

Analysis of the Implementation of Project-Based Learning Integrated with Javanese Culture in Enhancing Teachers' Professional Competence for Quality Education

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Abstract

Purpose – This study investigates the implementation of Project-Based Learning (PjBL) integrated with Javanese cultural values and its impact on enhancing teachers' professional competence and achieving quality education.

Design/Methodology/Approach – A descriptive qualitative approach was employed. Data were collected through classroom observations, in-depth semi-structured interviews with 12 teachers from three schools in Surakarta and Sukoharjo, and document analysis. Thematic analysis following Braun and Clarke's (2006) framework was used, supported by triangulation and member checking.

Findings – Integrating Javanese principles -*Gotong Royong*, *Unggah-Unggah*, and *Tepa Selira*- into PjBL significantly enhanced teachers' pedagogical, professional, social, and personal competencies. Student cognitive scores improved from an average of 47 (pre-test) to 86 (post-test). The approach fostered higher engagement, motivation, and character development aligned with the Pancasila student profile. It was perceived as substantially more effective than traditional methods in creating meaningful, context-specific learning.

Originality/Value – : This study provides novel insights into culturally responsive PjBL by embedding specific Javanese local wisdom into the Gold Standard PBL framework. It offers practical implications for teacher professional development and curriculum design rooted in indigenous values.

Keywords: *Project-based learning; Javanese culture; teacher professional competence; quality education; local wisdom; culturally responsive pedagogy*

Manuscript received: 07-10-2025; revised: 05-12-2025; accepted: 17-12-2025. Date of publication: 11-01-2026.

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I. INTRODUCTION

Education plays a pivotal role in developing human resources and driving sustainable national progress. A critical determinant of educational quality is teacher professional competence, encompassing pedagogical knowledge, subject mastery, social skills, and personal attributes (Danim & Khairi, 2011; Mulyasa, 2016). In Indonesia, teachers are expected to employ innovative, student-centered pedagogies that are culturally responsive (Kementerian Pendidikan dan Kebudayaan, 2013).

Project-Based Learning (PjBL) promotes critical thinking, collaboration, creativity, and problem-solving (Bell, 2010; Larmer et al., 2015). The Gold Standard PBL framework (PBLWorks, 2019) outlines seven essential elements. However, PjBL implementation in many Indonesian schools often overlooks local cultural values, reducing relevance to students' lives.

In Java, principles such as *Gotong Royong* (mutual cooperation), *Unggah-Unggah* (etiquette and respect), and *Tepa Selira* (empathy and tolerance) embody harmonious social life and character education (Koentjaraningrat, 2015; Hastanto, 2012). These align with the Pancasila student profile in the Merdeka Curriculum and can anchor meaningful PjBL projects.

While previous studies have explored PjBL and cultural integration separately, empirical research on systematically embedding Javanese wisdom into the PjBL framework to enhance teacher

competence remains limited. This study addresses that gap by analyzing implementation in selected schools and examining effects on teachers' professional competence and quality education.

Research questions: (1) How is PjBL integrated with Javanese cultural principles implemented? (2) How does it enhance teachers' professional competencies? (3) What are the impacts on student outcomes and character development?

II. METHOD

This study used a descriptive qualitative design to explore the implementation and impacts of Javanese culture-based PjBL (Creswell, 2014).

Participants: 12 teachers (purposive sampling) from three schools in Surakarta and Sukoharjo actively implementing culturally integrated PjBL for at least one year. Data sources included classroom observations, semi-structured interviews (45–60 min), and document analysis (lesson plans, student projects, rubrics). One class of 35 students provided illustrative pre-post test data.

Data Analysis: Thematic analysis followed Braun and Clarke's (2006) six-phase framework. Trustworthiness was ensured through triangulation, member checking, and audit trail. Ethical approval and informed consent were obtained.

III. RESULT AND DISCUSSION

RESULT

1. Implementation of PjBL Integrated with Javanese Culture

The implementation systematically incorporated the seven Gold Standard PBL elements while embedding Javanese cultural values as the foundational context. Projects began with culturally rooted driving questions, such as "How can we resolve interpersonal conflicts using *Musyawah*, *Unggah-Unggah*, and *Tepa Selira*?" Sustained inquiry occurred over 3–4 weeks through observation of school conflicts, interviews with elders using respectful etiquette, and iterative solution development grounded in Gotong Royong. Authenticity was achieved by producing usable community outputs (e.g., etiquette guides for counseling). Student voice and choice allowed diverse cultural expressions, including Wayang Orang video dramas and elder-interview podcasts. Reflection was facilitated through "Tepa Selira sharing circles," and public products were showcased in school cultural events. Assessment rubrics explicitly weighted cultural competencies alongside academic content.

2. Impact on Teachers' Professional Competence

Thematic analysis revealed substantial improvements across all four domains of teacher professional competence. In pedagogical competence, teachers developed stronger skills in designing culturally responsive projects and facilitating student-centered inquiry while modeling Javanese values. Professional competence grew as teachers researched local heritage to create authentic, interdisciplinary projects. Social competence strengthened through deeper collaboration with community members and modeling *Unggah-Unggah* in classroom interactions. Personal competence increased via heightened self-efficacy, cultural pride, and reflective practice. One teacher stated: "Before, I only delivered content. Now I think about how to make projects feel like real Javanese community life—using *Tepa Selira* in feedback completely changed the classroom atmosphere." Observations confirmed increased use of scaffolding, differentiation, and local resources.

3. Impact on Student Learning Outcomes and Character Development

In the illustrative class of 35 students, average cognitive scores on validated pre- and post-tests improved from 47 to 86 (83% increase). Project rubrics showed high achievement in both academic content and cultural competencies (collaboration, respectful communication, empathy). Qualitative data from observations, attitude surveys, and interviews indicated heightened engagement, intrinsic motivation, and emotional connection to learning. Students expressed strong desire to continue cultural projects (22 of 35 wanted additional Karawitan classes). Character development aligned with the Pancasila student profile was consistently observed and reported, particularly in cooperation (*Gotong Royong*), politeness (*Unggah-Unggah*), and empathy (*Tepa Selira*).

4. Challenges Encountered During Implementation

Teachers reported several challenges: initial limited experience with culturally responsive project design, time pressures within a packed curriculum, and occasional student resistance to shifting from passive to active learning roles. These challenges were particularly evident in the first 1–2 project cycles. Mitigation strategies included school-based professional learning communities, iterative project refinement based on reflection, and leveraging community partnerships for guest facilitators and resources.

DISCUSSION

1. Interpretation of Key Findings

The findings demonstrate that embedding Javanese cultural values into the Gold Standard PBL framework transforms PjBL from a generic pedagogical tool into a culturally meaningful and emotionally resonant learning experience. The systematic integration of Gotong Royong, Unggah-Unggah, and Tepa Selira across all seven project design elements enabled students to connect abstract concepts with lived cultural practices. This aligns with the core principles of culturally responsive pedagogy, which emphasizes validating students' cultural backgrounds as assets for learning (Gay, 2010; Ladson-Billings, 1995). The substantial improvement in cognitive scores (83%) and the qualitative evidence of increased engagement and character development support the conclusion that culturally grounded PjBL yields stronger outcomes than traditional teacher-centered approaches in contexts where local identity is central to students' lives.

2. Contribution to Teacher Professional Competence

The study makes a significant contribution to understanding how PjBL enhances teacher professional competence when culturally contextualized. The observed gains across pedagogical, professional, social, and personal domains suggest that cultural integration serves as a powerful catalyst for teacher growth. Teachers moved beyond technical implementation of PBL steps to become cultural brokers who bridge global pedagogical frameworks with local wisdom. This process enhanced their sense of professional identity and agency—key factors often missing in decontextualized reform efforts. The findings extend previous research on PjBL effectiveness (Krajcik & Shin, 2014; Thomas, 2000) by showing that cultural relevance amplifies both teacher learning and instructional quality. Furthermore, the model supports the goals of Indonesia's Merdeka Curriculum, which prioritizes student agency and contextual learning while strengthening the Pancasila student profile.

3. Theoretical and Practical Implications

Theoretically, this study contributes to the integration of PjBL theory with ethnopedagogical and culturally responsive frameworks. By mapping specific Javanese values onto the seven essential project elements, the research provides a replicable template for other cultural contexts in Indonesia and beyond. Practically, the findings have direct implications for teacher education and professional development. Pre-service and in-service programs should incorporate modules on culturally responsive PjBL design, including how to adapt the Gold Standard elements using local wisdom. Schools and education offices are encouraged to establish professional learning communities focused on cultural integration and to allocate dedicated time for project planning and reflection. The involvement of community leaders and traditional artists as co-facilitators emerged as a particularly effective strategy for authenticity and sustainability.

4. Challenges, Limitations, and Future Research Directions

While the approach showed strong promise, challenges such as initial time demands, curriculum pressures, and the need for ongoing support highlight that successful implementation requires systemic backing. Study limitations include the relatively small purposive sample from one cultural region and the primarily qualitative nature of the data. These limit statistical generalizability. Future research should employ mixed-methods or quasi-experimental designs across multiple provinces and cultural groups (e.g., Minangkabau, Bugis, or Papuan contexts) to quantify comparative effectiveness and identify contextual adaptations. Longitudinal studies examining the sustainability of teacher competence gains and student character development over multiple academic years would also be valuable. Additionally, investigating the role of digital tools in scaling culturally integrated PjBL could address resource constraints in remote areas.

5. Policy Implications for Quality Education

At the policy level, the findings support strengthening the integration of local wisdom into national curriculum frameworks and teacher competency standards. The Merdeka Curriculum's emphasis on contextual learning provides an ideal platform for scaling culturally responsive PjBL. Education policymakers are encouraged to develop guidelines and exemplar modules that explicitly link the seven PBL elements with regional cultural values. Investment in teacher professional development focused on cultural integration, combined with incentives for schools that successfully implement such projects, could accelerate progress toward quality education goals. Ultimately, positioning local culture not as supplementary content but as the core context for learning can help realize the vision of education that is both globally competitive and deeply rooted in Indonesian identity.

IV. CONCLUSION

This study demonstrates that integrating Javanese cultural values—Gotong Royong, Unggah-Unggah, and Tepa Selira—into Project-Based Learning significantly enhances teachers' professional competence across all four domains and contributes to quality education through relevant, engaging, and character-building learning experiences. The model of systematically embedding local wisdom into the Gold Standard PBL elements offers a replicable and contextually meaningful approach for Indonesia.

While challenges exist, they are surmountable with appropriate institutional support and professional development. The findings provide both theoretical contributions to culturally responsive pedagogy and practical guidance for educators, curriculum developers, and policymakers seeking to improve educational quality through culturally grounded innovation.

ACKNOWLEDGMENTS

The authors thank the participating schools, teachers, and students in Surakarta and Sukoharjo for their cooperation. This research received no external funding.

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