



Project-Based Learning and Its Contribution to Student Character Development in Secondary Education

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ABSTRACT

Project-based learning has increasingly been recognized as an effective pedagogical approach for fostering student character development in secondary education. This study examines the implementation of project-based learning as a strategy to strengthen student character development within a secondary school context, particularly through structured school management practices. Employing a qualitative descriptive design, data were collected through interviews, observations, document analysis, and questionnaires involving school leaders, teachers, and students. The data were analyzed thematically to identify patterns related to planning, implementation, supervision, and learning outcomes. The findings reveal that project-based learning contributes positively to student character development, especially in dimensions related to collaboration, creativity, independence, and social responsibility. Effective implementation is supported by systematic school management, including structured scheduling, clear role distribution, and alignment between project themes and learning objectives. However, the study also identifies several challenges, such as limited teacher involvement in the planning phase, uneven student engagement, insufficient operational guidelines, and constraints in funding and external supervision. These factors affect the consistency and depth of character development outcomes, particularly in higher-order skills such as critical reasoning. The study contributes to the literature on educational innovation by highlighting the importance of integrative management practices in maximizing the potential of project-based learning for character education. The findings suggest that inclusive planning, clear standard operating procedures, stakeholder involvement, and continuous evaluation are essential to enhance the effectiveness and sustainability of project-based learning initiatives. These insights offer practical implications for school leaders, educators, and policymakers seeking to promote holistic student development through innovative instructional approaches in diverse educational settings.

Keywords: *project-based learning; character education; secondary education; school management; student development*



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INTRODUCTION

The educational landscape in Indonesia has undergone substantial transformation in response to the profound impact of the COVID-19 pandemic. In 2021, the Ministry of Education, Culture, Research, and Technology introduced the Merdeka Curriculum (Independent Curriculum) as a strategic policy to mitigate learning loss and adapt to emerging educational needs (Kemdikbud, 2022). This curriculum, which was implemented across thousands of pioneering schools, is designed to offer flexibility and autonomy to educational institutions, empowering them to select and adapt curriculum models based on their readiness and contextual requirements (Yusup & Lestari, 2023). The Merdeka Curriculum emphasizes learner-centered approaches, project-based learning (PBL), and character education, in line with global educational trends toward 21st-century skills (Fadillah et al., 2022).

One distinctive feature of the Merdeka Curriculum is the Project for Strengthening the Profile of Pancasila Students (P5), which serves as a co-curricular initiative aimed at holistic character development (Dewantara & Pramono, 2023). The P5 project embodies the six dimensions of the Pancasila Student Profile: faith and noble character, global diversity, independence, mutual cooperation, critical reasoning, and creativity (Utami & Ramdani, 2023). By engaging in real-world, project-based activities, students are expected to internalize the values of Pancasila while developing critical soft skills relevant to contemporary society (Sari & et al., 2020).

The implementation of PBL within the P5 framework enables students to address authentic challenges in their communities, fostering not only cognitive growth but also social and emotional learning (Permatasari & Yusuf, 2023). Recent studies have demonstrated that project-based learning enhances student motivation, collaborative skills, problem-solving abilities, and creativity (Sari & et al., 2020). Moreover, the experiential learning aspect of PBL encourages direct engagement with the environment, thereby bridging the gap between classroom learning and societal needs (Kurniawan & et al., 2017).

However, the integration of P5 and PBL into school curricula presents significant challenges. Schools and teachers often encounter difficulties in planning, implementation, and evaluation due to varying levels of readiness and understanding (Indriani & Wulandari, 2023). The need for clear guidelines, effective teacher training, and robust assessment models remains critical to ensure successful adoption of the Merdeka Curriculum and P5 (Hidayati & Anugrah, 2022). Furthermore, as P5 learning outcomes are reported separately from other subjects, alignment with existing assessment systems requires further refinement (Wibowo & Purnamasari, 2022).

Despite these challenges, the Merdeka Curriculum and the P5 initiative represent a pivotal step towards fostering holistic education and character formation among Indonesian students (Utami & Ramdani, 2023). The commitment to empowering schools and facilitating experiential, values-based education reflects a broader vision of preparing learners for the demands of the 21st-century global landscape (Dewantara & Pramono, 2023). Future research and continuous policy support are needed to address implementation barriers and to optimize the impact of the Merdeka Curriculum on student outcomes across Indonesia.



METHODS

This study employed a qualitative descriptive research design to explore the implementation and impact of the Merdeka Curriculum at SMAN 2 Kotaagung, with particular emphasis on the Project for Strengthening the Profile of Pancasila Students (P5). The qualitative approach was chosen to allow for a comprehensive and in-depth examination of phenomena within their real-life context, facilitating an understanding of the complexities and dynamics of curriculum change as experienced by stakeholders at the school level (Hidayati & Anugrah, 2022).

Qualitative descriptive research is recognized for its strength in uncovering patterns of meaning, attitudes, and actions, and is particularly effective in investigating educational innovations, which often involve complex human and organizational dynamics (Nugraheni & Suryani, 2021). This methodological orientation allows researchers to capture the nuances of participants' experiences, as well as the interplay of contextual factors that shape the implementation process (Utami & Ramdani, 2023). In line with established qualitative paradigms, this research prioritizes rich, contextually embedded data collection and interpretation, rather than numerical generalization (Indriani & Wulandari, 2023).

Research Setting and Participants

The research was conducted at SMAN 2 Kotaagung, a public high school that has implemented the Merdeka Curriculum since the 2021/2022 academic year. The focus of this study was on two grade levels—class 10 and class 11—where the P5 projects have been actively integrated into the learning process. The selection of this setting was based on its status as a pioneering institution in the region for curriculum innovation, as well as its diverse subject offerings and active teacher participation in project-based learning initiatives (Kurniawan & et al., 2017).

Participants were selected purposively to ensure that multiple perspectives were represented. The core informants included the principal, the vice principal responsible for curriculum, and five subject teachers representing key domains: compulsory subjects, science electives, social studies electives, language electives, and local content. The purposive sampling technique was utilized based on the criteria of relevance, involvement, and capacity to provide rich information pertinent to the research questions (Wulandari & et al., 2021). This approach aligns with recommendations from recent qualitative education research, which emphasizes purposive selection to capture varied experiences and insights (Hidayati & Anugrah, 2022).

In addition to these in-depth participants, a questionnaire was distributed to all 32 teachers at the school who have served as project mentors, ensuring that data regarding broader teacher perceptions and experiences could be triangulated with more intensive qualitative findings (Permatasari & Yusuf, 2023).

Data Collection Instruments and Procedures

Multiple data collection instruments were deployed to maximize the credibility and validity of the findings through triangulation (Nugraheni & Suryani, 2021). The main instruments included:

1. In-depth Interviews: Semi-structured interviews were conducted with the principal, vice principal, and the five selected teachers. Interview guidelines were developed to cover



- themes such as curriculum implementation, challenges and supports, pedagogical innovation, assessment practices, and the perceived impact of P5 on student character development. All interviews were recorded and transcribed verbatim for analysis (**Sari & et al., 2020**).
2. Observation: Non-participant observation was employed to document the implementation of P5 project activities in both classroom and non-classroom settings. Observational protocols included documentation of instructional strategies, student engagement, teacher-student interactions, and contextual factors affecting implementation (**Kurniawan & et al., 2017**).
 3. Documentation Studies: Researchers collected and reviewed various school documents, such as official curriculum guides, project implementation guidelines, lesson plans, project assessment rubrics, school operational plans, and student project reports. The inclusion of documentation enabled the validation of reported practices and provided concrete examples of curriculum adaptation and project execution (Fadillah et al., 2022).
 4. Questionnaire: A structured questionnaire was distributed to all project mentor teachers, capturing broader perceptions on the implementation, challenges, and outcomes of the P5 project within the Merdeka Curriculum framework (Permatasari & Yusuf, 2023).

Data Management and Analysis

The collected data comprised field notes, observation records, interview transcripts, document archives, questionnaire responses, and visual materials (such as photographs of project activities and samples of student work). Data management followed a systematic approach involving data organization, data cleaning, and the secure storage of digital and physical materials (Utami & Ramdani, 2023).

The data analysis process was inductive and iterative, reflecting the flexible nature of qualitative research. The initial stage involved open coding of interview transcripts and observation notes to identify emerging themes related to curriculum implementation, project-based learning practices, and character education outcomes (Nugraheni & Suryani, 2021). Codes were then grouped into broader categories, such as facilitators and barriers, teacher professional development, student engagement, and assessment practices.

In the next stage, data from different sources were triangulated to corroborate findings and enhance validity. For example, teacher interview statements were compared with documented project reports and classroom observations to ensure consistency and credibility (Indriani & Wulandari, 2023). Thematic patterns were further refined through constant comparison and memo writing, allowing for the development of rich descriptions and explanatory models.

The final stage involved synthesizing findings into narrative accounts, highlighting the interplay between institutional, instructional, and individual factors in shaping the success and challenges of Merdeka Curriculum implementation (Wibowo & Purnamasari, 2022). Researcher reflexivity was maintained throughout the process to recognize potential biases and to ensure that interpretations were grounded in the data.



Ethical Considerations

Ethical principles were strictly observed throughout the research. Informed consent was obtained from all participants, and data confidentiality and anonymity were guaranteed. The research protocol was reviewed and approved by the institutional ethics board, and data were stored securely to prevent unauthorized access (Utami & Ramdani, 2023). Participation was voluntary, and respondents were informed of their right to withdraw at any time.

By adhering to these rigorous qualitative research standards, the study seeks to contribute authentic, credible, and transferable insights into the ongoing transformation of curriculum policy and practice in Indonesian schools.

RESULTS AND DISCUSSION

School Management in P5 Implementation

Effective school management is fundamental in the successful implementation of innovative educational programs, such as the Pancasila Student Profile Strengthening Project (P5). Management in education, drawing from the POAC (Planning, Organizing, Actuating, Controlling) framework, is central to aligning human resources, curriculum, and school culture for achieving holistic student development (Hidayati & Anugrah, 2022). In the context of SMAN 2 Kotaagung, the P5 program represents a comprehensive effort to develop student competencies in line with Pancasila values, requiring robust coordination among teachers, administrators, and stakeholders.

Planning

Planning is the cornerstone of effective school management, especially in programs involving multidisciplinary collaboration and character education. As seen in Table 1, teacher readiness to implement the project is notably high (96%), with strong understanding of project goals (94%) and clarity in project guidelines (84%). However, teacher involvement in planning remains moderate at 46%, indicating an area for improvement in collaborative program design.

Table 1. Planning Aspect Research Findings

Planning Aspect	Description
Teacher readiness to implement the project	96% ready
Teacher understanding of project objectives	94% understand
Teacher involvement in project planning	46% involved
Clarity of project guidebook	84% clear

The high readiness and understanding reflect effective initial socialization and professional development, such as In-House Training (IHT) sessions. However, the moderate involvement in planning highlights the need for broader teacher participation, as collaborative planning has been shown to foster a greater sense of ownership and sustainability in educational innovations (Fadillah et al., 2022).

Organizing and Implementing Activities

The organizing phase in P5 at SMAN 2 Kotaagung utilized a block system, clustering project activities into focused time periods, thereby maximizing attention and collaborative energy. Table 2 summarizes the organizational and implementation strategies.



Table 2. Organizing and Implementing Activities

Organizing and Actuating Aspect	Description
Existence of committee structure	Committee decree (SK)
Organization of teacher mentors	Managed by curriculum team (3 teachers per class)
Organization of students in groups	By students
Time management	Timeline included in proposal
Guidance from mentors	Scheduled according to agreement
Student group observation	Generally accompanied by teachers
Reporting of student observation	Activity report prepared
Blog creation	Each group maintains a blog reporting activities
Exhibition of works	Results presented to students, teachers, and parents both online and offline

The block system allowed students to concentrate on project activities without distractions from other subjects, fostering deeper inquiry and collaboration. Two main project themes were explored: local wisdom and technological engineering, culminating in creative student outputs such as blogs (see example links above). The division of group research objects revealed that collaboration was the primary method (46.9%), followed by curriculum (21.9%), student decision (25%), and teacher decision (6%). This flexible approach supports the development of key 21st-century competencies (Permatasari & Yusuf, 2023).

Despite this, student engagement varied, with 66% demonstrating active participation and 35% remaining inactive during guidance sessions, as depicted in Table 3 and the figure below.

Table 3. Program Implementation Outcomes

Outcome Area	Percentage
Student activeness	66% active
Achievement of objectives	85% achieved
Program implementation	98% implemented

Achievement of Pancasila Student Profile Dimensions

A central aim of the P5 project is to foster the six dimensions of the Pancasila Student Profile. As shown in Figure 1, the dimension of “mutual cooperation” (bergotong royong) recorded the highest achievement (90.6%), illustrating the strength of collaborative project-based learning. Conversely, “critical reasoning” lagged behind at 46.9%, highlighting the need for instructional strategies that better cultivate analytical thinking.

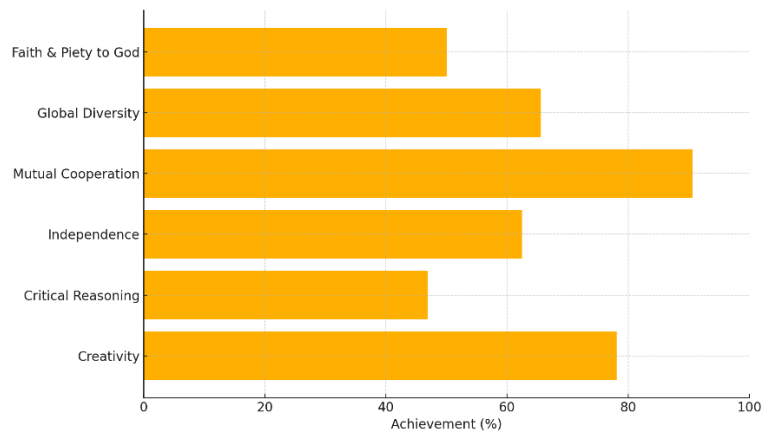


Figure 1. Achievement of the Six Pancasila Student Profile Dimensions

Legend (from top to bottom): Faith and piety to God (50%), Global diversity (65.6%), Mutual cooperation (90.6%), Independence (62.5%), Critical reasoning (46.9%), Creativity (78.1%).

This pattern is consistent with research suggesting that collaborative learning environments boost social competencies, while critical reasoning requires explicit scaffolding (Sari & Sinthiya, 2022).

Supervision (Controlling)

Supervision, both internal and external, is essential for maintaining program quality. While internal supervision by teachers and administrators was routine—e.g., daily reporting and project presentations—external monitoring by school supervisors and committees was limited. Survey results revealed that only 33% of respondents perceived school supervisors as actively involved. This shortfall impedes comprehensive evaluation and reflection, as recommended in effective school governance models (Indriani & Wulandari, 2023).

Problem Findings

The implementation of the Pancasila Student Profile Strengthening Project (P5) at SMAN 2 Kotaagung revealed several noteworthy challenges. One of the primary issues lay in the planning phase, where not all supervising teachers were actively involved from the outset. This limited participation led to a lack of shared understanding and ownership regarding the project's direction, ultimately affecting the coherence and execution of project activities. Recent studies highlight that collaborative and inclusive planning is crucial for the sustainability of educational innovation and the empowerment of teachers as both idea generators and implementers (Puspita Sari & Hidayati, 2023).

Furthermore, during implementation, the research identified that student activeness was suboptimal. A significant proportion of students tended to rely on a handful of their more active peers, while a considerable number remained passive throughout the project activities. This situation was exacerbated by the absence of clear Standard Operating Procedures (SOPs) to guide both students and supervisors, resulting in inconsistent participation and a lack of accountability. The absence of well-structured guidelines can hinder program effectiveness, as highlighted by (Kurniawan & Rahmah, 2022).

Financial constraints also posed a substantial obstacle, limiting the scope and quality of project activities. School funding sources, such as BOS or BOPD, were insufficient to cover all



project needs, making it challenging to organize more impactful or engaging initiatives. The research also noted minimal involvement from school committees and external supervisors in program planning, implementation, and evaluation. School committees are expected to play a key role not only in providing financial support but also in contributing ideas and mobilizing community resources, yet their limited participation led to a less optimal implementation process (Fadillah et al., 2022).

Additionally, evaluation and follow-up activities lacked consistency and depth. There was no systematic, tiered, and sustainable approach for monitoring the development and implementation of P5 across different grade levels. The progression of themes and the achievement of the six Pancasila student profile dimensions were not optimally correlated or reinforced, resulting in a fragmented learning experience for students (Utami & Ramdani, 2023).

Recommendations for Program Improvement

To address the challenges identified, several strategic recommendations are proposed. Firstly, the school should conduct comprehensive annual planning meetings involving all teachers, regardless of their supervisory role, as well as other key stakeholders such as school committees and parents. This participatory approach would foster a greater sense of shared responsibility, ensure a diversity of perspectives, and facilitate more robust and innovative program designs. Teachers' input must be solicited and valued, as their direct experiences in the classroom are essential for refining and contextualizing project plans (Akbar & Silaban, 2025).

Furthermore, it is essential to develop and disseminate clear, written Standard Operating Procedures (SOPs) for P5 project activities. These guidelines should be collaboratively formulated by the school management, teachers, and the learning committee, then socialized to all staff, students, and parents. Clear SOPs will support consistency, enhance accountability, and provide a reference for addressing issues such as student absenteeism or lack of participation (Alnahdi, 2020).

The involvement of school committees and the broader community should be intensified, particularly in funding, planning, and program evaluation. School committees can serve as a bridge between the school and parents, helping to secure additional resources and fostering a culture of shared responsibility for educational success (Avalos, 2016). Optimizing the function of the learning committee is also critical, particularly in designing and socializing project activities and in gathering constructive feedback.

A more structured and regular evaluation system should be established, ensuring that the implementation and outcomes of P5 are systematically reviewed after each cycle. The insights gained should be used for continuous improvement and program development. Furthermore, the school should adopt a comprehensive, staged development plan for P5 across all grade levels to ensure continuity and gradual progression in achieving the six Pancasila student dimensions. Such an approach will enable the school to build on previous experiences and successes, leading to sustained character development among students (Ayu & et al., 2022).



CONCLUSION

This study highlights the significant role of comprehensive school management in the successful implementation of the Pancasila Student Profile Strengthening Project (P5) within the Merdeka Curriculum at SMAN 2 Kotaagung. The findings demonstrate that, while the school and teachers exhibited high levels of readiness and understanding regarding project objectives, challenges remain in the areas of collaborative planning, student engagement, funding, and supervision. The planning phase revealed limited teacher involvement, underscoring the need for more participatory approaches to foster ownership and shared understanding. The organization and implementation of project activities benefitted from a structured block system and diverse thematic exploration, yet student activeness was found to be uneven, partly due to the absence of clear operational guidelines and structured support.

The achievement of the six Pancasila Student Profile dimensions was generally positive, with mutual cooperation and creativity standing out, though critical reasoning lagged and requires further emphasis. External supervision and the involvement of school committees were identified as areas needing strengthening to ensure comprehensive program support and effective evaluation. Funding constraints also hindered the optimal execution of project activities, highlighting the importance of mobilizing broader community resources and school stakeholders.

Based on these findings, it is recommended that schools adopt more inclusive and collaborative planning processes, develop clear standard operating procedures, intensify the involvement of school committees and the community, and implement systematic, ongoing evaluation and follow-up mechanisms. By addressing these aspects, schools can enhance the effectiveness, sustainability, and impact of P5, ensuring that students not only internalize Pancasila values but also develop the competencies required to thrive in the 21st century. Future research should continue to explore strategies for optimizing the implementation of P5 and similar character education initiatives across diverse educational contexts (Utami & Ramdani, 2023; Fadillah et al., 2022; Kurniawan & Rahmah, 2022).

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