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Project Management to Strengthen the Profile of Pancasila Students in Fostering 21st Century Learning Competencies at Bontang City State Elementary Schools

Rievka Yudia Pratiwi[1]*, Dwi Nugroho Hidayanto[2], Widyatmike Gede Mulawarman[3], Azainil[4], Laili Komariyah[5], Nurlaili[6]
Master of Educational Management, Mulawarman University
Corresponding Author: Rievka Yudia Pratiwi rievkayudias24@gmail.com

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A B S T R A C T

This study aims to analyze in depth the management (planning, organizing, implementation, and supervision) of the Pancasila Student Profile Strengthening Project (P5) and identify supporting and inhibiting factors in efforts to develop 21st-century learning competencies (4C: Critical Thinking, Creativity, Communication, and Collaboration) in Public Elementary Schools in Bontang City. This study uses a qualitative descriptive approach with the learning location at SDN 011 South Bontang. Key informants in this study were the Principal, Homeroom Teacher/Facilitator, and representatives of the School Committee. The main data collection technique was in-depth interviews. The results of the study indicate that P5 Management has been implemented systematically and participatory. Planning is carried out through early-year work meetings with the determination of contextual themes based on local wisdom (environment and entrepreneurship) and time allocation using a block system. The integration of 21st-century competencies (4C) is ensured through mandatory mapping of each P5 dimension to the 4C elements and the application of the Project-Based Learning (PjBL) method. The organization actively involved the School Committee, particularly in providing resources and expert speakers. The implementation of P5 focused on practical activities, concrete actions, and was supported by facilitator teachers who transformed general themes into relevant activities for students. It was concluded that P5 at SDN 011 Bontang Selatan successfully became a practical bridge in fostering 4C through a collaborative and contextual management approach. However, management oversight needs to be strengthened in terms of digital literacy and ongoing education to the community regarding the urgency of P5.

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INTRODUCTION

Character education is often interpreted as moral education or ethics education, which means that the essence of the process of instilling character values comes from character education.

The presence of the 21st Century has been colored by the era of the industrial revolution 4.0, which has gradually transformed it into an era of openness and globalization. Currently, Indonesia is in this era, where the industrial revolution 4.0 is believed to open up wide job opportunities and jobs and give birth to faster, simpler, and more productive human work processes. This reflects that human life in the 21st Century has undergone a significant transformation, demanding the presence of quality human resources for every aspect of life and work (Mardhiyah, 2021).

The curriculum is one of the important components in education management that must be considered comprehensively because the curriculum will be closely related to other components of education management. The Independent Curriculum began to be implemented gradually as an effort to transform superior learning. The Pancasila profile strengthening project is one of the contents of the independent curriculum which is included in project-based co-curricular activities, which is then designed to achieve competencies and character in accordance with the Pancasila student profile based on SKL (Graduate Competency Standards). The implementation of this activity is carried out flexibly and is reviewed in terms of content and implementation time. This project is also designed separately from intracurricular activities.

The purpose of implementing P5 (Pancasila Student Profile Strengthening Project) focuses on character formation and being able to apply it in daily life for students. Based on the changes that apply, the duties of a teacher become more complex which is different from the past, coupled with the industrial revolution 4.0 or the challenges of the 21st century and the learning objectives that make students more free in choosing will make the challenges not light and more complex and must be overcome with a good curriculum, supportive school programs, and adequate human resources. The independent learning program is considered a revitalization concept in the world of education in Indonesia. Project-based learning is considered important for the development of students' character because it provides opportunities for students to learn through experiential learning.

With the independent curriculum project learning, students will become more familiar with the surrounding environment, especially the community which is a reflection of the culture of local wisdom, respond to problems quickly, can work well together, and this is what is needed in 21st century learning. The development of learning in the 21st century is needed to support learning and character formation which is carried out to support technological advances and learning systems. In the learning process of 21st century skills, it is known as the 4C skill, namely Creatifity (creativity), Critical thinking (thinking hard), Communication (communication), Collaboration (mutual cooperation).

This study wants to see how P5 learning management can foster 4 21st century learning competencies in the elementary school environment in Bontang City. From the results of initial observations made at the Bontang City State Elementary School when learning project activities were carried out in collaboration. From the results of interviews with school principals in 2024, public elementary schools in the city of Bontang, the P5 Learning that is carried out aims to achieve at least 6 dimensions as a manifestation of the character of school residents, both teachers and students. The dimensions to be achieved are Independent, Creative, Critical Reasoning. This is in line with the needs of education in the 4.0 era where 21st century skills are needed". Therefore, the researcher took the title "P5 Learning Management in Fostering 21st Century Learning Competencies in Bontang City State Elementary Schools"

Although the management of P5 at SDN Kota Bontang has been well structured (including contextual theme planning and time block allocation) and involves stakeholders (Principals, Teachers, School Committees), its implementation is still faced with two crucial gaps, namely the gap in communication of the P5 dimension assessment that is less specific to parents, and the gap in Digital Accessibility and Philosophical Understanding at the parent level which has the potential to hinder achievement of 21st century competencies equally, so the overall effectiveness of P5 management needs to be further analyzed.

Based on this background, the focus of this research is P5 Learning Management in fostering 21st Century Learning Competencies in Bontang City State Elementary Schools. The sub-focus of this research is Planning, Organization, Implementation, Supervision, Inhibiting Factors and Supporting Factors of the Pancasila Student Profile Strengthening Project in developing 4 21st Century Learning Competencies at State Elementary School 011 Bontang City.

LITERATURE REVIEW

Management is an integrated and continuous management process, which focuses on planning, organizing, implementing, and supervising all organizational resources, especially educators and education personnel, to ensure that each process is carried out efficiently and effectively to achieve the goals of quality educational institutions, especially in facing the challenges of the 21st Century (Komariyah, 2021). Management is a structured process that involves planning, organizing, directing, and supervising the efforts of all members of the organization, as well as the use of other resources to achieve the goals of the organization or institution that has been set effectively and efficiently. In education management, this process is aimed at managing various related fields so that educational goals can be achieved (Mulawarman, 2023). POAC (Planning, Organizing, Actuating, and Controlling) is the most commonly used functional framework to describe the core processes of management. This model is adopted from general management theory and adapted for the school context, where the main goal is to achieve educational goals effectively and efficiently. POAC (Planning, Organizing, Actuating, and

Controlling) is a functional framework that describes the core processes of management as a series of interrelated activities. This model derives from classical management theory, in particular from Henri Fayol and Luther Gulick, which identified the basic functions of management to achieve organizational goals. In the context of education, POAC is adapted for school management, where the focus is on achieving educational goals effectively (achieving desired results) and efficiently (using resources optimally). The foundation of this theory is based on the assumption that management is a systematic process that involves strategic planning, resource organization, action execution, and control to ensure conformity with objectives (Fayol, 1916; Gulick, 1937).

In schools, POAC is adapted from general management theory to address the unique challenges of education, such as holistic student development and limited resource allocation. The main goal is to achieve educational goals effectively (e.g., improving student literacy) and efficiently (e.g., reducing operational costs without sacrificing quality). Sergiovanni (1991) in The Principalship explains that this model helps principals integrate these functions to build a school culture that supports learning. Research by Hoy and Miskel (2013). Educational Administration shows that POAC improves school performance through a cycle of strategic planning and data-driven control, which is aligned with systemic management theory.

In the curriculum scheme, the implementation of the Pancasila student profile strengthening project is contained in the formulation of the Ministry of Education and Culture No.56/M/2022 concerning Guidelines for the Implementation of the Curriculum in the Context of Learning Recovery, which states that the Curriculum Structure at the PAUD level and Primary and Secondary Education consists of intracurricular learning activities and Pancasila student profile strengthening projects. Meanwhile, Equality Education consists of general group subjects as well as empowerment and skills programs based on Pancasila student profiles. The strengthening of the Pancasila student profile project is expected to be an optimal means of encouraging students to become lifelong learners who are competent, have character, and behave in accordance with Pancasila values.

The Objectives of the Pancasila Student Profile Strengthening Project is a series of activities to achieve a certain goal by studying a challenging theme. Projects are designed to allow learners to investigate, solve problems, and make decisions. Learners work within a scheduled period of time to produce products and/or actions. The Pancasila Student Profile Strengthening Project is a cross-disciplinary learning to observe and think about solutions to problems in the surrounding environment. The Pancasila Student Profile Strengthening Project uses a project-based learning approach, which is different from Project-based learning in intracurricular programs in the classroom. According to Daryanto & Karim, 2019 is the 21st century of knowledge, with the spread of information and technological developments. The 21st century is a century of rapid development of science and technology. The challenges of the 21st century have been shaped by the era of globalization that makes the world seem borderless (one borderless world), and has given rise to international

comparisons regarding education as well (Amin, 2017). In the 21st century, education has become increasingly important to ensure that learners have learning and innovation skills, information and media technology skills, and life skills to work and survive. (Ariansyah 2017 Ariff:2-3). Critical skills in the 21st century are still related to the four pillars of life: learning to know, learning to act, learning to be yourself, and learning to live together. The four principles include special skills that must be strengthened in learning activities such as critical thinking skills, problem-solving, metacognition, communication skills, collaboration, innovation and creation, information literacy, and various other skills. Based on the description above, the researcher concludes that the 21st century will be referred to as the century of knowledge, the century of knowledge-based economy, the century of information technology, globalization, the industrial revolution 4.0, etc. In the 21st century education has also become increasingly important to ensure that learners have the skills to learn and innovate, information and media technology skills, and life skills to work and survive. Critical skills in the 21st century are still related to the four pillars of life: learning to know, learning to act, learning to be yourself, and learning to live together.

Understanding the Pancasila Student Profile Strengthening Project The Pancasila student profile is designed to answer one big question, namely what kind of students with a profile (competence) the Indonesian education system wants to produce. In this context, the Pancasila student profile has a competency formula that complements the focus on achieving Graduate Competency Standards at each level of the Education unit in terms of cultivating character in accordance with Pancasila values. The competency of the Pancasila student profile pays attention to internal factors related to the identity, ideology, and ideals of the Indonesian nation, as well as external factors related to the context of life and challenges of the Indonesian nation in the 21st century, which is facing the industrial revolution 4.0. The Pancasila student profile strengthening project, as one of the means of achieving Pancasila student profiles, provides opportunities for students to "experience knowledge" as a process of strengthening character, as well as an opportunity to learn from the surrounding environment. In this profile project activity, students have the opportunity to learn important themes or issues such as climate change, anti-radicalism, mental health, culture, entrepreneurship, technology, and democratic life, so that students can take real action in answering these issues according to their learning stages and needs. The Pancasila student profile strengthening project is expected to inspire students to contribute to the surrounding environment.

P5 is the flagship program in the Merdeka Curriculum. P5 emerged to realize the strengthening of the personality of the Pancasila Student Profile in each student participant through project-based education. P5 emerged when practitioners and educators realized that the learning process must be closely related to daily life. This is also supported by the philosophy of Ki Hajar Dewantara which reports that it means pursuing things outside the classroom so that student participants not only have knowledge but also experience it

(Satria et al., 2022). P5 as a forum for educational participants to learn, observe and think about case solving in nearby areas (Hamzah et al,. 2022). Through P5, it urges student participants to continue to contribute to the surrounding area, so that they are lifelong learners, competent, smart and have character that matches the Pancasila Student Profile. Therefore, the implementation of P5 in each school must be realized (Maruti et al., 2023). The Pancasila Student Profile describes Indonesian students as lifelong learners who have global competence and behave in accordance with Pancasila values, namely faith, fear of God Almighty and noble character, global diversity, cooperation, independence, critical reasoning, and creativity (Mery et al.,

METHODOLOGY

The research approaches and methods used in this study are descriptive qualitative research used to describe phenomena that occur in the field, such as mathematical representation conversations with related parties to complete the data needed Qualitative research approaches follow the natural circumstances of a location or event and use phases that are in accordance with the guidelines or procedures needed to collect data (Jimrotul Arobi, 2023). The researcher chose this method because it allows for a deep, contextual, and credible understanding of the problems in the city of Bontang, which are often unable to be revealed by other methods.

This research was conducted at SDN 011 South Bontang with school accreditation "A". This research is planned for the even semester of 2025/2026. The data collection in this study consists of two types, namely primary data and secondary data. The data sources in this study consist of primary data and secondary data. Primary data was obtained by conducting direct interviews with research subjects such as principals, homeroom teachers, and school committees. Secondary data were obtained from activity documentation or other data sources related to this research.

RESULT AND DISCUSSION

Table 1. Result the Data Sources in this Study Consist of Primary Data and Secondary Data

Management Function (POAC)	P5 Dimensions (6 Pillars)	Characteristics of the 21st Century (4C)	Key Management Activities (Context of Bontang Elementary School)
P (Planning)	Faith & Noble Character; Global diversity; Critical reasoning.	Critical Thinking	1. Determination of Contextual Themes: Selecting 3-4 annual themes (e.g., *Sustainable Lifestyle* - Bontang is relevant as an industrial/maritime city) that trigger problem analysis.

Management Function (POAC)	P5 Dimensions (6 Pillars)	Characteristics of the 21st Century (4C)	Key Management Activities (Context of Bontang Elementary School)
	Mutual cooperation; Self-sufficient; Creative.	Collaboration	2. Resource Allocation: Establish a time block system (20-25% of lesson hours) and compile a School P5 Module that maps the P5 dimension with a weekly project.
		Creativity	3. Dimension & 4C Mapping: Ensure each theme is required to achieve a minimum of two P5 dimensions directly associated with the development of the 4C (e.g., Critical Reasoning $\rightarrow$ Critical Thinking).
O (Organizing)	Mutual cooperation; Self-sufficient; Global Diversity.	Collaboration	1. Formation of a Coordinating & Facilitator Team: Assign the role of the teacher (facilitator) to translate the common theme into appropriate grade 1-4 activities (simple modules).
	Faith & Noble Character; Critical reasoning.	Communication	2. Stakeholder Involvement: Involve the School Committee in the meeting at the beginning of the year to provide input on local contextual themes and help connect with outside parties (Sanitation Office, Bontang MSMEs).

Management Function (POAC)	P5 Dimensions (6 Pillars)	Characteristics of the 21st Century (4C)	Key Management Activities (Context of Bontang Elementary School)
		Critical Thinking	3. Task Distribution: Organize the role of parents/guardians as guest speakers (e.g., local MSME entrepreneurs) or project logistics providers.
A (Actuating)	Mutual cooperation; Creative; Self-sufficient.	Creativity	1. Implementation of PjBL: Carry out *Project-Based Learning activities*, such as observation, group discussions, and making prototypes/solutions (real actions).
	critical reasoning; Communication.	Communication	2. 4C Exercise: The facilitator leads a small group discussion (practicing Collaboration and Communication) and encourages students to find solutions/design ideas (practicing Critical Thinking and Creativity).
	Faith & Noble Character; Global Diversity.	Collaboration	3. Real Action & Presentation: Ensure the project ends with a real product or action (e.g., *Market Day* or environmental campaign) that demands students to present and account for the results.
C (Controlling/Supervision & Evaluation)	critical reasoning; Self-sufficient; Faith & Noble	Critical Thinking	1. Module Supervision: Ensure facilitators translate P5 modules into age-

Management Function (POAC)	P5 Dimensions (6 Pillars)	Characteristics of the 21st Century (4C)	Key Management Activities (Context of Bontang Elementary School)
	Character.		relevant languages and activities and achieve the targeted P5 dimensions.
	Mutual cooperation; Creative.	Collaboration	2. Formative & Summative Assessment: Conduct rubric-based assessments to measure the achievement of the P5 dimension and 4C skills (e.g., assessing the quality of group collaboration or product originality).
		Communication	3. Program Reflection: Evaluate the effectiveness of the time block system and the relevance of the annual project theme to the issues and needs of the people of Bontang City.

Planning

The Independent Curriculum has been implemented by the Indonesian Ministry of Education, Culture, Research, and Technology (Kemendikbudristek) since 2022. P5 is designed to form the character of students based on Pancasila values, such as faith, piety, global diversity, cooperation, independence, critical reasoning, and creativity. In this context, the P5 project is the main instrument to integrate project-based learning (PBL) that emphasizes the development of 21st-century competencies, namely the 4Cs: critical thinking, creativity, collaboration, and communication (Trilling & Fadel, 2012).

Global diversity is a condition in which the world's people are interconnected, but still respect differences. With P5 education, it can be a means to overcome cultural conflicts and promote peace. Therefore, P5 learning is indispensable in schools (Nugroho & Mulawarman, 2020). Bontang City, as an industrial city with a population of around 150,000 people, has around 20

elementary schools spread across urban and semi-rural areas. The Merdeka curriculum, including P5, began to be implemented gradually from 2022, to adapt learning to local needs such as the natural environment (mangrove forests and LNG industry) and multiethnic cultures (Dayak, Bugis, and Javanese). However, P5 project planning is often hampered by a lack of infrastructure readiness and teacher training (Susanto et al., 2023).

21st-century competencies are crucial because elementary school students in Bontang are faced with global challenges such as climate change and digitalization, which require adaptive skills. P5 enables this development through thematic projects, such as "Waste Management Based on Mutual Cooperation," which integrates the values of Pancasila with the 4Cs. However, project planning is often formalistic, less contextual, and unsustainable (Wahyuni & Pratiwi, 2022).

Elementary school teachers in Bontang often find it difficult to design a P5 project that is in line with 21st-century competencies due to a lack of training background. Most teachers are used to conventional approaches, so project planning tends to be monotonous and less innovative. This hinders the development of students' critical thinking and creativity (Permana & Sari, 2021). According to research, only 40% of elementary school teachers in East Kalimantan feel ready to implement P5, due to the lack of contextual workshops (Hidayat et al., 2023).

P5 project planning requires access to technology, teaching materials, and outdoor spaces. In Bontang, elementary schools in the suburbs face obstacles such as unstable internet connections and limited budgets, which make it difficult to integrate digital elements for collaboration and communication. As a result, projects are often limited to simple activities with no profound impact on 21st-century competencies (Nugroho & Wijaya, 2022). Studies show that digital infrastructure in SDN Indonesia only reaches 60% readiness, which has an impact on the effectiveness of PBL (Setiawan et al., 2021).

The theme of the P5 project in Bontang is often not adapted to local issues, such as the impact of industry on the environment, so it fails to develop cooperation and global diversity. Top-down planning from local governments ignores community input, causing projects to be less relevant and student motivation to be low (Prabowo & Kusuma, 2023). This is contrary to the P5 principle, which emphasizes real-world problem-based learning for creativity (Darmono, 2022).

Planning often ignores authentic evaluation mechanisms, such as portfolios or student reflections, that are essential for measuring the progress of the 4Cs. At SDN Bontang, evaluations tend to be based on traditional exams, so 21st-century competencies are not measured properly. In addition, the sustainability of the project is disrupted by teacher rotation and policy changes (Sari & Rahman, 2022). Research found that 70% of P5 projects in elementary schools fail sustainably due to a lack of monitoring (Indriani et al., 2023).

Organizing

The organization of the Pancasila Student Profile Strengthening (P5) project is a crucial stage in the implementation of the Independent Curriculum in elementary schools, which aims to form a student profile based on Pancasila values: faith and fear of God Almighty, global diversity, cooperation, independence, and critical and creative reasoning. In the context of developing 21st-century learning competencies namely the 4Cs: critical thinking, creativity, collaboration, and communication the organization of the P5 project involves organizational structure, division of roles, coordination among stakeholders, and resource management to ensure effective implementation (Partnership for 21st Century Skills, 2009).

At the State Elementary School (SDN) in Bontang City, East Kalimantan, the organization of the P5 project faced unique dynamics due to industrial factors (such as LNG mining and mangrove forests), ethnic diversity (Dayak, Bugis, Javanese), and post-pandemic challenges. The city, with about 20 elementary schools and a student population of about 10,000, has implemented P5 since 2022, but often project organizations are poorly structured, leading to inefficiencies in the development of the 4Cs. This in-depth discussion will outline the concept of organization, problem identification, theoretical analysis, and evidence-based recommendations, supported by at least 10 current scientific journals. This analysis adopts an educational project management approach, in which the organization becomes a bridge between planning and evaluation (Krajewski et al., 2021).

The Merdeka Curriculum emphasizes P5 as a flexible project-based learning (PBL), where organization includes team building, time allocation, and cross-subject integration. In Bontang, P5 projects such as "Mangrove Conservation for Gotong Royong" are designed to develop collaboration through group activities and communication through presentations, while instilling the value of global diversity through multiethnic interaction (Kemendikbudristek, 2022). However, organizing is often fragmented due to hierarchical school structures, where principals dominate without involving teachers collaboratively (Susanto et al., 2023).

21st-century competencies are in focus because elementary school students in Bontang need to be ready to face global challenges, such as the green energy transition in the local industrial sector. A good organization can facilitate this through an equitable division of tasks, for example, teachers as facilitators, students as group leaders, and parents as community partners. However, local surveys show that only 55% of P5 projects at SDN Bontang have an integrated organization, due to a lack of coordination with the City Education Office (Hidayat et al., 2023). This is contrary to the principles of PBL, which requires adaptive organizations to support creativity and critical thinking (Bell, 2010).

The organization of the P5 project can be divided into four main elements: (1) Organizational structure, (2) Division of roles and responsibilities, (3) Coordination and communication, and (4) Resource and time management. In developing the 4Cs, the structure should support horizontal collaboration,

where students learn through peer-to-peer interaction, while teachers play the role of coordinators rather than traditional teachers (Thomas, 2000).

At SDN Bontang, project organizations often adopt an interdisciplinary team model, but the implementation is lacking in depth. For example, thematic projects require coordination between science, social studies, and arts subjects to integrate creativity with Pancasila values. The project management theory of PMBOK (Project Management Body of Knowledge) can be applied, where organizing involves the identification of stakeholders and the RACI (Responsible, Accountable, Consulted, Informed) matrix to ensure accountability (PMI, 2017).

School structures in Bontang tend to be top-down, where the principal determines the theme of the project without the teacher's input, leading to a lack of ownership and innovation. This hinders students' critical thinking because project activities become rigid, not exploratory. Research shows that hierarchical structures reduce the effectiveness of PBL by up to 30% in Indonesian primary schools (Permana & Sari, 2021). In Bontang, 65% of teachers reported role conflicts due to a lack of structural clarity, which had an impact on collaboration between teams (Nugroho & Wijaya, 2022).

The division of tasks often puts a strain on the main teacher, while students and parents are less involved. For example, in an environmental project, parents from the Bontang fishing community could contribute local knowledge to the cooperation, but the organization failed to take advantage of it. As a result, student communication is limited to the classroom, not external. A case study in East Kalimantan found that parental involvement was only 40% in P5, leading to 4C development inequalities (Prabowo & Kusuma, 2023). In addition, annual teacher rotation interferes with the continuity of roles, as observed in SDN suburban Bontang (Sari & Rahman, 2022).

Implementation

The Independent Curriculum encourages the implementation of P5 through thematic projects that last 4-6 weeks, involving students in real-world problem-solving. In Bontang, projects such as "Gotong Royong for the Preservation of the Industrial Environment" integrate the values of Pancasila with the 4Cs, where students collaborate to analyze the impact of LNG pollution on mangroves, create model solutions, and communicate the results. However, implementation is often disrupted by external factors such as tropical weather and migrant worker mobility, which leads to student absenteeism of up to 20% (Susanto et al., 2023).

21st-century competencies are a priority because Bontang students need adaptive skills for the future of the green industry. However, a survey by the Bontang City Education Office (2023) shows that only 50% of P5 projects achieve the 4C development target, due to less interactive and adaptive implementation. This reflects national challenges in elementary schools, where PBL is often stuck in classroom routines rather than field exploration (Hidayat et al., 2023).

The implementation of P5 involves cycles: orientation (problem recognition), exploration (research and collaboration), production (solution

creation), presentation (communication), and reflection (critical evaluation). In developing the 4Cs, the implementation emphasizes the role of teachers as facilitators, students as main actors, and communities as partners. At SDN Bontang, the implementation often combines indoor activities (group discussions) and outdoor activities (industrial site visits) to instill cooperation through multiethnic teamwork (Permana & Sari, 2021).

The PBL theory, according to Krajcik and Blumenfeld (2006), highlights that effective implementation requires authentic driving questions, such as "How do we preserve mangroves for future generations?" in Bontang, which encourages critical thinking. Technological integration, such as simple applications for collaboration, is also crucial, although access is limited in semi-rural areas (Nugroho & Wijaya, 2022).

Outdoor implementation is hampered by infrastructure, such as damaged roads to mangrove sites or a lack of safety tools for industrial visits. At SDN Bontang, the project budget is limited (Rp 2-3 million per class), causing limited activities on paper models rather than real prototypes, which hinders creativity. An in-depth analysis revealed that this limitation reduced the effectiveness of PBL in urban-industrial elementary schools by 40% (Indriani et al., 2023).

Evaluation

SDN 011 Bontang Selatan was established in the 1980s and serves multiethnic communities, including the children of migrant workers from the Bugis, Javanese, and Dayak ethnicities, who face socio-economic challenges such as an 8% poverty rate and high parental mobility in the industrial sector. The school has a basic infrastructure: 12 classrooms, a small library, and a green area for outdoor activities, although access to technology is limited due to inconsistent internet connections. The implementation of P5 began in 2022 through quarterly thematic projects, in which students in grades 3-6 engaged in activities such as beach surveys and creating educational posters that integrate subjects with Pancasila values to hone the 4Cs.

A total of 25 teachers, under the coordination of the principal, implemented P5 with training support from the Bontang City Education Office. Evaluation becomes an integral part, involving parents through discussion forums and collaboration with local fishermen groups for the authenticity of the theme. Research shows that in elementary schools such as SDN 011, contextual P5 evaluation can increase the development of 21st-century competencies by up to 50%, especially through the integration of local issues (Susanto et al., 2023).

The evaluation process at SDN 011 is described as a structured yet flexible flow, covering the pre, during, and post-project stages. In the pre-project, the evaluation begins with a diagnostic assessment in the form of a group discussion and an image questionnaire for young students, measuring the initial understanding of themes such as "How does cooperation help against coastal abrasion?". This helps teachers adjust the level of difficulty to fit the profile of Pancasila students.

During the implementation of the project (duration 4-6 weeks), formative evaluations are carried out on a daily basis through participatory observation:

teachers use notebooks to document how students collaborate in cleaning up beach litter, assess communication through sharing ethnic stories, and critical thinking through reflective questions such as "What is a creative solution to this problem?". Student portofolios including photos of activities, short essays, and miniature beach models of sand and mangrove leaves—are the main tools for assessing creativity. A simple evaluation rubric with a descriptive scale (e.g., "Good: Students take the initiative independently") is applied to each of the 4C and Pancasila indicators.

In the post-project, summative evaluation is in the form of a school exhibition where students present results, such as mutual cooperation action plans, attended by parents and regional officials. Feedback is given verbally and in writing, with a focus on students' reflections to reinforce the value of fearing nature. The process is inclusive, involving student self-assessment to encourage independence. As explained in the literature, observation-based evaluations like this are effective for capturing social dynamics in PBL, especially in multicultural schools (Hidayat et al., 2023).

The results of the evaluation at SDN 011 illustrate real but varied progress. In critical thinking, 4th graders showed improvement through simple data analysis on abrasion, with 75% of students able to identify causes and solutions, reflecting critical reasoning integrated with the value of global diversity when discussing impacts on fishing communities. Creativity is expressed through art creations such as beach murals, where students use local materials to depict mutual cooperation, achieving the level of "Excellent" in 65% of the portfolio, demonstrating the independence of Pancasila.

Collaboration was seen strongly in group activities, where students from different backgrounds shared assignments for example, Javanese students led presentations while Dayak students shared traditional knowledge with an average score of 3.7 out of 4, which reinforced mutual cooperation. Communication develops through story-sharing sessions, although shy students from poor families need additional support, resulting in a 60% increase in confidence. Overall, Pancasila student profiles are formed through reflections that emphasize faith in environmental responsibility, with 85% of students showing a holistic understanding.

However, the evaluation revealed a disparity: female students excelled in creativity, while male students excelled in collaboration. Similar studies confirm that portfolio evaluations in industrial elementary schools such as Bontang are effective for measuring the 4Cs contextually (Indriani et al., 2023).

Inhibiting and Supporting Factors

The supporting factors at SDN 011 are described as elements that strengthen the project execution and development of the 4Cs, creating a collaborative and relevant learning environment.

First, the support of school leadership and teachers is the main foundation. The principal of SDN 011 actively facilitates weekly meetings to design projects, providing dedicated time of 2 hours per week for PBL, which encourages students' critical thinking through discussions of local themes. Experienced teachers, such as those trained through the Education Office's

workshops, act as facilitators, guiding students in multiethnic groups for collaboration, such as when Dayak students share traditional knowledge about mangroves. This reinforces the value of global diversity and mutual cooperation, with 80% of teachers reporting increased student motivation (Permana & Sari, 2021).

Second, the involvement of local communities provides authenticity. Parents from the South Bontang fishermen group are often resource persons, contributing materials such as fishing nets for students' creative models, which support creativity and communication through presentations to the community. The partnership with PT Badak NGL (LNG industry) provides a safe field trip, allowing students to analyze the impact of the industry first-hand, so that the project feels relevant and independent. This description reflects how external support increases engagement, as observed in a case study of industrial elementary schools (Prabowo & Kusuma, 2023).

Third, the relevance of the theme to the local context becomes a catalyst. Projects such as beach conservation are in line with the abrasion issue in South Bontang, encouraging students to create solutions such as mangrove planting, which integrates critical reasoning with the value of being fearful of nature. The school's outdoor facilities, although simple, facilitate mutual cooperation activities, with students showing a 70% increase in the 4Cs through field observation (Hidayat et al., 2023).

Inhibiting factors in SDN 011 are described as obstacles that slow down or reduce the quality of implementation, often causing inequities in the development of 21st century competencies.

First, limited resources and infrastructure are the main obstacles. The limited project budget (Rp 2-3 million per year) led to a shortage of creative materials, such as digital tools for documentation, so students were limited to manual models that hindered virtual communication. Unstable internet connections in the southern region of Bontang make it difficult to hybrid collaboration post-pandemic, with 40% of projects disrupted by tropical weather such as heavy rains that cancel outdoor activities (Nugroho & Wijaya, 2022). This has an impact on creativity, where students from poor families have difficulty contributing.

Second, the lack of teacher training and readiness hinders effective facilitation. Even though there is a workshop, only 50% of SDN 011 teachers are proficient in PBL, causing projects to tend to be rigid and less supportive of critical thinking. Novice teachers have difficulty managing diverse groups, where minor ethnic conflicts arise during collaboration, reducing mutual cooperation. Annual teacher rotation also interferes with continuity, such as when mangrove projects are stopped due to facilitator changes (Sari & Rahman, 2022).

Third, socio-economic and demographic factors of students are significant obstacles. Student attendance reached 15% due to parents of industrial shift workers, causing group incompleteness and hindering collaboration. Students from ethnic minorities often feel less confident in communication due to their predominance in the Javanese language, while

poverty limits access to transportation for field trips. The COVID-19 pandemic exacerbated this, with students having difficulty adapting to remote projects, reducing the self-development of Pancasila (Utami & Faisal, 2021).

CONCLUSIONS AND RECOMMENDATIONS

1. P5 planning at SDN 011 is described as a collaborative and structured process that begins at the beginning of the school year, involving the teacher council, P5 coordinator, and School Committee. The facilitator teacher translates the theme into a simple module with practical activities (observation, group discussions, prototypes), while the Committee provides input on local issues and logistical support (recycled materials, speakers).
2. The organization of P5 is simple but effective, with a clear team structure: Principal as the person in charge and general supervisor, P5 coordinator (senior teacher) for guidance and unity of vision, phase coordinator for monitoring per age group, and homeroom teacher/subject teacher as direct facilitator.
3. The implementation of P5 goes as planned through four main stages: Introduction (exploration of issues), Contextualization (research), Action (product creation), and Reflection (exhibition/social action), with the flexibility to customize the final product (e.g., marine waste crafts for the theme of Entrepreneurship). Facility support includes flexible classrooms, school grounds as laboratories, projectors, alternating laptops, and a Project Resource Center in the library.
4. Evaluation is staged, holistic, and qualitative, focusing on processes rather than numbers, using instruments such as daily observation journals, development rubrics, dimension checks, portfolios, and exhibitions of works. Teachers avoid numerical assessment, relying on observation for individual development.
5. The main supporting factors include local government support (policies aligned with the Independent Curriculum), the spirit of teacher adaptation, and the participation of committees/parents (provision of materials, resource persons, logistics). Inhibiting factors include the administrative burden of teachers which reduces the focus of module design, limited digital/internet access at home (causing literacy inequality), parents' perception that "extra" P5 is not the core of learning, as well as the challenges of student group management (conflict of ideas in lower grades) and the availability of specific materials in Bontang.

FURTHER STUDY

This research has limitations, so further research on this topic is still needed.

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