

The Influence of Leadership, Adiwiyata Culture, and Project-Based Learning on Students' Environmental Character

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Abstract. This study aims to analyze the effect of school farming project-based IPAS learning, Adiwiyata school culture, and principal leadership on the formation of students' environmental awareness. The study uses a quantitative approach with an ex-post facto design. The research subjects were 27 fourth, fifth, and sixth grade students at Melis Public Elementary School, Trenggalek Regency. Data analysis used multiple linear regression. The results showed that simultaneously, the three variables had a 61.5% effect on students' environmentally conscious character. Partially, the Adiwiyata school culture and principal leadership had a significant positive effect, while project-based IPAS learning did not show a significant partial effect.

Keywords: Environmentally Conscious Character, Adiwiyata School Culture, Principal Leadership, Project-Based Learning

1 Introduction

The development of environmental awareness among elementary school students is a crucial challenge in Indonesian education today. Data from the Ministry of Education, Culture, Research, and Technology shows that environmental awareness among students remains low. At Melis Elementary School in Trenggalek Regency, initial observations indicate a gap between the school's Adiwiyata status and the actual behavior of students.

Character building cannot happen instantly, but requires integrated education quality management. As stated by Trisnantari, Mutohar, and Rindrayani (2019), character-based quality improvement management requires a holistic system, such as that implemented in the Full Day School (FDS) system, where school culture plays a vital role in instilling positive values.

In addition to culture, innovation in learning methods is also essential for instilling character values. Rizqy Ana (2024) emphasizes the importance of using interactive and engaging media and learning methods to increase student engagement. In this context, project-based IPAS learning in schools is expected to be such an interactive tool. In addition, leadership strategies are also key. Dirgantoro (2020) highlights that strategies for building character education require synergy between leadership policies and the implementation of culture in the educational environment.

This study aims to analyze the simultaneous and partial effects of project-based learning, school culture, and principal leadership on student character, filling the gap in previous research by combining these three variables in a single analysis model.

2 Method

This study uses a correlational quantitative approach. The population and sample consisted of all upper grade students (IV, V, VI) of Melis Public Elementary School in the 2025/2026 academic year, totaling 27 students (total sampling). The instrument used was a valid and reliable Likert scale questionnaire. Data analysis was performed using multiple linear regression, t-test, and F-test with the help of SPSS 26.

3 Results And Discussion

The results of the data analysis describe the influence between the variables studied. The data obtained was analyzed using multiple linear regression.

3.1 Multiple Linear Regression Analysis

Based on the data processing results, the resulting regression equation model is presented in Table 1 below:

Table 1. Summary of Multiple Linear Regression Test Results.

Model	Regression Coefficient (β)	Calculated t	Sig.	Description
(Constant)	15,234	4,563	0,000	Significant
Project-Based Learning (X_1)	0,124	0,893	0,378	Tidak Signifikan
Adiwiyata Culture (X_2)	0,456	3,215	0,003	Significant
Principal Leadership (X_3)	0,389	2,859	0,007	Significant

Source: Data processed by SmartPLS 4.0 (2025)

Regression equation:

$$Y = 15.234 + 0.124 X_1 + 0.456 X_2 + 0.389 X_3$$

From Table 1, it can be seen that the Adiwiyata Culture variable (X_2) has the most dominant influence ($\beta=0.456$), followed by Principal Leadership (X_3).

3.2 Visualization of Hypothesis Testing Results

The following is a visualization comparing partial significance (t-test) and simultaneous contribution (R Square):

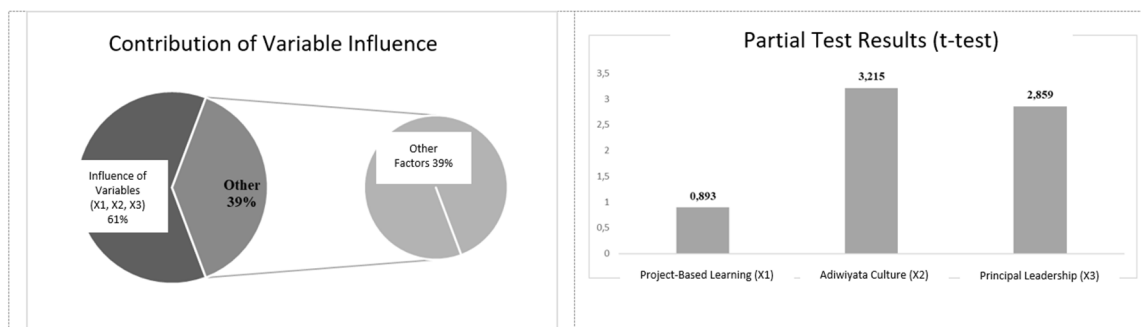


Figure 1. Statistical Data Visualization: (a) Comparison of t-values; (b) Simultaneous Contribution.

3.4 Discussion

The main findings of this study prove that the Adiwiyata School Culture has the most significant impact on shaping environmentally conscious character. This is in line with the research by Mutohar, Jani, and Trisnantari (2020), which found that school effectiveness is greatly influenced by school culture and managerial skills. School culture creates an atmosphere that compels (in a positive sense) students to adapt to environmentally conscious habits, such as disposing of waste and caring for plants, until these habits become ingrained in their character.

The Principal Leadership variable was also proven to be significant. The principal acts as a creator of culture. Effective leadership strategies, as discussed in Dirgantoro (2020), are able to create an educational environment conducive to character growth. The transformative leadership of the principal at SD Negeri Melis was able to motivate the school community to consistently implement the Adiwiyata program.

Interestingly, Project-Based IPAS Learning had no significant effect. Although Rizqy Ana (2024) emphasized the importance of interactive methods, in this case, the limited duration of the project may not have been able to compete with the impact of daily habits (school culture). Additionally, character-based learning designs need to be developed more systematically to integrate with students' daily lives, as suggested in the character learning design study by Trisnantari et al. (2020).

4 Conclusion

It is concluded that: (1) There is a significant simultaneous influence between project-based learning, Adiwiyata culture, and leadership on environmentally conscious character (61.5%); (2) School culture and

principal leadership have a partially significant influence, emphasizing the importance of character-based quality management and school culture strategies; (3) Project-based learning requires greater intensity and a more integrated design to have a significant impact on its own.

Acknowledgements

We would like to express our gratitude to Bhinneka PGRI University and the Trenggalek Regency Education Office for facilitating this research.

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