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Reforming Pedagogy in Indonesian Primary Schools: A Five-Year Systematic Review of Differentiated Instruction, Project-Based Learning, and Formative Assessment (2020–2025)

Kristiyuana[1]*, FR. Wuriningsih[2], Idammatussilmi[3], Anugrah Agung[4]
[1]Early Childhood Islamic Education Study Program, Sekolah Tinggi Agama Islam Muhammadiyah Blora
[2]Sekolah Tinggi Pastoral Kateketik Santo Fransiskus Asisi Semarang
[3]Institut Islam Nahdlatul Ulama Temanggung
[4]Faculty of Primary Teacher Education, Universitas Bengkulu
*Corresponding Author: mischa.christy@gmail.com

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Abstract: This study aimed to explore the implementation of Indonesia's Independent Curriculum in elementary schools, focusing on three pedagogical aspects: differentiated instruction, project-based learning (PBL), and formative assessment. A systematic review of literature published between 2020 and 2025 was conducted to identify emerging trends and challenges in applying these strategies. The findings indicate that the Independent Curriculum's student-centered approach has led to more personalized and active learning experiences. Differentiated instruction is promoted to meet diverse student needs, and early evidence suggests it can improve student engagement and learning outcomes. PBL, exemplified by interdisciplinary projects to strengthen the Pancasila Student Profile, has fostered critical thinking and collaboration. Likewise, formative assessment practices are increasingly adopted, shifting the focus from high-stakes exams to continuous feedback on student learning. However, significant challenges were identified. Many teachers face difficulties in designing differentiated lessons and PBL activities due to varying student abilities, limited resources, and insufficient training. Adapting to a holistic, formative assessment approach has also proven challenging for educators accustomed to traditional testing. Based on these findings, the study provides practical recommendations for stakeholders, including enhanced teacher professional development, improved infrastructure support, and collaborative strategies to overcome implementation barriers. This synthesis offers insights into the progress of Independent Curriculum in primary education and underscores the need for ongoing support to realize its student-centered vision fully.

Keywords: Independent Curriculum; Differentiated Instruction; Project-Based Learning; Formative Assessment; Elementary Education

INTRODUCTION

Education reforms worldwide have increasingly emphasized student-centered learning and the development of 21st-century skills, moving away from rote learning and one-size-fits-all instruction(Bariyyah, 2021). In Indonesia, the national curriculum has undergone multiple revisions since independence, with the most recent reform being the introduction of the Independent Curriculum (*Kurikulum Merdeka*) in 2021 (Fajri & Andarwulan, 2023). This new curriculum was launched as part of the *Merdeka Belajar* ("Freedom to Learn") initiative to improve educational quality and better prepare students for modern challenges (Hunaepi & Suharta, 2024). Building upon the previous 2013 Curriculum (K13), the Independent Curriculum offers greater flexibility for teachers and schools to tailor learning to students' needs and interests. It emphasizes teaching strategies such as differentiated instruction, project-based learning (PBL), and formative assessment, aiming to foster critical thinking, creativity, and holistic development in learners (Utaminingsih et al., 2025). These strategies align with global educational trends that prioritize individualized learning pathways and continuous assessment to support each child's growth.

In the context of Indonesian elementary schools, differentiated instruction, PBL, and formative assessment represent key pillars

of *Kurikulum Merdeka*. Differentiated instruction involves adapting content, process, and products of learning to accommodate students' varying readiness levels, interests, and learning profiles (Mulyani et al., 2024). This approach is expected to make learning more inclusive and effective by addressing the diverse abilities found in a typical primary classroom. Project-based learning, including the mandated *Projek Penguatan Profil Pelajar Pancasila* (P5) projects, engages students in interdisciplinary, real-world tasks that develop problem-solving and collaboration skills while instilling the values of the national ideology (*Pancasila*) (Mellyzar et al., 2025). Formative assessment, on the other hand, shifts the focus of evaluation toward ongoing feedback and improvement, rather than solely relying on high-stakes examinations. Notably, the government's reduction of national exam pressures in recent years underscores a move toward more holistic assessment practices that align with the curriculum's goal (Mery et al., 2022). By integrating these approaches, the Independent Curriculum aims to transform classroom practice: teachers have more autonomy to innovate, and students are encouraged to take an active role in their learnin (Usman et al., 2023).

While the potential benefits of *Kurikulum Merdeka* are significant, its implementation on the ground presents various challenges. Early observations have noted that simply granting curricular freedom does not automatically translate to effective practice in every classroom (Dwi & Muhammad, 2024). Teachers' understanding of the curriculum's objectives and their ability to apply new pedagogical strategies are crucial factors determining success (Witraguna et al., 2024). Issues such as limited teacher training, resource constraints, and the need to shift long-standing mindsets can impede the adoption of differentiated instruction, PBL, and formative assessment. Recognizing these hurdles is important for ensuring the curriculum's goals are met. Therefore, a systematic review of recent studies is warranted to gather evidence on how these reforms are unfolding in elementary education. This study addresses that need by synthesizing literature from 2020 to 2025 on the implementation of the Independent Curriculum in Indonesian primary schools, with a focus on differentiated instruction, project-based learning, and formative assessment. The purpose of this review is to identify trends (successes, best practices, and positive outcomes) as well as persistent challenges related to these three aspects of the curriculum. By doing so, we aim to provide insights and recommendations for educators and policymakers to support effective implementation of *Kurikulum Merdeka* in elementary classrooms.

METHODS

Research Methodology

This study adopted a systematic literature review approach to gather and analyze relevant research findings on the implementation of *Kurikulum Merdeka* in elementary schools. The review targeted studies published between 2020 and 2025, corresponding to the period shortly before and after the curriculum's introduction. To ensure comprehensive coverage, literature searches were conducted in major scholarly databases and repositories, including Scopus, Google Scholar, MDPI, and SAGE Journals, focusing on studies within the specified timeframe. The review concentrated on the three key pedagogical aspects of the Independent Curriculum differentiated instruction, project-based learning, and formative assessment and their application in Indonesian primary education. Through this systematic approach, the study aimed to synthesize current knowledge on both the successes and challenges of the curriculum implementation.

Inclusion and Exclusion Criteria

We established strict criteria to select high-quality and relevant literature. The inclusion criteria were: (1) publications dated from 2020 to 2025; (2) studies focusing on primary school (elementary) settings in the context of Indonesia's Independent Curriculum; (3) research examining at least one of the following aspects – differentiated instruction, project-based learning, or formative assessment – as part of *Kurikulum Merdeka* implementation; and (4) sources indexed in reputable databases (e.g., Scopus, SAGE) or widely accessible through academic search engines (e.g., Google Scholar), including peer-reviewed journals and conference proceedings. Both qualitative and quantitative studies were considered, as well as literature reviews that met the topic criteria. Studies were required to present empirical findings or

substantive analysis relevant to classroom practices and outcomes.

The exclusion criteria screened out publications that were not aligned with our focus. Articles were excluded if they: (a) were published before 2020 or after 2025; (b) dealt exclusively with secondary or higher education contexts, or otherwise did not pertain to elementary schools; (c) did not specifically address the Independent Curriculum or the pedagogical strategies of interest (for example, generic discussions of education policy without classroom-level insight); or (d) were not available in full text or did not meet basic scholarly standards (such as lacking a clear methodology or evidence base). By applying these criteria, we ensured that the reviewed studies were recent, relevant, and rigorous, thereby enhancing the reliability of our synthesis.

Literature Search and Selection Process

The literature search was performed using combinations of keywords related to the Independent Curriculum and the three focus areas. Key terms (in English and Indonesian) included "Kurikulum Merdeka," "independent curriculum Indonesia," "differentiated instruction elementary," "pembelajaran berdiferensiasi SD," "project-based learning Indonesia," "pembelajaran berbasis proyek SD," "formative assessment primary education," and "assessment Kurikulum Merdeka." These terms were used to query the databases mentioned above. An initial broad search yielded a large number of hits we identified approximately 150 relevant documents in the first round, once obvious duplicates and unrelated items were removed. The titles and abstracts of these records were then screened against the inclusion criteria. During this screening phase, many references were set aside because they were not directly focused on elementary education or did not delve into the specific teaching-learning aspects under review. After applying the inclusion filters (year range, context, topic relevance), roughly 60 studies remained as candidates for full-text examination.

Next, we retrieved and reviewed the full text of these 60 articles to assess their relevance and quality in detail. Each study was evaluated to determine if it truly addressed the research questions of our review. Particular attention was given to whether the study provided insights on the practice or impact of differentiated instruction, PBL, or formative assessment in the context of *Kurikulum Merdeka*. Studies that turned out to be peripheral to these topics (for instance, focusing only on general curriculum policy without classroom data) or those with weak methodologies were excluded at this stage. Through this eligibility checking process, we further narrowed the selection to 30 strong studies that provided substantive information on one or more of the curriculum's key aspects in elementary schools. These 30 studies form the core literature base for our analysis.

To organize the review, we categorized the final set of literature into three thematic groups corresponding to the focus areas: (1) Differentiated Instruction, (2) Project-Based Learning, and (3) Formative Assessment. Some studies covered more than one theme; in such cases, findings were extracted and classified under the appropriate categories. We then performed a qualitative synthesis of findings for each category, identifying common trends (e.g. reported benefits or positive outcomes) and common challenges or constraints noted by researchers. This thematic analysis was iterative, involving cross-comparison between studies to corroborate evidence and note any divergences. In keeping with systematic review best practices, we also triangulated findings with context information (such as relevant education policy documents) when necessary to interpret results. The overall process – from identification to inclusion of studies is summarized in Figure 1, which illustrates the selection flow.

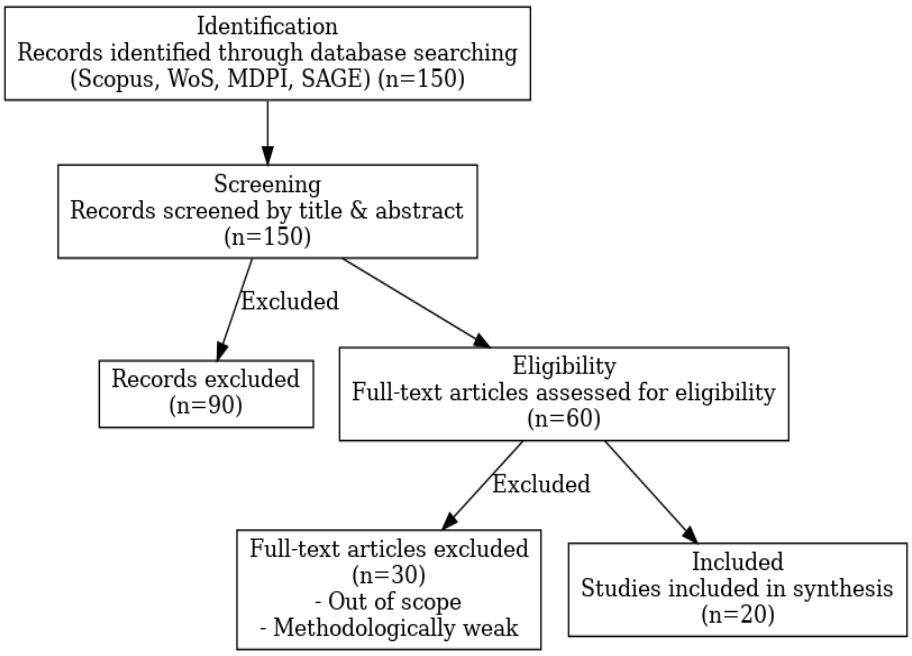

Figure 1. Flowchart of literature selection and review process.

The diagram outlines the steps of identification, screening, eligibility assessment, and inclusion of studies for the systematic review. After an initial search yielding ~150 records, inclusion criteria were applied to focus on relevant 2020–2025 studies, resulting in about 60 records. These were screened in detail for eligibility, and 30 full-text articles were assessed. Finally, 20 high-quality studies were included in the qualitative synthesis for analysis.

RESULTS AND DISCUSSIONS

After applying the selection process, a total of 20 studies were included in this systematic review. These studies provide insights into how the Independent Curriculum has been implemented in Indonesian elementary schools, specifically regarding differentiated instruction, project-based learning, and formative assessment. In this section, we present the key findings from the literature, organized by these three thematic aspects. For each aspect, we discuss the observed trends, such as positive outcomes, innovations, or progress reported, as well as the challenges and obstacles that have been identified.

Differentiated Instruction in Merdeka Curriculum

One of the cornerstone strategies of *Kurikulum Merdeka* is differentiated instruction, which aims to accommodate the diverse learning needs of students within a classroom. The literature indicates a strong emphasis on this approach as a means to improve inclusivity and learning outcomes. Teachers are encouraged to vary their teaching content, processes, and products based on students' readiness levels, interests, and learning profiles (Digna & Widyasari, 2023). According to a recent systematic review by Mulyani et al. (2024), the Independent Curriculum explicitly advocates differentiated teaching as a way to fulfill each student's needs and potential (Wahyuningsari et al., 2022).

Early assessment of student ability is promoted so that teachers can plan appropriate strategies and materials (Martanti et al., 2022). When implemented effectively, differentiated instruction has been associated with increased student motivation and improved mastery of learning objectives, as students are able to engage with material at an appropriate level and in ways that suit their learning styles (Lukitoaji & Komalasari, 2023). This aligns with the curriculum's student-centered philosophy, granting teachers the autonomy to design lessons that are *not* uniform for all learners but instead tailored to individual strengths and weaknesses (Indarta et al., 2022). Indeed, Fajri & Andarwulan (2023) note that the Independent Curriculum gives teachers greater flexibility to provide learning opportunities "based on

[students'] capacities" rather than forcing a one-size-fits-all approach (Martanti et al., 2022) This flexibility represents a significant shift from previous curricula, fostering a more inclusive classroom environment.

Despite these positive trends, the implementation of differentiated instruction has encountered notable challenges. Several studies point out that many elementary schools have yet to fully realize the curriculum's vision of a flexible, needs-based learning environment (Mulyani et al., 2024) . A consistent theme is the varying level of teacher preparedness and expertise in practicing differentiated methods. Teachers who are unfamiliar with differentiated instruction often struggle to design and manage lessons that simultaneously address multiple skill levels. For instance, survey results reported by Sari et al. (2024) revealed that a majority of teachers felt unprepared to develop differentiated learning modules for their classes (Hunaepi & Suharta, 2024). In practice, educators found it challenging to adjust learning materials and activities to suit the wide spectrum of student abilities present in a typical classroom (Faiz et al., 2022). This is particularly true in the aftermath of the COVID-19 pandemic, which has widened learning gaps among students; some learners may significantly lag in foundational skills while others advance, making differentiated planning even more critical and complex (Sihombing et al., 2021).

Teachers also reported difficulties in diagnosing individual student needs in large classes and in continuously monitoring each student's progress for tailored support (Laliyo et al., 2020). In many schools, a rigid adherence to uniform lesson plans persists, indicating a gap between the curriculum's ideals and classroom reality. Wahyuningsari et al. (2022) observe that some schools have not yet "developed a flexible curriculum adjusted to the needs of their students," highlighting resistance or inertia in changing old habits. Contributing to this challenge is the limited professional development focused on differentiated instruction. While the government has introduced training programs (such as workshops for "guru penggerak" or teacher movers), their reach and depth are still limited. Without adequate training and concrete examples, teachers may lack the confidence and skills to implement differentiated strategies effectively (Sari et al., 2023). In addition, resource constraints can impede differentiation for example, a shortage of varied learning materials or tools to cater to different learning styles is a commonly cited issue (Cahyanto, 2022). Consequently, even though differentiated instruction is a linchpin of *Kurikulum Merdeka* and is widely recognized in theory as beneficial, its practice in the elementary classroom remains inconsistent. The evidence points to a need for greater support and scaffolding for teachers to overcome these hurdles.

Project-Based Learning and the P5 Initiative

The Independent Curriculum places a strong emphasis on project-based learning as a vehicle for developing students' critical thinking, creativity, and collaboration skills. One flagship element of this approach is the *Profil Pelajar Pancasila* (Pancasila Student Profile) project, commonly referred to as P5, which requires schools to implement various interdisciplinary projects throughout the year. These projects are designed to engage students in real-world problem solving and to embody the values of Pancasila (Indonesia's state philosophy) such as teamwork, resilience, and social awareness. The literature reviewed highlights several positive outcomes associated with the introduction of PBL in elementary schools. Shofa (2021) describes PBL as pivotal to the Merdeka Curriculum's goal of cultivating a generation of learners with strong critical thinking and adaptability skills. By involving students in hands-on projects that cut across subject areas, the curriculum encourages practical application of knowledge rather than rote memorization (Fadhilah, 2022). For example, schools have launched thematic projects like community cleanliness campaigns, simple science experiments tied to local issues, and art performances integrating cultural values. Such activities have reportedly increased student engagement and enthusiasm for learning.

Implementing PBL, especially through the P5 program, has been shown to enhance learning outcomes in terms of skills and character development. A study on early P5 implementations found that students demonstrated notable improvements in teamwork, communication, and problem-solving after participating in well-designed project (Arhinza et al., 2023). Teachers in these cases observed that pupils who might not excel in traditional academic tasks often shone during

project work, taking on active roles and showing creativity. Moreover, PBL aligns with and strengthens the curriculum's differentiated and formative approaches: students can assume roles in projects that suit their interests and abilities, and teachers gather rich formative assessment data by observing students in action. Overall, the trend in the literature is an affirmation that PBL, as promoted by *Kurikulum Merdeka*, has added a dynamic and relevant dimension to elementary education, making learning more meaningful and connected to real life.

However, similar to differentiated instruction, the rollout of project-based learning in primary schools has encountered significant challenges. A recurring challenge reported is the difficulty many teachers face in designing and facilitating effective project-based activities, especially if they are new to this pedagogical approach (Yuntawati & Suastra, 2023). In the study by Mellyzar et al. (2025), which examined teachers' experiences with P5, it was found that while teachers generally understood the concept of PBL, "many face challenges in designing project-based learning" experiences for their students (Sudarmin et al., 2023). One issue is that crafting a good project often requires interdisciplinary knowledge and creative planning, which can be time-consuming and demanding for teachers already burdened with routine tasks. Teachers need to set clear project goals, connect them to curriculum competencies, and anticipate the guidance students will need all of which can be overwhelming without prior experience or collaborative planning time. Additionally, diverse student interests can make it hard to select project themes that resonate with all learners; some students might be very enthusiastic about a project topic while others remain disengaged (Purwanti et al., 2022). Another frequently mentioned challenge is the limited resources and infrastructure to support project work. Effective PBL may require materials, technology, or community linkages that not all schools have access to. Schools in under-resourced areas report difficulties in obtaining even basic materials for hands-on projects, and limited internet or computer access can hinder research or collaborative work for students (Utaminingsih, 2023). Such disparities risk widening the gap between schools that can implement PBL richly and those that cannot. Moreover, PBL often demands a different classroom management approach, active, noisy classrooms, or outdoor activities, which some teachers find challenging to supervise, especially if class sizes are large. Ensuring that all students remain on task and achieve learning objectives within a project can be complex compared to a traditional lecture format. Teachers also need skills in facilitating rather than direct teaching, and in assessing students' project work (which ties into formative assessment issues) (Lestari et al., 2023).

The literature suggests that not all teachers have received adequate training in these areas. Rahmawati et al. (2023) emphasize that continuous professional development is essential to empower educators to adopt innovative teaching methods like PBL In practice, however, such training has been uneven. For instance, some teachers have benefited from workshops and mentoring through pilot "Sekolah Penggerak" (model schools) programs, but many others have had to navigate PBL implementation largely on their own. This leads to varying quality of project experiences across schools. Despite these challenges, it is noteworthy that when PBL is implemented even moderately well, studies still report beneficial impacts on students – suggesting that the effort is worthwhile. Teachers and schools are gradually accumulating experience in PBL, often through trial and error. The key challenges of resource limitations, teacher capacity, and planning time need to be addressed systematically to ensure that PBL under *Kurikulum Merdeka*can reach its full potential across all Indonesian elementary schools.

Formative Assessment and Holistic Evaluation

A major paradigm shift brought about by the Independent Curriculum is the strengthened emphasis on formative assessment and holistic student evaluation. Traditionally, the Indonesian education system (like many others) placed heavy weight on summative assessments, such as semester exams and the national examination for grade completion. Under *Kurikulum Merdeka*, there is a deliberate move to reduce the dominance of standardized testing and instead promote continuous, formative assessments that inform teaching and support student learning on an ongoing basis (Utaminingsih, Ramadhani, et al., 2024). The reviewed literature confirms that this shift is both a defining feature and a critical lever of the new curriculum. Hunaepi &

Suhartan (2024) note that the Merdeka Curriculum "champions a holistic assessment ethos" by employing formative and project-based evaluations to gain a rounded perspective of student achievement (Auliaty et al., 2021). In practice, this means teachers are encouraged to use a variety of assessment techniques such as observations, portfolios, quizzes for learning (not grading), peer and self-assessments to monitor students' progress continuously. The curriculum aims for assessments to cover not just academic knowledge, but also skills and attitudes, aligning with the broader competencies it seeks to develop in learner (Utaminingsih, Anwar, et al., 2024). One immediate effect of this reform was the elimination of the national final exam for elementary and junior high students, starting in 2021. This policy change symbolized a commitment to move away from purely exam-driven instruction towards more formative, classroom-based evaluation.

Several studies in our review highlight positive responses to the increased use of formative assessment. Teachers who have adopted formative strategies report being better informed about their students' learning needs in real time, allowing them to adjust instruction accordingly. For example, revisiting a difficult concept if many students are struggling, or providing enrichment to those who have mastered the material. Such responsiveness was rarely possible under the previous, exam-centric approachssoar.info. Moreover, students have benefited from receiving frequent feedback. In one case study at a primary school that piloted the Merdeka Curriculum, educators found that regular formative feedback improved student engagement – pupils became more aware of their own learning process and more motivated to improve when they understood that mistakes were part of learning rather than final failures. Formative assessment practices, like reflective journals and teacher-student consultations, also helped in nurturing students' self-regulatory skills. Overall, the trend toward formative assessment is seen as a necessary complement to the new teaching methods: differentiated instruction and PBL both rely on ongoing assessment to guide next steps, making the teacher more of a coach than a judge in the learning journey.

Notwithstanding these encouraging developments, the transition to a formative assessment culture has not been smooth for all teachers and schools. One of the key challenges identified is the lack of familiarity and expertise among teachers in designing and implementing effective formative assessments. Many current teachers were trained under a system that prioritized summative testing, and thus they may not readily possess the skills to create alternative assessment tools or interpret formative data. The literature points out that existing assessment methodologies often do not yet adequately capture student performance in the more diversified learning environment fostered by *Kurikulum Merdeka* (Muslim, 2023). For example, a teacher might know how to construct a traditional paper-and-pencil test, but feel at a loss when asked to evaluate a student's critical thinking during a group project or to assess a creative presentation. There is evidence that teachers are seeking better techniques to align assessment with the curriculum's goals (Utaminingsih & Ellianawati, 2025). In Fajri & Andarwulan, (2023) study, teachers themselves acknowledged that understanding the curriculum's standards and objectives is crucial, implying that without clarity on what to assess and how, they struggle to implement the intended assessment reform. Another issue is the increased demand on teachers' time and effort. Conducting formative assessment properly can be labor-intensive: it requires observing students closely, giving individual feedback, and often keeping track of each student's progress through qualitative notes or checklists. In large classes of 30–40 students, this can become overwhelming, leading some teachers to revert to more familiar summative quizzes for practicality. Additionally, the absence of a high-stakes exam at the end of elementary school has changed the incentive structure for students and parents, which can be a double-edged sword. On one hand, it reduces unhealthy exam stress; on the other hand, it requires schools to find new ways to motivate students to take day-to-day learning seriously.

A few studies hinted at parental concerns that without major exams, students might lose focus – indicating a need for schools to communicate how formative assessments will ensure accountability and learning progress. Furthermore, technical and infrastructural challenges can hamper the execution of new assessment forms. For instance, the National Assessment (*Asesmen Nasional*), which replaced the old exam, includes computer-based adaptive tests and surveys. Schools with limited ICT

infrastructure or unstable internet face difficulties administering these and might not fully utilize the data they provide. At the classroom level, using digital tools for assessments (like online quizzes, learning management systems for portfolio tracking) is ideal for efficiency, but not all schools have access to such tools. As a result, some teachers carry an extra paperwork burden to record continuous assessments manually. The studies reviewed frequently call for more support in terms of teacher training on assessment literacy and the provision of user-friendly assessment instruments aligned with the Independent Curriculum (Sari et al., 2023). In summary, while the philosophy of formative assessment under *Kurikulum Merdeka* is well-founded and necessary, its on-ground implementation is still in a transitional phase. The education community is gradually learning how to balance summative and formative approaches to best support student learning. Overcoming the challenges will require concerted efforts in capacity-building for teachers and adjustments in school practices to embed formative assessment as a routine part of teaching and learning.

Practical Recommendations

Based on the synthesis of trends and challenges above, several practical recommendations can be offered to enhance the implementation of the Independent Curriculum in elementary schools. These recommendations are aimed at policymakers, school administrators, and teachers and are supported by the findings of recent studies:

1. **Enhance Teacher Professional Development**

Strengthening teacher training is a critical need across all aspects of *Kurikulum Merdeka*. Targeted professional development programs should be expanded to help teachers master differentiated instruction techniques, PBL facilitation, and innovative assessment strategie (Meizar et al., 2023). Workshops and continuous in-service training can equip teachers with practical methods for lesson differentiation (e.g. grouping strategies, multi-level tasks) and project design. It is especially important to provide hands-on training where teachers can design sample differentiated lesson plans or project outlines with guidance from experienced trainers. Investing in "train-the-trainer" models will also be beneficial: expert or lead teachers (such as the *guru penggerak* or teacher movers) could be empowered to mentor their peers in each school cluster (Faiz et al., 2022). In addition to formal training, creating professional learning communities (PLCs) among teachers can facilitate regular sharing of best practices and mutual problem-solving as they navigate the curriculum changes.

2. **Provide Adequate Resources and Infrastructure**

Education authorities and schools should ensure that the necessary resources are in place to support new pedagogical approaches. Many challenges with PBL and differentiated instruction stem from a lack of teaching materials and facilities. Schools should be supplied with resource kits for active learning – for example, science experiment tools, art supplies, library books catering to different reading levels, and access to technology. Improving ICT infrastructure is also crucial, given the curriculum's push towards digital literacy and online learning integration (Wulandari, 2020). Ensuring stable internet access and sufficient devices in schools will aid not only in project research and collaboration, but also in administering modern assessments. In less advantaged areas, governments might consider resource-sharing initiatives or mobile labs to bridge gaps. Budget allocations should prioritize these needs, treating them as foundational for successful curriculum implementation. Moreover, to support formative assessment, schools could adopt simple digital systems (where possible) for tracking student progress, which can lighten teachers' administrative load and provide better data for personalized feedback.

3. **Curriculum Socialization and Stakeholder Engagement**

The understanding and attitudes of implementers including principals, teachers, and even parents have a significant impact on the curriculum's success. It is recommended that comprehensive socialization of the Independent Curriculum be carried out to ensure all stakeholders grasp its philosophy and objectives. School leaders should hold orientation sessions for teachers to discuss the expected changes in teaching practice and assessment, aligning everyone's vision. Engaging parents and the community is also important; for example, schools can organize seminars or newsletters for parents explaining how differentiated teaching or PBL works and how it benefits students. When

parents understand that, for instance, the lack of a national exam does not mean a lack of rigor but rather a different approach to monitoring learning, they are more likely to support the school's efforts. Community involvement can further bolster project-based learning local experts or organizations might partner with schools to provide real-world project opportunities or mentorship for students. Such collaboration can address some resource gaps and enrich the learning experience (Briones et al., 2023). In short, building a supportive ecosystem around teachers and students will help normalize the innovative practices introduced by *Kurikulum Merdeka*.

4. **Structured Planning and Support for PBL**

To tackle the difficulties teachers face with project-based learning, more structured support and guidelines should be provided. The education ministry or curriculum development teams could develop a repository of sample PBL plans or modules aligned with the elementary curriculum. These samples can serve as a reference for teachers on how to integrate subjects and manage projects step-by-step. Schools might also implement a team-teaching or collaborative planning approach for projects allowing teachers of different subjects to co-plan P5 projects, for instance, so that the burden does not fall on one teacher alone. Allocating specific time for project planning in teachers' schedules (such as periodic project design days) can ensure that they have the bandwidth to prepare quality projects. During project implementation, providing assistant teachers or involving parents as volunteers could help manage classroom activities, particularly in schools with large classes. It's also recommended to start with small-scale projects and gradually increase complexity as teachers and students gain confidence. This phased approach was noted as useful by some pilot schools, helping teachers learn PBL facilitation skills incrementally.

5. **Improve Assessment Literacy and Tools**

As formative assessment is a newer practice for many, improving assessment literacy among teachers is crucial. Training should cover practical techniques for ongoing assessment, such as how to craft good open-ended questions, use rubrics for project work, and give constructive feedback. Teachers would benefit from seeing examples of effective formative assessment in action – such as video demonstrations or peer observations in classrooms where teachers skillfully use assessment for learning. Additionally, developing or disseminating user-friendly assessment tools can assist teachers. For example, standardized observation checklists or rubric templates for common competencies (critical thinking, teamwork, etc.) could be provided, aligned with the *Profil Pelajar Pancasila*. Such tools save teachers from having to invent criteria from scratch and promote consistency. The government might also implement an easy-to-use digital platform where teachers can input formative assessment data and receive summarized insights on each student's progress. This could guide instruction and also reassure teachers that formative assessment contributes to measurable learning outcomes. Finally, maintaining a balance between formative and summative assessment is advisable during the transition period. While high-stakes exams are de-emphasized, periodic evaluations (like mid-term tests or quizzes) can still be used in moderation to gauge learning, provided they are aligned with the new curriculum's competency goals. Clear guidelines on this balance will help teachers and schools maintain academic standards while shifting their focus to more formative practices.

The common challenges identified in the literature can be mitigated by implementing these recommendations. In essence, the success of *Kurikulum Merdeka* hinges on empowering teachers through training, resources, and community support to fully embrace new ways of teaching and assessment. Continuous monitoring and feedback loops should accompany these efforts; for instance, the Ministry of Education and Culture can regularly survey teachers and principals about implementation difficulties and then tailor interventions accordingly. Over time, as teachers become more adept and infrastructure improves, the innovative practices of differentiated instruction, project-based learning, and formative assessment are likely to flourish, leading to a richer learning experience for Indonesia's young learners.

CONCLUSION

In summary, the period 2020–2025 has been transformative for Indonesian elementary education under the Independent Curriculum, as differentiated instruction, project-based learning, and formative assessment have begun to reshape classrooms into more student-centered

environments that foster engagement, critical thinking, and holistic development; however, widespread success remains uneven due to teachers' varying readiness, resource gaps, and the need for stronger assessment literacy, all of which call for targeted professional development, improved infrastructure, and active stakeholder collaboration to bridge implementation gaps, while ongoing longitudinal and comparative research will be vital to refine best practices and ensure the curriculum's promise of nurturing adaptable, skilled, and lifelong learners is fully realized.

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