjBL based on differentiated strategies that were used to find its effect on spiritual intelligence, so this could be something new that the researchers offer in this research.

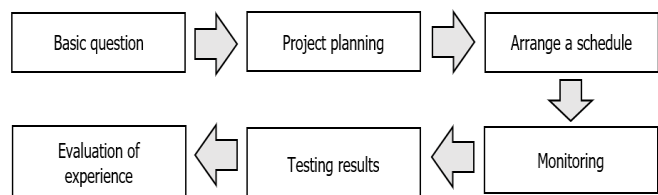


Figure 1. Project based learning (PjBL) steps

Based on the background above, researchers are interested in conducting research with the title "The Influence of the Differentiated Strategy Based Project-based Learning (PjBL) Model on Students' Spiritual Intelligence". The choice of this title was due to the gap that researchers found, where the spiritual intelligence possessed by students was still inadequate, one of which was caused by the shift in values in society and culture

as a form of globalization. With the Independent Curriculum which is characterized by the PjBL Model and differentiated learning that is not only oriented towards academic achievement, researchers hope that problems involving spiritual intelligence can be overcome. Thus, the aim of this research is to describe the influence of the differentiated strategy-based PjBL Model on students' spiritual intelligence.

Method

This researchs uses a Quasi experiment Type. According to Gopalan et al. (2020), experimental research is research that identifies cause-and-effect relationships between independent variables and dependent variables, where the independent variable is controlled in such a way that the influence on the dependent variable can be known. The independent variable in this research is the PjBL Model based on differentiated strategies, while the dependent variable is spiritual intelligence. The following is the experimental design that researchers used.

Table 1. Nonequivalent Pretest-Posttest Control Group Design

Group	Pretest	Treatment	Posttest
Experiment	O ₁	X	O ₂
Control	O ₁	-	O ₂

Table 2. Spiritual Intelligence Questionnaire Grid

Indicator	Statement	5	4	3	2	1
Flexibility attitude	I easily adapt to changes in situations that occur in learning.					
Self-awareness	I regularly self-reflect to understand my feelings and thoughts.					
Confronting and exploiting suffering	I believe that suffering is a natural part of life and has the potential to teach us many things.					
Facing and transcending fear	I don't let fear hinder my steps towards achieving my goals or realizing my dreams.					
Quality of life	I have clear goals and vision for my future.					
Reluctance to cause harm	I understand that my actions may have significant consequences for others, and I strive to minimize such harm.					
The tendency to see the interconnectedness of things	I enjoy observing patterns and connections between different aspects of learning.					
Tendency to ask "why" and "how"	I tend to seek a deep understanding of the reasons behind events in learning.					
Ease of working against convention	I tend to question norms or rules that are considered social conventions.					

Information: 5 = Strongly agree; 4 = Agree; 3 = Neutral; 2 = Disagree; 1 = Strongly disagree

The population of this study was taken from SMPN 1 Umbulsari with research samples of class VIII students. The research was carried out in the odd semester of the 2023/2024 academic year in the subjects of Islamic Religious Education and Character. In

collecting data, researchers used questionnaire techniques. As one way of collecting research data, a questionnaire is the submission of a set of statements in written form to respondents (Hikmawati, 2020). In the context of this research, the researcher provided a

questionnaire instrument to determine students' spiritual intelligence with a grid as in table 2.

Once everything is ready, an experiment is carried out whose data will later be analyzed to test the research hypothesis. Hypothesis testing uses the t-test formula with the aim of finding out the significance of each or partial independent variable on the dependent variables. It should be noted that before the hypothesis test is carried out, a homogeneity test and normality test are first carried out as a form of prerequisite test. The formula for the homogeneity test is:

$$F = \frac{s1^2}{s2^2} \tag{1}$$

Information:

F = F-test value

S12 = Largest variance

S22 = Smallest variance

The normality test formula is =

$$\chi^2 \frac{\sum(f0-fh)^2}{fh} \tag{2}$$

Information:

χ^2 = Chi squared

f_0 = Existing frequency

f_h = Expected frequency

The purpose of carrying out a homogeneity test is to confirm the similarity of the variability of the groups to be compared. The purpose of carrying out a normality test is to investigate whether the assumption of a normal distribution is rejected or accepted.

Result and Discussion

Results

Referring to the results of the research conducted, the following researchers present data on the spiritual intelligence of students from the experimental group (taught using the PjBL Model based on differentiated strategies) and the control group (taught using conventional learning).

Based on Table 3, it can be seen that the highest score for the experimental group students was 89, while the lowest was 75. Apart from that, the mean score was found to be 83.5 with a standard deviation of 4.

Based on Table 4, it can be seen that the highest score for the control group students was 86, while the lowest was 73. Apart from that, the mean score was found to be 77.87 with a standard deviation of 3.95. Guided by the spiritual intelligence values in the experimental group and control group, the results of the

homogeneity test and normality test are then presented as a prerequisite test before testing the hypothesis.

Table 3. Statistical Data on the Posttest Values of the Experimental Group's Spiritual Intelligence

Statistics Posttest Experiment		
N	Valid	32
	Missing	0
Mean		83.51
Std. Error of Mean		.656
Median		87.00
Mode		87.00
Std. Deviation		4.453
Variance		13.78
Skewness		.663
Std. Error of Skewness		.414
Kurtosis		-.078
Std. Error of Kurtosis		.809
Range		15.00
Minimum		75.00
Maximum		89.00
Sum		2791.00
Percentiles	25	84.00
	50	87.00
	75	89.00

Table 4. Statistical Data on the Posttest Values of the Control Group's Spiritual Intelligence

Statistics Posttest Control		
N	Valid	32
	Missing	0
Mean		77.87
Std. Error of Mean		.699
Median		77.00
Mode		73.00
Std. Deviation		3.957
Variance		15.66
Skewness		.629
Std. Error of Skewness		.414
Kurtosis		-.661
Std. Error of Kurtosis		.809
Range		13.00
Minimum		73.00
Maximum		86.00
Sum		2492.00
Percentiles	25	75.00
	50	77.00
	75	81.00

Table 5. Homogeneity Test Spiritual Intelligence

Levene Statistics	df1	df2	Sig.
2.52	1	118	.115

Based on Table 5, it can be seen that the sig. spiritual intelligence of 0.115. Because the sig value. > 0.05, then the sample variance is homogeneous.

Table 6. Normality Test Spiritual Intelligence

Group	Kolmogorov-Smirnov		
	Statistics	df	Sig.
Experiment	.109	60	.073
Control	.110	60	.066

Based on Table 6, it can be seen that the sig. Spiritual intelligence in the experimental group and control group was normally distributed because it was > 0.05. After the prerequisite tests are fulfilled (homogeneous and normally distributed variance), hypothesis testing is carried out with = The differentiated strategy-based PjBL model has no effect on students' spiritual intelligence; and = The differentiated strategy-based PjBL model has a significant effect on students' spiritual intelligence. The results of hypothesis testing can be seen in the table below H_0H_1 .

Table 7. Hypothesis Test Results

Group	N	S_{gab}	α	Etc	t_{count}	t_{table}	Conclusion
Experiment	32	14.58	0.05	54	3.33	2.02	Accept H_1
Control	32						

Based on Table 7 above, it can be seen that the spiritual intelligence of students taught using the differentiated strategy-based PjBL Model is higher than those taught using conventional learning. This is because the spiritual intelligence of the experimental group and control group students has a sig value. < real level (= 0.05) or it can be concluded that it is accepted or rejected αH_1H_0 .

Discussion

The research was carried out in two meetings on the subjects of Islamic Religious Education and Character. In the experimental group of students taught using the PjBL Model based on differentiated strategies, while in the control group of students taught to use conventional learning. The Influence of the Differentiated Strategy-Based PjBL Model on the Spiritual Intelligence of Experimental and Control Group Students Based on the posttest scores, it can be seen that the average spiritual intelligence score of the experimental group students who were taught using the strategy-based PjBL model differentiated more highly than the control group taught using conventional learning (Gheysens et al., 2023; Biazus & Mahtari, 2022). This can be seen from the average spiritual intelligence score of students in the experimental group of 83.50, while the average spiritual intelligence score of students in the control group was 77.87. The highest spiritual intelligence score for students in the experimental group was 89, while the lowest score was 75. The highest spiritual intelligence score for students in the control group was 86, while the

lowest score was 73. The discussion above is relevant to Pangestu et al. (2024), Anggito et al. (2021), Saefullah et al. (2021), which states that differentiated learning in the PjBL Model influences students' critical thinking skills.

The relevance of the research results lies in the implementation of learning the PjBL model is based on differentiated strategies, where in the learning process students are asked to solving problems, making decisions, researching, presenting, and creating documents for planned projects (Pedaste et al., 2015; Almulla, 2020; Darling-Hammond et al., 2020). Of course, carrying out these activities requires adequate critical thinking so that they can be carried out well (Caesar, 2023; Bayu et al., 2022). The differentiation strategy consists of three aspects, namely Content differentiation (Sutinah & Ristiana, 2023), where the material presented by the teacher accommodates various levels of knowledge of students, both those who previously had an understanding of the material and those who previously did not have an understanding of the material; Process differentiation, where during the learning process the instructions given by the teacher refer to the learning style of each student so that each of them can learn to the best of their abilities; and Product differentiation, this is related to the final result of the project that students have planned based on their respective interests (Farida & Setiawan, 2022; Dwivedi et al., 2021). Students who have similar interests are grouped together to complete their projects creatively and innovatively. This project will be assessed by the teacher based on the document report made by each group. This is supported by research (Setiawan et al., 2023), which reveals that students' creativity and innovation can develop upward through implementation differentiated learning in the PjBL Model.

Conclusion

From the results of the research and discussions conducted by the researchers, it can be concluded that the PjBL Model based on differentiated strategies has a significant effect on students' spiritual intelligence. With these conclusions, the researcher provides suggestions for educators or other researchers to implement the differentiated strategy-based PjBL Model so that it can be tested to measure its effect on other skills. By implementing the PjBL Model based on differentiated strategies while supporting the implementation of the Independent Curriculum.

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Author Contributions

Conceptualization, R. A. S.; methodology, E. T.; validation, A. M.; formal analysis, R. A. S.; investigation, E. T.; resources, A. M.; data curation, R. A. S.: writing—original draft preparation, E. T.; writing—review and editing, A. M.: visualization, R. A. S.; All authors have read and agreed to the published version of the manuscript.

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Conflicts of Interest

The authors declare no conflict of interest.

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